Deutsche Bank

Annual Report 2018

Deutsche Bank

The Group at a glance

	2018	2017
Key financial information		
Post-tax return on average shareholders' equity	0.4 %	(1.2) %
Post-tax return on average tangible shareholders' equity	0.5 %	(1.4) %
Cost/income ratio[1]	92.7 %	93.4 %
Compensation ratio[2]	46.7 %	46.3 %
Noncompensation ratio[3]	46.0 %	47.0 %
Total net revenues, in € m.	25,316	26,447
Provision for credit losses, in € m.	525	525
Total noninterest expenses, in € m.	23,461	24,695
Adjusted costs[4]	22,810	23,891
Income (loss) before income taxes, in € m.	1,330	1,228
Net income (loss), in € m.	341	(735)
Basic earnings per share	€ (0.01)	€ (0.53)
Diluted earnings per share	€ (0.01)	€ (0.53)
Share price at period end	€ 6.97	€ 15.88
Share price high	€ 16.46	€ 17.82
Share price low	€ 6.68	€ 13.11

	Dec 31, 2018	Dec 31, 2017
CRR/CRD 4 Leverage Ratio (fully loaded)	4.1 %	3.8 %
CRR/CRD 4 Leverage Ratio (phase in)	4.3 %	4.1 %
Fully loaded CRR/CRD 4 leverage exposure, in € bn.	1,273	1,395
Common Equity Tier 1 capital ratio (fully loaded)	13.6 %	14.0 %
Common Equity Tier 1 capital ratio (phase in)	13.6 %	14.8 %
Risk-weighted assets, in € bn.	350	344
Total assets, in € bn.	1,348	1,475
Shareholders' equity, in € bn.	62	63
Book value per basic share outstanding	€ 29.69	€ 30.16
Tangible book value per basic share outstanding	€ 25.71	€ 25.94
Other Information		
Branches	2,064	2,425
Thereof: in Germany	1,409	1,570
Employees (full-time equivalent)	91,737	97,535
Thereof: in Germany	41,669	42,526

[1] Total noninterest expenses as a percentage of net interest income before provision for credit losses, plus noninterest income.
[2] Compensation and benefits as a percentage of total net interest income before provision for credit losses, plus noninterest income.
[3] Noncompensation noninterest expenses, which is defined as total noninterest expenses less compensation and benefits, as a percentage of total net interest income before provision for credit losses, plus noninterest income.
[4] The reconciliation of adjusted costs to noninterest expenses is provided in section "Supplementary Information (Unaudited): Non-GAAP Financial Measures: Adjusted costs" of this document.

Due to rounding, numbers presented throughout this document may not sum precisely to the totals provided and percentages may not precisely reflect the absolute figures.

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Letter from the Chairman of the Management Board

Dear Shareholders,

We can look back on 2018 as a year that was anything but easy for Deutsche Bank. Despite many challenges, we accomplished a great deal, made excellent progress in many areas and achieved our stated objectives. Deutsche Bank has built very solid foundations – this is the basis for controlled growth.

The clearest sign of the turnaround is that for the first time since 2014 we reported a net profit, of 341 million euros. Year-on-year this is an improvement of more than 1 billion euros. We also managed to increase our pre-tax profit to 1.3 billion euros. Returning to profitability was a vital milestone for us.

A new spirit of cost discipline played a key role. This enabled us to reduce our adjusted costs by more than 1 billion euros. At 22.8 billion euros for the year, our adjusted costs even beat the target we set ourselves of 23 billion euros, and as a consequence we have tightened our cost target for 2019 by 200 million euros to 21.8 billion euros. The discipline was particularly evident in the fourth quarter, where we have seen an uptick in costs in some previous years. We are determined to continue on this path. We reduced the number of full-time equivalent employees in the Deutsche Bank Group by almost 6,000 to 91,700, comfortably hitting our target of bringing our workforce down to below 93,000 full-time equivalents.

We achieved all this without compromising on our controls. We have continued hiring more staff in control functions, in particular strengthening our Anti-Financial Crime unit. We are investing in tightening our 'Know your Client' processes and improving our systems for reporting suspicious transactions. In this context we are cooperating closely with our regulators.

Of course, cost reductions on this scale had some impact on revenues, which fell 4% in 2018. This development was driven partly by difficult market conditions later in the year, which also affected our international peers, and partly by disciplined implementation of our strategic decision to re-focus our business.

At the same time we further strengthened our balance sheet. We have solid capital ratios and significant liquidity reserves, our leverage ratio improved during the year, and levels of both credit and market risk remain low.

With a return to profitability, improved internal controls and a strong balance sheet, we have laid firm foundations for the controlled growth which is now our strategic priority. We are not yet where we want to be; but we believe that we are on the right path to provide you, our shareholders, with sustained higher returns. In this regard it is important to highlight that we operate in a challenging market environment and we are considering strategic opportunities as they arise. While there is no certainty transactions expected by market participants will occur, the basis for any decisions must be to improve the growth and return profile of the bank. We intend to analyze our options with the same commercial discipline we brought to our strategic and operational decisions in 2018.

Strategic milestones reached

2018 was also a year in which we re-focused our business. After careful analysis we are aligning our Corporate & Investment Bank (CIB) towards businesses which are most important for our clients and where we have, or can attain, a leading position. In other areas we have scaled back our resource commitment - for instance, in segments of the Equities business and US Rates. We reduced our leverage exposure in CIB by more than 130 billion euros in 2018, and this impacted revenues as anticipated.

We aim to remain a relevant partner to the world's global companies, providing them with a comprehensive range of advisory services and access to the capital markets. Our Global Transaction Banking unit is a world leader in a number of areas including Trade Finance and Cash Management. Our Markets business including Fixed Income & Currencies (FIC), where we are the only European institution among the world's four leading banks, is also highly important to our clients.

Corporate Finance is a vital part of our offering, primarily in our home market of Europe, but also through our strong but focused presence in North America and Asia. Deutsche Bank is one of the world's leading debt capital market houses.

In our Private & Commercial Bank, we made fundamental changes last year. We are integrating Deutsche Bank and Postbank in our home market, and in May we merged the relevant legal entities to form the "Bank for Germany". Now we are in the process of merging the head offices and infrastructure functions of the two banks, including their day-to-day operations.

Joining forces should enable us to constantly improve the service to our 20 million-plus clients in Germany, and unlock synergies of some 900 million euros annually which we aim to fully realize by 2022. This also gives us the opportunity to reap the benefits of economies of scale, which are becoming increasingly important in this business – not least for investments in digital platforms.

We also made progress outside Germany. We completed the disposal of large parts of our Private & Commercial Clients business in Poland while the divestment in Portugal is well advanced. We successfully integrated Sal. Oppenheim into our Wealth Management business with only modest client attrition.

Our Private & Commercial Bank generated a post-tax return on tangible equity of about 5 percent in 2018 despite significant restructuring and a very challenging interest rate environment - and this is before synergies anticipated from the creation of the "Bank for Germany". That shows the enormous potential of this business.

The partial flotation of our asset manager, DWS, in March 2018 was a milestone event. This provides the entrepreneurial independence that we expect will enable DWS to tap future growth opportunities more effectively – among other things by immediately supplying DWS with its own acquisition currency.

The new alliances that DWS has forged with insurers Nippon Life and Generali, and with the French asset manager Tikehau Capital, are also very promising. I am very confident that with its new leadership, DWS will once again build on its historic strengths.

Solid balance sheet and strong liquidity

The successful reorganisation of our business divisions is one of the things we determined we needed in order to grow again. The second is our financial strength: in a number of key dimensions, Deutsche Bank has rarely been as stable as it is today:

- Our Common Equity Tier 1 (CET1) ratio of 13.6 percent at year-end comfortably meets our target of above 13 percent – and is higher than almost all of our leading peers.
- We have reduced our balance sheet considerably over the years and improved its quality.
- Our market risk levels and our credit risk losses have rarely been so low.
- Our liquidity reserves are around four times higher than a decade ago and are well above the levels required by our regulators.
- We have substantially reduced our legal risks in recent years.

Looking ahead: reaping the benefits of work done in 2018

Looking forward, we continue to manage the company towards our near- and medium-term targets, including generating a Return on Tangible Equity of more than 4% in 2019. While financial market conditions in our Sales & Trading businesses have improved significantly in the first quarter of 2019 compared to the turbulent environment we saw in the fourth quarter of 2018, activity levels are relatively muted on a historical comparison. To support the achievement of our financial targets to the fullest extent possible, we will continue to manage all aspects in our direct control, including ongoing expense discipline.

We are encouraged that despite the challenging environment we have felt the strong backing of our clients. They rely on Deutsche Bank, and corporate clients in particular want a European alternative to the big US banks.

I am firmly convinced that all our business divisions generate a positive impact for our clients, our staff, our investors and society as a whole. Deutsche Bank plays its part in driving economic growth and ultimately social progress. Banks are the lifeblood of the economy. We acknowledge this weighty responsibility and regard ourselves as a corporate citizen at the heart of society. For more details on how we practice corporate responsibility, please consult our Non-Financial Report which we are also publishing today.

We want to promote economic growth and social progress, in Germany and beyond. At home in Europe, connected to the world – that is our ambition.

Best regards,

Christian Sewing
Chief Executive Officer
Deutsche Bank AG

Frankfurt am Main, March 2019

Management Board

Christian Sewing, *1970
since January 1, 2015
Chairman of the Management Board
(since April 8, 2018)
President
(until April 8, 2018)
Co-Head of Private & Commercial Bank
(including Postbank)
(until April 8, 2018)

Garth Ritchie, *1968
since January 1, 2016
President
(since April 8, 2018)
Co-Head of Corporate & Investment Bank
(until May 24, 2018)
Head of Corporate & Investment Bank
(since May 25, 2018)

Karl von Rohr, *1965
since November 1, 2015
President
(since April 8, 2018)
Chief Administrative Officer

Frank Kuhnke, *1967
since January 1, 2019
Chief Operating Officer

Stuart Lewis, *1965
since June 1, 2012
Chief Risk Officer

Sylvie Matherat, *1962
since November 1, 2015
Chief Regulatory Officer

James von Moltke, *1969
since July 1, 2017
Chief Financial Officer

Werner Steinmüller, *1954
since August 1, 2016
Regional CEO for Asia

Frank Strauß, *1970
since September 1, 2018
Co-Head of Private & Commercial Bank (including Postbank)
(until April 8, 2018)
Head of Private & Commercial Bank (including Postbank)
(since April 8, 2018)

Management Board in the reporting year:

John Cryan
Chairman of the Management Board
(until April 8, 2018)

Marcus Schenck
(until May 24, 2018)
President
(until April 8, 2018)
Co-Head of Corporate & Investment Bank
(until May 24, 2018)

Christian Sewing
Chairman of the Management Board
(since April 8, 2018)
President
(until April 8, 2018)
Co-Head of Private & Commercial Bank
(including Postbank)
(until April 8, 2018)

Garth Ritchie
President
(since April 8, 2018)
Co-Head of Corporate & Investment Bank
(until May 24, 2018)
Head of Corporate & Investment Bank
(since May 25, 2018)

Karl von Rohr
President
(since April 8, 2018)

Kimberly Hammonds
(until May 24, 2018)

Stuart Lewis

Sylvie Matherat

James von Moltke

Nicolas Moreau
(until December 31, 2018)

Werner Steinmüller

Frank Strauß

Dear Shareholders,

Your Deutsche Bank still did not deliver the upswing in the reporting year 2018 which you as shareholders expect and which the Management Board, Supervisory Board and all staff members are striving for.

Deutsche Bank is a strong institution, one that is rich in tradition and that has already had to cope with many crises and difficult periods in its 149-year history. It has always managed to master the challenges and emerge from these situations with renewed strength.

Even if the share price does not seem to reflect this, important groundwork was laid for such an upswing in 2018.

In April, we appointed Mr. Sewing as Chairman of the Management Board, a chief executive who is thoroughly familiar with all facets of the bank. As the bank's former Deputy Chief Risk Officer, Mr. Sewing is equally at home in the international capital markets business as in corporate and retail banking in Germany, which he was responsible for over the last few years. The targets he announced for 2018 after his appointment with regard to costs, headcount, capital and profitability were all achieved.

In the costs area, in particular, the bank and its managers have developed a degree of discipline that was missing in the past. The bank's balance sheet is much more robust than it has been for a long time, and the liquidity position reached a very high level.

Profit for 2018 was severely impacted by internal and external effects in the fourth quarter and still cannot be regarded as satisfactory. After many years of remediating legacy issues, the bank's ability to grow profitably again on the revenue side is being closely monitored and is considered a decisive lever to boost the share price from its current unsatisfactory level.

As your Supervisory Board, we are making every effort to support this in an appropriate way. On the following pages VII to XV you will find a detailed report of our activities during the reporting period. I would like to take this opportunity to draw your attention to several personnel changes. On the Management Board, Mr. Kuhnke took over responsibility as Chief Operating Officer after his predecessor, Ms. Hammonds, left the bank at the end of May.

Although reaching the appointed cost targets reflects the efforts of many staff members, this is also due not least to a rigorously consistent management style.

Following the successful Initial Public Offering of our Asset Management company DWS at the beginning of the year, Mr. Moreau, who was responsible for this area, left the Management Board of Deutsche Bank AG at the end of December 2018. His successor as Chief Executive Officer of DWS, Dr. Wöhrmann, was appointed General Manager (Generalbevollmächtigter) of the bank at the end of October.

There were also changes on your bank's Supervisory Board in 2018. Ms. Dublon, Ms. Irrgang, Ms. Parent, Professor Kagermann, Mr. Rudschäfski and Dr. Teyssen stepped down, having provided years of valuable service through their Supervisory Board work. Their contributions, in particular on the committees, were extensively praised already at the last General Meeting.

The General Meeting in May 2018 elected Ms. Clark, Ms. Trogni, Mr. Thain and Professor Winkeljohann as new members of the Supervisory Board. There were also changes on the employee representatives' side. Newly elected as employee representatives to the Supervisory Board were Mr. Blomeyer-Bartenstein, Mr. Polaschek and Mr. Szukalski. For Mr. Szukalski, it is the second time. Mr. Bsirske, Mr. Duscheck, Mr. Heider, Ms. Klee, Ms. Mark, Ms. Platscher and Mr. Rose were re-elected for another term in office. I gained Mr. Polaschek as the new Deputy Chairman. We are certain we can ensure our cooperation founded on trust in the interests of the bank will continue, even in these challenging times.

Against this backdrop, the Supervisory Board established, alongside the existing committees, a Strategy Committee and a Technology, Data and Innovation Committee to focus on tasks that are described in greater detail in the following. The two committees are chaired by Mr. Thain and Ms. Trogni, respectively. Ms. Clark took over as Chairperson of the Risk Committee. In light of the increase in his other professional obligations, Mr. Meddings – after three years of valuable service with a high-intensity workload – handed over the chairing of the Audit Committee to Professor Winkeljohann. I would like to take this opportunity to thank all of them for their personal dedication to our bank.

Esteemed shareholders, my colleagues and I are naturally well aware that in the final analysis only performance counts, and it is not yet where it should be – at least not when it comes to the share price. However, we live in a world in which process quality and process integrity also have an important role to play. On their own, they are not enough to be successful, but they are the preconditions for sustainable success. With this in mind, your Supervisory Board held a total of 54 meetings in plenum and in the committees to perform our monitoring duties and to advise the Management Board intensively in numerous matters.

Specifically, in the year under review:

Report of the Supervisory Board

The Supervisory Board performed the tasks assigned to it by law, administrative regulations, Articles of Association and Terms of Reference.

The Management Board reported to us regularly, without delay and comprehensively on business policies and strategy, in addition to other fundamental issues relating to the company's management and culture, corporate planning, coordination and control, compliance and compensation systems. It reported to us on the financial development, earnings and risk situation, the bank's risk, liquidity and capital management, the appropriate technical and organizational resources as well as events that were of significant importance to the bank. We were involved in decisions of fundamental importance. As in previous years, the Management Board provided, as we requested, enhanced reporting on specific topic areas. The Supervisory Board Chairman maintained regular contact with the Management Board between the meetings, as did the committee chairs for the committees they chair. Regular discussions concerning important topics and upcoming decisions were also held between the Chairman of the Supervisory Board, the chairs of the Supervisory Board committees and the Management Board.

There were a total of 54 meetings of the Supervisory Board and its committees. When necessary, resolutions were passed by circulation procedure between the meetings.

Meetings of the Supervisory Board in plenum

The Supervisory Board held nine meetings in plenum in 2018, where it addressed all topics with a special relevance for the bank.

We again attached a special importance to the topic of strategy in 2018, and its implementation, and took sufficient time to deliberate on strategic matters with the Management Board at all of our meetings. At our meetings in February, May, July, October and December, we addressed the development of the bank's business, influenced by a dynamic regulatory and competitive environment, along with the related core priorities. In this context, the Management Board reported to us regularly on the bank's strategy and the preparations for the United Kingdom's pending exit from the European Union (Brexit), the Initial Public Offering (IPO) of DWS and the merger between Deutsche Bank Privat- und Geschäftskunden AG and Deutsche Postbank AG. It informed us on a regular basis of the performance of the share prices of Deutsche Bank AG, DWS and their respective competitors. At our meetings in February, July and October, the Management Board reported to us on the developments in the litigation cases and regulatory proceedings of significant importance to the bank. We also extensively discussed the continually growing importance of digitalization and its impact on bank-internal processes. To address these topics more intensively, we resolved at our meeting on May 23, 2018, to additionally establish a Strategy Committee as well as a Technology, Data and Innovation Committee, and thus to monitor all of the key priorities of the Management Board more efficiently and to more strongly focus and intensify the discussion of and advice on such matters in the interests of the bank.

At our meeting on February 1, we addressed the target/actual analysis against the plan figures for 2017 as well as the Management Board's preliminary proposal for the dividend in consideration of the regulatory requirements for capital funding. The Management Board reported to us on the progress made on the planned strategic measures to rebuild a simpler, client-focused Corporate & Investment Bank. We addressed the strategic financial and capital plan at the Group level for the years 2018-2022 as well as the strategic targets. Following a comprehensive discussion with the Management Board, we issued our approval in principle to the IPO of DWS. We addressed the supervisory priorities of various regulators for 2018, the effects of new administrative law requirements on the bank and the measures to be taken in this context. We completed the assessment to be performed annually of the Supervisory Board and Management Board for the year 2017 and addressed the Corporate Governance Statement, which was also the Corporate Governance Report. We accepted the Management Board's proposal to waive its variable compensation for the 2017 financial year. We also discussed the topics for the Supervisory Board's training measures for 2018.

At our meeting on March 15, after the Management Board's reporting and a discussion with the auditor, and based on the Audit Committee's recommendation, we approved the Consolidated Financial Statements and Annual Financial Statements for 2017 and agreed to the Management Board's proposal for the appropriation of distributable profit. Together with representatives of the Joint Supervisory Team (JST) of the European Central Bank, Federal Financial Supervisory Authority

(BaFin) and Deutsche Bundesbank, we discussed the most important insights gained from the Supervisory Review and Evaluation Process (SREP) in 2017 and the regulatory priorities based on this perspective for 2018. Topics we discussed with the Management Board were the introduction of balanced scorecards in the bank, the structuring of the compensation systems, the Human Resources Report for 2017, the timetable for the DWS IPO and other regulatory topics. We also addressed topics for the General Meeting and approved the proposals for its Agenda, including proposals for the election of new shareholder representatives on the Supervisory Board.

At an extraordinary meeting on April 8, we resolved to appoint Mr. Sewing as Chairman of the Management Board with immediate effect, as successor to Mr. Cryan, who left the Management Board. At this meeting, we also appointed Mr. Ritchie and Mr. von Rohr as Presidents (Deputy Chairmen of the Management Board).

At our meeting on May 23, in the evening before the General Meeting, we discussed all of the significant topics of the pending General Meeting with the Management Board.

At our constitutive meeting on May 24, following the General Meeting, we re-elected Dr. Achleitner as Chairman of the Supervisory Board and Mr. Polaschek as new Deputy Chairman. As a result of the changed composition of the Supervisory Board after the General Meeting, we adjusted the composition of all the committees and appointed some new committee members, also in consideration of the expertise and experience of the individual Supervisory Board members. Ms. Clark was elected with immediate effect as Chairperson of the Risk Committee, as the successor of Ms. Dublon, who left the Supervisory Board as of July 31, 2018. Mr. Thain was elected Chairman of the newly established Strategy Committee and Ms. Trogni as Chairperson of the newly established Technology, Data and Innovation Committee, based on their comprehensive expertise in the respective areas. We also resolved on issuing the mandate for the audit of the annual financial statements and consolidated financial statements for 2018 to KPMG AG Wirtschaftsprüfungsgesellschaft, Berlin (KPMG).

On July 26, we addressed in particular the development of the bank's business and the Interim Report as of June 30, 2018. The Management Board reported to us on regulatory topics, compliance, anti-money laundering, liquidity and cost management as well as the results of the annual employee survey. We also addressed the implementation of bank-regulatory requirements for our work.

On September 14 and 15, a two-day strategy workshop took place with the Management Board. We intensively addressed the strategic targets and priorities, also based on the bank's individual business divisions, as well as the progress made in their implementation. Together with the Chairman of the Management Board and the Chief Human Resources Officer, we discussed succession planning for the Management Board and for the management level below the Management Board.

On October 25, we resolved, after receiving an explanation of the recommendation of the Audit Committee, to propose to the General Meeting in 2019 that Ernst & Young GmbH Wirtschaftsprüfungsgesellschaft (Ernst & Young) be elected for the limited review of the consolidated interim financial statements for the first quarter of 2020. We plan to propose that Ernst & Young be elected as auditor of the annual and consolidated financial statements for the full 2020 financial year. We also addressed know-your-customer topics. We appointed the incumbent Chief Operating Officer, Mr. Kuhnke, as member of the Management Board with effect from January 1, 2019. His areas of functional responsibility on the Management Board correspond to his prior tasks – he is responsible, among other things, for the bank's information security, data management and digital strategy. We agreed to Mr. Moreau's departure from the Management Board with effect from December 31, 2018, and we assigned his area of Management Board functional responsibility for Asset Management to Mr. Sewing. Furthermore, we resolved to approve the Declaration of Conformity for 2018 pursuant to Section 161 of the Stock Corporation Act.

At the last meeting of the year on December 6, we discussed together with the Management Board an update on the bank's know-your customer program as well as the budgets for the Compliance and Anti-Money Laundering functions in 2018. The discussion also focused on the topics relating to the correspondent bank relationship with Danske Bank and measures of the investigative authorities in connection with the business activities of Regula Limited. The Management Board reported to us on the progress made in working through regulatory priorities and discussed with us the significant milestones of the planning process 2019-2023. We elected Professor Dr. Winkeljohann as the new Chairman of the Audit Committee with effect from January 1, 2019.

Committees of the Supervisory Board

The Chairman's Committee held nine meetings in 2018. It regularly handled the preparations for our meetings and took care of ongoing matters between the meetings. The Chairman's Committee supported the Supervisory Board in monitoring the preparations for the IPO of DWS. The Chairman's Committee issued the approval of current and former Management Board members' acceptance of mandates, honorary offices or special tasks outside of Deutsche Bank Group. The Committee also took note of the mandates of the Supervisory Board members. The Chairman's Committee prepared the decisions of the Supervisory Board in the field of corporate governance and handled matters relating to the not yet legally final court decisions on legal actions for the rescission, annulment or declaration of resolutions of the General Meetings in 2016 and 2017 as well as a shareholder's court application for the replacement of the auditor elected by the General Meeting for the audit of the annual and consolidated financial statements for the 2018 financial year.

At its six meetings, the Risk Committee dealt with the current and future overall risk appetite and strategy of Deutsche Bank, in particular with regard to credit, liquidity, refinancing, country, market and operational risks. The Risk Committee addressed the financial and non-financial risks of the bank, their identification and their management as well as the measures to reduce them. In particular, the Risk Committee focused on personnel and model risks as well as the risks relating to Brexit and the bank's internal preparations for it. In addition, the Risk Committee received reports regularly from the Management Board about the appropriateness of risk, capital and liquidity as well as corresponding changes in risk-weighted assets. The Risk Committee also regularly received reports from the Risk Management function concerning key issues and initiatives, the budget for the Risk Management function, strategic stress scenarios, recovery and resolution plans ("living wills") and risks in the banking book. Furthermore, the Risk Committee dealt with findings and recommendations from regulators on risk-related topics.

The Risk Committee monitored whether conditions in the client business are in line with the bank's business model and risk structure. It made decisions on the bank's credit exposures requiring approval under German law, the Articles of Association and Terms of Reference.

Furthermore, the Risk Committee supported the Compensation Control Committee in assessing the effects of the compensation systems on the bank's risk, capital and liquidity situation. It also examined whether the compensation systems are aligned to the bank's business strategy focused on the institution's sustainable development. In this context, the Risk Committee monitored whether the derived risk strategies and compensation strategy are also aligned to this at the institution and Group level. In November, the Risk Committee members attended the meeting of the Compensation Control Committee as guests and contributed to the in-depth discussion of topics concerning variable compensation for the 2018 financial year.

The Audit Committee met seven times in 2018. The Audit Committee supported us in monitoring the financial reporting process and intensively addressed the Annual Financial Statements and Consolidated Financial Statements, the interim reports as well as the Annual Report on Form 20 F for the U.S. Securities and Exchange Commission. Within the context of the financial reporting process, it supported us in monitoring the implementation of the new International Financial Reporting Standard 9 as well as the recognition of provisions. The Audit Committee also dealt with the valuation of various financial instruments and the bank's pension obligations as well as tax-related topics, in particular against the backdrop of the U.S. tax reform. The Audit Committee had the Management Board report regularly on the "available distributable items" and the capacity to service the coupons on the Additional Tier 1 capital instruments.

The Audit Committee monitored the effectiveness of the risk management system, in particular with regard to the internal control system and Group Audit, while also taking into account the possible impacts from the ongoing cost containment program. This also covered, among other things, the reporting on the ongoing development of controls to combat money laundering and to prevent financial crime, transaction surveillance, the three lines of defense model and the key initiatives for the further strengthening of the internal control system. The Audit Committee was kept up-to-date on the work of Group Audit, its audit plan and its resources. It addressed measures taken by the Management Board to remediate deficiencies identified by the auditor, Group Audit and regulatory authorities. It also regularly received updates on the status and progress in this context and in the remediation of findings.

We issued the mandate to KPMG as the independent auditor and, with the support of the Audit Committee, set the amount of the auditor's remuneration. KPMG also reviewed the legally required non-financial reporting. The Audit Committee dealt with the measures to prepare for the audit of the Annual Financial Statements and Consolidated Financial Statements for 2018, specified its own areas of focus for the audit and approved a list of permissible non-audit services. The Audit Committee was regularly provided with reports on the engagement of accounting firms, including the auditor, for non-audit-related services. The Committee also addressed the key audit matters presented in the auditor's report, the separate Non-Financial Report of the Group as well as the Non-Financial Statement.

The Head of Group Audit attended all of the Audit Committee meetings. Representatives of the auditor also attended all of these meetings, however, with the exception of the specific agenda items dealing with the rotation of the auditor.

Auditor Rotation: To implement the requirements of Regulation (EU) No. 537/2014 concerning the mandatory rotation of the auditor, a public tender request procedure was performed in 2018 to select a new auditor for Deutsche Bank AG and Deutsche Bank Group for the 2020 financial year. To ensure an efficient and effective selection procedure, a project organization was established that acted under the supervision and decision-making authority of the Audit Committee.

The performance of the audit tender procedure was supported within the bank's operations by a Steering Committee and Project Team. The Steering Committee comprised, in addition to the Audit Committee Chair, three other members of the Audit Committee, the Chief Financial Officer, the Head of Group Audit as well as senior executives of the relevant business divisions involved. The specification of the key process steps, the selection criteria and the key decisions were discussed in advance with the Audit Committee Chair and the Steering Committee and were ultimately approved by the Audit Committee. At its meetings, the Audit Committee regularly received reports on the audit tender procedure as it progressed and deliberated and decided on the further key steps. In accordance with the EU require¬ments for a public tendering, the entire process was conducted in a fair and transparent manner and free of discrimination. Through the public announcement of the audit tender process, including in the Federal Gazette (Bundesanzeiger), auditing firms were first invited to express their interest in participating in the selection process. In the next step, those expressing an interest were provided with extensive documents to make the submission of a well-founded written offer possible. In addition, all competitors were given the opportunity to clarify any outstanding matters in a questions and answers phase. The two offers subsequently submitted were analyzed by the Project Team and the Steering Committee. The two final candidates were each invited separately to present their offers and introduce the lead members of their teams to the Steering Committee and the Audit Committee. The key financial points of each of the offers were discussed with both candidates. Following the conclusion of the procedure and on the basis of a detailed report on the procedure as well as the assessment of the candidates, the Audit Committee issued its recommendation for the two candidates at its meeting on October 23, 2018, to the Supervisory Board. Within the framework of this recommendation, there was a preference for Ernst & Young GmbH Wirtschaftsprüfungsgesellschaft.

The Nomination Committee met six times. It addressed, in particular, issues related to succession and appointments while taking into account statutory and regulatory requirements, and it nominated suitable specific candidates for the Management Board and Supervisory Board. The Nomination Committee supported us in implementing the requirements, applicable as of June 30, 2018, of the European Banking Authority (EBA) Guidelines on Internal Governance and Guidelines on the Assessment of the Suitability of Members of the Management Body and Key Function Holders, while also taking into consideration the European Central Bank (ECB) Guidelines on the Assessment of Professional Qualifications and Personal Reliability (Guide to Fit and Proper Assessments).

It also supported us in the implementation of potential improvements identified through the assessment carried out in 2017 and intensively prepared the assessment of the Supervisory Board and Management Board for 2018. Furthermore, the Nomination Committee issued recommendations to the Management Board concerning the principles for selecting and appointing people to the senior management level.

The Compensation Control Committee met five times in 2018. It monitored the appropriate structuring of the compensation systems for the Management Board and employees, along with the compensation for the heads of control functions and material risk takers. It also dealt with the Compensation Report 2017 and the Compensation Officer's Compensation Control Report, which concluded the bank's compensation system is appropriately structured and in accordance with the requirements of the Remuneration Ordinance for Institutions (InstitutsVergV). The Compensation Control Committee concurred with this assessment.

It submitted proposals regarding the compensation of the Management Board while taking the agreed targets and objectives into consideration. The Compensation Control Committee supported us in monitoring the involvement of the internal control areas as well as all other material areas in the structuring of the compensation systems and assessed the effects of the compensation systems on the risk, capital and liquidity situation. The Management Board reported to us on the procedures for determining and allocating the total amount of variable compensation for the bank's employees, while taking into account, in particular, affordability.

At its meetings in February, July and October, the Compensation Control Committee received reports on the Management Board's communications with the regulatory authorities on compensation topics and changes in the regulatory framework relating to compensation. It addressed the implementation of the Remuneration Ordinance for Institutions (InstitutsVergV) of July 25, 2017, and the individual components of variable compensation for the 2018 financial year as well as the plan rules. The Compensation Control Committee also handled anticipated changes to the compensation system of DWS following its IPO as well as the compensation topics in connection with the merger of Deutsche Bank Privat- und Geschäftskunden AG and Deutsche Postbank AG.

The Integrity Committee met six times in 2018. The Committee addressed the alignment of the culture in the individual business divisions to the holistic corporate culture, also in consideration of the merger between Deutsche Bank Privat- und Geschäftskunden AG and Deutsche Postbank AG. The Integrity Committee reviewed and discussed the updated Code of Conduct with the Management Board, along with the initiatives for its sustainable embedding in the organization. In this context, the Committee also addressed the management of conduct risk and consequences management. Furthermore, the Committee held discussions with the Management Board on the implementation status of the standard, bank-wide "lessons learned" process, which manages the sustainable embedding of lessons from the past in the organization and as a result mitigates the risk from flawed processes and/or misconduct.

The Management Board reported regularly at the meetings on the legal cases with the highest risks for the bank and other material litigation cases and proceedings.

At its meetings in October and December, the Integrity Committee addressed Deutsche Bank's correspondent bank relationships, in particular with Danske Bank's Estonia branch. In December, the Management Board reported on the investigative authorities' search of the bank's premises in connection with the business activities of Regula Limited, a former subsidiary of the bank. The Integrity Committee devotes special attention to following up on these topics.

The Management Board reported on the measures and progress achieved in optimizing the internal policy framework and other governance topics. Environmental and social issues were also addressed at the Integrity Committee meetings. Among other things, this involved the bank's corporate social responsibility and contribution to the conservation of our environment.

The new Strategy Committee met three times. The subject of the first meeting, initially, was to clarify the delineation of its tasks and responsibilities with the Supervisory Board plenum and the cooperation with the other Supervisory Board committees. The Strategy Committee had the Management Board Chairman report at all its meetings on the implementation status of the key strategic measures and the achievement of the bank's short-term and long-term financial objectives. It held discussions with the Management Board on implementation progress both at the Group level and in the corporate divisions, on current and future business opportunities and challenges against the backdrop of the competitive environment, and it received reports on the bank's significant transformation projects with strategic relevance. Within the framework of deep dives into the bank's business divisions, the Committee intensively discussed the positioning of the global Wealth Management business and its strategic priorities. Furthermore, the Committee set out the areas of focus in preparing for the Supervisory Board's two-day strategy workshop in September.

The new Technology, Data and Innovation Committee met three times. The Committee addressed both the IT architecture and IT strategy, also from the perspective of individual areas of the bank. At the meetings, the Management Board reported on the bank's global data management strategy – the target objectives, the status of their implementation and the interaction with internal stakeholders. During its meetings, the Committee addressed the focal points of the work of the Innovation Lab in Berlin and the Digital Factory in Frankfurt as well as the innovation initiatives in investment banking. In this context, it also deliberated with the Management Board on the budget planning for key IT projects for the 2019 financial year. Moreover, it dealt with the bank-wide application landscape, the monitoring of important IT metrics, topics of IT and cyber security, and the mitigation and management of IT risks.

Meetings of the Mediation Committee, established pursuant to the provisions of Germany's Co-Determination Act (MitbestG), were not necessary.

Participation in meetings

The Supervisory Board members participated in the meetings of the Supervisory Board and of the committees in which they were members as follows:

	Meetings (incl. committees)	Meetings (plenary sessions)	Participation (plenary sessions)	Meetings (committees)	Participation (committees)	Participation in % (all meetings)
Achleitner	54	9	9	45	45	100
Blomeyer-Bartenstein	11	5	5	6	6	100
Böhr	7	4	4	3	3	100
Bsirske	32	9	9	23	23	100
Clark	11	5	5	6	6	100
Dublon	9	6	6	3	3	100
Duscheck	15	9	9	6	4	87
Eschelbeck	12	9	9	3	3	100
Garrett-Cox	18	9	8	9	7	83
Heider	18	9	9	9	9	100
Irrgang	7	4	4	3	3	100
Kagermann	14	4	4	10	8	86
Klee	15	9	9	6	6	100
Mark	19	9	9	10	10	100
Meddings	25	9	9	16	15	96
Parent	7	4	3	3	1	57
Platscher	19	9	9	10	10	100
Polaschek	22	5	5	17	17	100
Rose	19	9	9	10	10	100
Rudschäfski	14	4	4	10	10	100
Schütz	13	9	9	4	4	100
Simon	32	9	9	23	23	100
Szukalski	8	5	5	3	3	100
Teyssen	9	4	3	5	3	67
Thain	8	5	5	3	3	100
Trogni	11	5	5	6	6	100
Winkeljohann	4	3	3	1	1	100

Corporate Governance

The composition of the Supervisory Board and its committees is in accordance with the requirements of the German Banking Act (KWG) as well as regulatory governance standards. The suitability of each individual member was assessed both internally by the Nomination Committee and externally by the European Central Bank, and determined and monitored continuously by the Joint Supervisory Team (JST). The suitability assessment covers the expertise, reliability and time available of each individual member. In addition, there was an assessment of the knowledge, skills and experience of the Supervisory Board in its entirety that are necessary for the performance of its tasks.

The Chairman of the Supervisory Board and the chairpersons of all the committees are independent in accordance with the Terms of Reference applicable from time to time. They coordinated their work continuously and consulted each other regularly and – as required – on an ad hoc basis between the meetings in order to ensure the exchange of information necessary to capture and assess all relevant case matters and risks in the performance of their tasks. The cooperation in the committees was marked by an open and trustful atmosphere.

The committee chairpersons reported regularly at the meetings of the Supervisory Board on the work of the individual committees. Regularly before the meetings of the Supervisory Board, the representatives of the employees and the representatives of the shareholders conducted preliminary discussions separately. At the beginning or end of the Supervisory Board and committee meetings, discussions were regularly held in “executive sessions” without the participation of the Management Board.

Based on recommendations from the respectively responsible committees, we determined that Ms. Garrett-Cox, Dr. Achleitner, Mr. Meddings, Professor Dr. Simon and Professor Dr. Winkeljohann were financial experts in accordance with the definition of the implementation rules of the U.S. Securities and Exchange Commission issued pursuant to Section 407 of the Sarbanes-Oxley Act of 2002 as well as Section 100 (5) and Section 107 (4) of Germany’s Stock Corporation Act (AktG), and Section 25d (9) of the German Banking Act (KWG). Dr. Achleitner and Professor Dr. Simon were specified by name as compensation experts in accordance with Section 25d (12) of the German Banking Act (KWG). Furthermore, we confirmed the independence, as defined by U.S. regulations, of all members of the Audit Committee and determined that the Supervisory Board has what we consider to be an adequate number of independent members.

Dr. Achleitner and the chairpersons of the committees met regularly with representatives of the key regulators and informed them about the work of the Supervisory Board and its committees and about the cooperation with the Management Board.

In preparation for the General Meeting 2018, Dr. Achleitner, in his capacity as Chairman of the Supervisory Board, conducted discussions together with our Investor Relations Department with representatives of investors with regard to governance and strategy topics as well as Management Board compensation.

At several meetings of the Nomination Committee and of the Supervisory Board in plenum, we addressed the assessment prescribed by law of the Management Board and the Supervisory Board for the 2018 financial year. The final discussion of the results took place on January 31, 2019, and the results were set out in a final report. We implemented the potential improvements that were identified in the 2017 financial year. We are of the opinion that the Supervisory Board and Management Board achieved a high standard and that there are no reservations, in particular, regarding the professional qualifications, personal reliability and time available of the members of the Management Board and of the Supervisory Board. Improvement measures discussed with the Management Board and Supervisory Board members to increase the efficiency of the work of the Supervisory Board and its eight standing committees are implemented promptly.

The Declaration of Conformity pursuant to Section 161 of the Stock Corporation Act (AktG), which we last issued with the Management Board on October 27, 2017, was reissued at the meeting of the Supervisory Board on October 25, 2018. The text of the Declaration of Conformity, along with a comprehensive presentation of the bank's corporate governance, can be found beginning on page 411 of the Annual Report 2018 and on the bank's website at https://www.db.com/ir/en/documents.htm. Our Declarations of Conformity since 2007 are also available there, in addition to the currently applicable versions of the Terms of Reference for the Supervisory Board and its committees as well as for the Management Board.

Training and Further Education Measures

Members of the Supervisory Board completed the training and further education measures required for their tasks on their own. Furthermore, numerous further education measures were conducted for the work of the Supervisory Board in plenum and committees to maintain and expand the required specialized knowledge. The topics comprised, among others, accounting, performance measurement using balanced scorecards, human resources trends and staff development, digitalization, the products and services of an investment bank, corporate governance as well as internal communications and investor relations.

For the new members that joined the Supervisory Board, extensive induction courses tailored to the individuals were held to facilitate their induction into office.

Conflicts of Interest and Their Handling

Professor Dr. Winkeljohann did not take part in the deliberations on and the resolutions for the selection of an auditor.

Annual Financial Statements, Consolidated Financial Statements, the separate Consolidated Non-Financial Report and Non-Financial Statement

KPMG audited the Annual Financial Statements, including the accounting and Management Report, as well as the Consolidated Financial Statements with the related Management Report for the 2018 financial year and issued in each case an unqualified audit opinion on March 15, 2019. The Auditor's Reports were signed jointly by the Auditors Mr. Pukropski and Mr. Böth. Mr. Pukropski signed the Auditor's Report for the Annual Financial Statements and Consolidated Financial Statements for the first time for the 2013 financial year and Mr. Böth for the first time for the 2017 financial year.

Furthermore, KPMG performed a limited assurance review in the context of the separate Non-Financial Report as well as the Non-Financial Statement (Non-Financial Reporting) and in each case issued an unqualified opinion.

The Audit Committee examined the documents for the Annual Financial Statements 2018 and Consolidated Financial Statements 2018 as well as the Non-Financial Reporting 2018 at its meeting on March 19, 2019. The representatives of KPMG provided the final report on the audit results. The Chairman of the Audit Committee reported to us on this at the meeting of the Supervisory Board. Based on the recommendation and advance handling of the Audit Committee and after inspecting the Annual Financial Statements and Consolidated Financial Statements documents as well as the documents for the Non-Financial Reporting, we agreed to the results of the audits following an extensive discussion on the Supervisory Board as well as with the representatives of the auditor. We determined that, also based on the final results of our inspections, there are no objections to be raised.

We approved the Annual Financial Statements and Consolidated Financial Statements prepared by the Management Board on March 21, 2019. The Annual Financial Statements are thus established. We agree to the Management Board's proposal for the appropriation of distributable profit.

Personnel issues

With the conclusion of the General Meeting on May 24, 2018, Ms. Parent, Professor Dr. Kagermann and Dr. Teyssen left the Supervisory Board. The General Meeting elected Ms. Clark, Ms. Trogni and Mr. Thain as new members until the conclusion of the General Meeting that resolves on the ratification of the acts of management for the 2022 financial year.

Furthermore, the General Meeting elected Ms. Dublon as member of the Supervisory Board until July 31, 2018, and Professor Dr. Winkeljohann as member with effect from August 1, 2018, until the conclusion of the General Meeting that resolves on the ratification of the acts of management for the 2022 financial year.

With the conclusion of the General Meeting on May 24, 2018, the term of office of the employee representatives on the Supervisory Board came to an end. Mr. Bsirske, Mr. Duscheck, Mr. Heider, Ms. Klee, Ms. Mark, Ms. Platscher and Mr. Rose were re-elected to the Supervisory Board. Newly elected as employee representatives to the Supervisory Board were Mr. Blomeyer-Bartenstein, Mr. Polaschek and Mr. Szukalski. For Mr. Szukalski it is the second time.

Mr. Cryan left the Management Board on April 8, 2018. Dr. Schenck and Ms. Hammonds each left the Management Board on May 24, 2018. Mr. Moreau left the Management Board with effect from December 31, 2018.

With immediate effect on April 8, 2018, we appointed Mr. Sewing as Chairman of the Management Board and Mr. Ritchie and Mr. von Rohr as Presidents (Deputy Chairmen of the Management Board).

Furthermore, we extended Mr. Ritchie's appointment for five years (see "Corporate Governance Statement / Management Board" starting on page 393 of the Annual Report) and appointed Mr. Kuhnke as member of the Management Board with effect from January 1, 2019. In January 2019, we resolved to extend Mr. Steinmüller's appointment for one year, until July 31, 2020.

We thank the members who left last year for their dedicated work and their constructive assistance to the company during the past years.

We would also like to thank the bank's employees for their great personal dedication.

Frankfurt am Main, March 21, 2019

The Supervisory Board

Dr. Paul Achleitner
Chairman

Supervisory Board

Dr. Paul Achleitner
– Chairman
Munich
Germany

Detlef Polaschek*
since May 24, 2018
– Deputy Chairman
Essen
Germany

Stefan Rudschäfski*
until May 24, 2018
– Deputy Chairman
Kaltenkirchen
Germany

Ludwig Blomeyer-Bartenstein*
since May 24, 2018
Bremen
Germany

Wolfgang Böhr*
until May 24, 2018
Dusseldorf
Germany

Frank Bsirske*
Berlin
Germany

Mayree Carroll Clark
since May 24, 2018
New York
USA

Dina Dublon
until July 31, 2018
New York
USA

Jan Duscheck*
Berlin
Germany

Dr. Gerhard Eschelbeck
Cupertino
USA

Katherine Garrett-Cox
Brechin, Angus
United Kingdom

Timo Heider*
Emmerthal
Germany

Sabine Irrgang*
until May 24, 2018
Mannheim
Germany

Prof. Dr. Henning Kagermann
until May 24, 2018
Königs Wusterhausen
Germany

Martina Klee*
Frankfurt am Main
Germany

Henriette Mark*
Munich
Germany

Richard Meddings
Cranbrook
United Kingdom

Louise M. Parent
until May 24, 2018
New York
USA

Gabriele Platscher*
Braunschweig
Germany

Bernd Rose*
Menden
Germany

Gerd Alexander Schütz
Vienna
Austria

Prof. Dr. Stefan Simon
Zurich
Switzerland

Stephan Szukalski*
since May 24, 2018
Ober-Mörlen
Germany

Dr. Johannes Teyssen
until May 24, 2018
Dusseldorf
Germany

John Alexander Thain
since May 24, 2018
Rye
USA

Michele Trogni
since May 24, 2018
Riverside
USA

Prof. Dr. Norbert Winkeljohann
since August 1, 2018
Osnabrück
Germany

* Employee representatives

Committees

Chairman's Committee

Dr. Paul Achleitner
– Chairman

Frank Bsirske*

Prof. Dr. Henning Kagermann
(until May 24, 2018)

Detlef Polaschek*
(since May 24, 2018)

Stefan Rudschäfski*
(until May 24, 2018)

Prof. Dr. Stefan Simon
(since May 24, 2018)

Nomination Committee

Dr. Paul Achleitner
– Chairman

Frank Bsirske*

Prof. Dr. Henning Kagermann
(until May 2018)

Detlef Polaschek*
(since May 24, 2018)

Stefan Rudschäfski*
(until May 24, 2018)

Gerd Alexander Schütz
(since May 24, 2018)

Prof. Dr. Stefan Simon
(since May 24, 2018)

Dr. Johannes Teyssen
(until May 24, 2018)

Audit Committee

Prof. Dr. Norbert Winkeljohann
– Chairman
(since January 1, 2019
Member since November 1, 2018)

Richard Meddings
– Chairman
(until December 31, 2018)

Dr. Paul Achleitner

Katherine Garrett-Cox
(until October 31, 2018 and
January 1, 2019)

Henriette Mark*

Gabriele Platscher*

Detlef Polaschek*
(since May 24, 2018)

Bernd Rose*

Prof. Dr. Stefan Simon

Compensation Control Committee

Dr. Paul Achleitner
– Chairman

Frank Bsirske*

Prof. Dr. Henning Kagermann
(until May 24, 2018)

Detlef Polaschek*
(since May 24, 2018)

Stefan Rudschäfski*
(until May 24, 2018)

Prof. Dr. Stefan Simon
(since May 24, 2018)

Strategy Committee (since May 24, 2018)

John Alexander Thain
– Chairman

Dr. Paul Achleitner

Frank Bsirske*

Mayree Carroll Clark

Timo Heider*

Henriette Mark*

Richard Meddings

Detlef Polaschek*

Technology, Data and Innovation Committee (since May 24, 2018)

Michele Trogni
– Chairperson

Dr. Paul Achleitner

Jan Duscheck*

Dr. Gerhard Eschelbeck

Martina Klee*

Bernd Rose*

* Employee representatives

Integrity Committee

Prof. Dr. Stefan Simon
– Chairman

Dr. Paul Achleitner

Ludwig Blomeyer-Bartenstein*
(since May 24, 2018)

Katherine Garrett-Cox
(since May 24, 2018)

Sabine Irrgang*
(until May 24, 2018)

Timo Heider*

Martina Klee*
(until May 24, 2018)

Louise M. Parent
(until May 24, 2018)

Gabriele Platscher*
(since May 24, 2018)

Dr. Johannes Teyssen
(until May 24, 2018)

Risk Committee

Mayree Carroll Clark
– Chairperson
(since May 24, 2018)

Dina Dublon
– Chairperson
(until May 24, 2018)

Dr. Paul Achleitner

Ludwig Blomeyer-Bartenstein*
(since May 24, 2018)

Wolfgang Böhr*
(until May 24, 2018)

Jan Duscheck*
(since May 24, 2018)

Richard Meddings
(until December 31, 2018)

Louise M. Parent
(until May 24, 2018)

Stephan Szukalski*
(since May 24, 2018)

Michele Trogni
(since May 24, 2018)

Prof. Dr. Norbert Winkeljohann
(since January 1, 2019)

Mediation Committee

Dr. Paul Achleitner
– Chairman

Frank Bsirske*
(since May 24, 2018)

Wolfgang Böhr*
(until May 24, 2018)

Prof. Dr. Henning Kagermann
(until May 24, 2018)

Detlef Polaschek*
(since May 24, 2018)

Stefan Rudschäfski*
(until May 24, 2018)

Prof. Dr. Stefan Simon
(since May 24, 2018)

* Employee representatives

Strategy

We are a leading European bank with global reach supported by a strong home base in Germany, Europe's largest economy. We provide services in commercial and investment banking, retail banking as well as wealth and asset management products to corporations, governments, institutional investors, small and medium-sized businesses, and private individuals.

In the second quarter of 2018, we announced changes to our strategy and updates to our financial targets. Management is focused on materially improving returns to shareholders over time and on deploying our balance sheet and other resources to the highest return activities consistent with our client franchise and risk appetite. To achieve these primary objectives we have defined four key strategic imperatives: First, shift the bank to a more stable revenue and earnings profile. Second, execute on clearly defined strategies in our Private & Commercial Bank (PCB) and our Asset Management (AM) businesses. Third, reshape our Corporate & Investment Bank (CIB) towards a model which emphasizes our core strength in transaction banking, capital markets, financing and treasury solutions. And fourth, reduce our costs and commit to an uncompromising cost culture.

As the basis of our strategy, we seek to continue building on our 2018 achievements: we intend to retain our cost discipline and plan to continue to reduce expenditures. However, we also aim to begin a new phase – one of controlled growth. We aim to grow in all our business divisions, at the same time not relinquishing our cost discipline or compromising our integrity.

Achieving a more stable revenue and earnings profile

We aim to increase the share of revenues coming from stable sources characterized by lower earnings volatility and to expand our more stable businesses – Private & Commercial Bank, our Asset Management division DWS and Global Transaction Banking. The more stable business mix is intended to lower our funding costs, support our credit rating and make our performance more resilient even in very challenging environments or markets.

Growth in our Private & Commercial Bank and DWS

Our Private & Commercial Bank comprises the three business units Private and Commercial Business (Germany), Private and Commercial Business (International) and Wealth Management (Global).

Our Private and Commercial Business (Germany) serves more than 20 million private and commercial clients and pursues a differentiated, customer-focused approach with two main distinct and strong brands: Deutsche Bank and Postbank. The strong positioning of the two brands, the broad customer base and the use of complementary strengths build the basis for significant cost and revenue synergies of € 900 million annually which we aim to fully realize in 2022 and beyond. A new operating model with a joint infrastructure and product platform as well as a joint management will help to pursue towards the achievements of these targets.

In our Private and Commercial Business (International), we continue to sharpen focus and invest into our core markets. While streamlining our geographic footprint with the completed partial exit from Poland and the ongoing disposal of our business in Portugal, we are investing into our Italian, Spanish, Belgian and Indian operations as we view them as attractive and growing markets.

In Wealth Management (Global) we seek to grow our market share, both in Germany and internationally.

We are also proceeding with our investments in digital solutions for banking and non-banking products through further equity investments into strategic partners and enhancements of our digital platform.

For DWS, with the IPO now completed, we are focusing on growing assets under management, improving efficiency and profitability and driving strong DWS shareholder return, including a robust dividend.

Reshaping Corporate & Investment Bank

We intend to remain a leading European Corporate & Investment Bank with global reach. As part of the restructuring announced and completed in 2018, CIB will focus on its core product strengths and key markets.

We announced three strategic updates for CIB. First, we optimized our Origination and Advisory business: we will maintain a strong presence but we are focusing on sectors and segments that are most relevant for our most important clients or in which we have a strong global position. Second, we pivoted to our strengths in Fixed Income & Currencies (FIC) focused around our core strengths while reducing exposure to US Rates. Third, in Equities, we refocused our resources around our existing profitable customer relationships.

Going forward, we will focus our resources on our key strengths in transaction banking, capital markets, financing and treasury solutions. Additionally, we intend to significantly reduce our cost to serve via workforce reductions and through modernization of platform.

Rigorous cost management

Given the progress made in reducing adjusted costs in 2018, management is now committed to reduce adjusted costs by a further € 1 billion to € 21.8 billion in 2019, thereby lowering the target we set ourselves in 2018 by € 200 million. Costs in 2019 should benefit from the full run rate of previously enacted measures as well as from our planned additional headcount reductions, the synergies from our German retail merger and completion of the sale of our Portuguese retail operations. We also aim to benefit from management's ongoing effort to reduce non-compensation costs, including further rationalizing vendor spending and our real estate footprint. At the same time, we will continue to invest in our technology and controls.

Our Financial Targets

Near-term operating targets

- Post-tax Return on Average Tangible Equity of greater than 4 % in 2019
- Adjusted costs of € 21.8 billion in 2019
- Full-time equivalent internal employees of below 90,000 by year-end 2019

Long-term operating target

- Post-tax Return on Average Tangible Equity of circa 10 % in a normalized environment and on the basis of the achievement of our cost targets

As we execute on our near- and long-term operating targets, we intend to continue managing our balance sheet conservatively, with the following capital targets:

Capital targets

- CRR/CRD 4 Common Equity Tier 1 capital ratio above 13 %
- CRR/CRD 4 Leverage Ratio (phase-in) of 4.5 % over time
- A competitive dividend payout ratio

Progress on strategy implementation

In 2018, we delivered on our adjusted cost and headcount targets. Our adjusted costs of € 22.8 billion, were below our € 23 billion target. On a full-time equivalent (FTE) basis, we reduced the number of internal employees to 91,737 at year end 2018, compared to our target of below 93,000. Our Common Equity Tier 1 ratio at 13.6 % is above our target, and our leverage ratio on a phased-in basis improved to 4.3 % compared to 4.5 %, our target over time.

During 2018 our Corporate & Investment Bank (CIB) announced headcount and resource reductions as part of the division's strategic reshaping. These actions were successfully delivered across the second and third quarter of 2018. Measures included: reprioritizing our presence in Origination & Advisory in sectors where we have strong market position; decreasing leverage exposure within Equities, mainly in Prime Finance, and US Rates including repo financing; and reducing our Equities headcount by approximately 25 %. We continued to implement further measures to reduce our cost base, while the risk weighted assets and leverage exposure of assets identified as not consistent with CIB's strategy continue to roll off as planned. Through achievement of greater revenue and resource productivity as well as cost efficiency we aim to improve CIB's profitability going forward.

In 2019, CIB is focused on delivering controlled revenue growth from targeted resource deployment and investment. This will be supported by a more focused client coverage and product offering, leading to an improved ability to direct resources to the highest return relationships, ultimately increasing share of clients' "wallet" (amounts clients spend on banking products). CIB continues to reinvigorate its client-led franchise through more effective coverage, as evidenced by the creation of an integrated Institutional and Treasury Coverage Group in 2018. The aim of this group is to achieve synergies from closer alignment and shared expertise. Further expense management initiatives in 2019 are focused on middle and back office functions.

We continue to see a clear opportunity for CIB to occupy an attractive position as one of the handful of globally relevant European participants in the Global CIB market.

For Private & Commercial Bank, following the successful merger of Deutsche Bank Privat- und Geschäftskunden AG and Deutsche Postbank AG in the second quarter of 2018, we took further actions in the fourth quarter of 2018 to achieve our future organizational structure. We further optimized the Private and Commercial Business (Germany) sales organization and also enhanced our sales infrastructure as well as branch formats. To streamline our head office, we announced a dedicated leadership team for our product governance and management and defined the head office target operating model. Additionally, we strengthened our digital platform by the launch of our digital brand "Yunar" and we were among the first banks in Germany to offer Apple Pay to our clients.

In our Private and Commercial Business (International), we continued to execute the bank's strategy to sharpen its focus and reduce complexity. The announced disposal of the majority of our retail business in Poland was successfully closed in the course of the fourth quarter of 2018, while the sale of the local retail business in Portugal is progressing on track and the parties intend to close the transaction in the second quarter of 2019, subject to regulatory approvals and other conditions. In Italy and Spain, we have further refined our business models to improve client coverage and efficiency, supported by an optimized sales network and streamlined organization, and we are continuing to focus on improving the returns of our businesses in India and Belgium.

In Wealth Management (Global), we made further progress towards our strategic agenda focusing on improving the efficiency and robustness of our platform while putting emphasis on growth, notably in core ultra-high-net-worth (UHNW) markets, through targeted front-office hiring. Over the course of 2018, WM further invested in strengthening its control framework. At the same time, various projects were undertaken aimed to enhance the client experience through improved digital offerings, quicker onboarding, as well as approaching clients with a more nuanced client service model. A significant milestone in the simplification of our management structure was the launch of a new regional structure in the fourth quarter of 2018 moving from four to three regions (Americas, Europe, Emerging Markets). And we successfully completed the integration of Sal. Oppenheim's Wealth Management business into Deutsche Bank Group in the second quarter of 2018.

In Asset Management, following the successful IPO of DWS in the first quarter of 2018, the business has begun to operate as a more autonomous company and to build the foundation for long-term growth. AM is executing on growth initiatives, including strategic hires into the client coverage teams, in part to bolster institutional growth, as well as to support the Passive business. AM also successfully added new distributors to the proprietary digital investment platform, and became the first asset manager to introduce its digital investment platform to the unit-linked insurance market.

DWS and BNP Paribas Securities Services jointly decided not to proceed with the transfer of our fund administration services in Germany and Luxembourg to BNP Paribas Securities Services and the provision of depositary and custody services to our retail funds, as announced in June 2018.

Asset Management has seen continued progress with our Environment, Social and Governance (ESG) strategy, illustrated by the recent expansion of our product suite across the Active, Passive and Alternatives investment spaces.

An efficiency and transformation program has been established with dedicated initiatives to challenge and reduce expenditures as well as to enhance efficiency and productivity by simplifying our operating model.

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Operating and Financial Review

The following discussion and analysis should be read in conjunction with the consolidated financial statements and the related notes to them. Our Operating and Financial Review includes qualitative and quantitative disclosures on Segmental Results of Operations and Entity Wide disclosures on Net Revenue Components as required by International Financial Reporting Standard (IFRS) 8, "Operating Segments". This information, which forms part of and is incorporated by reference into the financial statements of this report, is marked by a bracket in the margins throughout this Operating and Financial Review. For additional Business Segment disclosure under IFRS 8 please refer to Note 4 "Business Segments and Related Information" of the Consolidated Financial Statements. Forward-looking statements are disclosed in our Outlook section.

Executive Summary

The Global Economy

Economic growth (in %)[1]	2018[2]	2017	Main driver
Global Economy	**3.8**	3.8	Robust global growth, with industrialized countries saw a peak in their economic cycle, while growth in emerging markets slowed towards the end of the year. Trade tensions reached a level that weighed on global trade. The strong US economy provided impetus to global growth.
Of which:			
Industrialized countries	2.2	2.3	The global momentum supported growth in industrialized countries but trade disputes began to have a negative impact on the global value chains of the industrialized countries.
Emerging markets	4.9	4.8	Emerging markets benefited from the extension of the global economic cycle. Growth peaked in Asia whereas some Latin American economies stabilized.
Eurozone Economy	**1.8**	2.5	The eurozone economy expanded more slowly than expected, reflecting temporary effects in some member states and a deteriorating external environment. Growth was supported by domestic demand underpinned by a solid income growth and improved financial conditions.
Of which: German economy	1.4	2.2	The German economy surprised to the downside. Delays in the certification of new vehicles hampered automobile production and thus impacted the overall economic value chain. A tight labor market led to strong wage agreements.
US Economy	**2.9**	2.2	Strong performance of the US economy was supported by tax cuts, fiscal spending as well as supportive financial conditions and consumer spending backed by wage growth and a tight labor market.
Japanese Economy	**0.7**	1.9	The Japanese economy slowed due to lower private consumption spending and lower employment growth as well as weaker external demand.
Asian Economy[3]	**6.2**	6.1	Asian economies continued to show strong growth, but may have passed their cyclical peak. Trade was a key driver of economic expansion.
Of which: Chinese Economy	6.6	6.9	Chinese growth slowed somewhat. The government has kept a tight policy stance in the property sector. Lower land sales impacted sliding fiscal revenues. Chinese exports were resilient despite growing trade tensions throughout 2018.

[1] Annual Real GDP Growth (% YoY). Sources: National Authorities unless stated otherwise.
[2] Sources: Deutsche Bank Research.
[3] Including China, India, Indonesia, Republic of Korea, and Taiwan, ex Japan.

The Banking Industry

In the Eurozone, 2018 saw banks record their first noteworthy growth in corporate lending since the financial crisis, with volumes up 2 % year on year. By contrast, the dynamics in real estate lending to households and in consumer lending were stable at 3 %. Interest rates remained close to historical lows and weighed on the banks' net interest margin. Growth in corporate deposits slowed quite significantly to 3 % year on year while growth in retail deposits increased to over 4.5 %. European banks likely saw revenues and overhead expenses decline slightly, with a significant drop in risk provisions (from an already low level).

In Germany, lending to corporates and the self-employed continued to gain considerable pace last year, an increase of 5.5 % year on year. The figure was the highest since the dot-com bubble in the early 2000s and coincided with a sharp decline in corporate bond issuance. Retail lending also continued to expand at 3.5 %, driven by a 5 % increase in mortgage volumes. On the funding side, household deposits grew roughly at 5 % while corporate deposits expanded at a considerably slower pace of 2.5 %. Despite excellent asset quality, there is no change expected in the structurally low profitability of Germany's banks, a situation mainly caused by the intense competition and low interest rate environment.

The US banking industry is almost certain to have set a new profit record. The first nine months saw the banks already generate higher net profit than in any prior full-year period. This was due to a wide range of factors including healthy credit business, the benefit of higher interest rates on net interest margin and on liquid funds, tax cuts, and market share gained in the global capital markets business. Lending to households increased by 2.2 % year on year a decline from its 2017 rate reflecting slower growth in mortgage lending to 3 % and a 9 % decline in home equity loans, while growth in consumer loans was stable at 5 %. In contrast, the growth rate in lending to businesses doubled to 7.5 % over the course of the year, driven by double-digit growth in corporate lending, where outstanding volumes have doubled since 2010. Commercial real estate lending grew at a somewhat lower rate than in the previous year at 5 %. Private sector deposits continued to expand by 4 %.

In China, the credit growth further slowed in 2018. Lending to businesses grew by just 8 % year on year, while the figure for retail customers was 18 %. Private sector deposits grew at a 7 % rate, stable versus the prior period. In Japan, too, growth rates remained largely stable overall at 2.5 % for lending and 3.5 % for deposits.

Investment banking recorded a solid result in the M&A advisory business in 2018, while transaction volumes in equity and debt issuance saw year-on-year declines. Securities trading posted largely positive growth. Equities trading in the United States and the derivatives business delivered an excellent performance and there was also robust growth in bonds. The only contraction was in European equities trading.

Deutsche Bank Performance

In 2018, Deutsche Bank achieved its first full year net profit since 2014 and delivered on its adjusted cost and headcount targets. The bank also announced and executed against a series of strategic repositioning measures, mainly within the Corporate & Investment Bank, and made good progress while further strengthening its controls and processes. In 2018, the bank successfully completed the legal merger of Deutsche Bank Privat- und Geschäftskunden AG and Postbank, the partial sale of the retail business in Poland, the integration of Sal. Oppenheim and the Initial Public Offering ("IPO") of DWS Group GmbH & Co. KGaA ("DWS"). The bank is focused on redeploying resources and investing in areas of core strength which the management believes will drive growth.

Group Key Performance Indicators

Near-term operating performance	Status end of 2018	Status end of 2017
Post-tax return on average tangible shareholders' equity [1]	0.5 %	(1.4) %
Adjusted costs[2]	€ 22.8 bn	€ 23.9 bn
Employees[3]	91,737	97,535
Capital performance		
CRR/CRD 4 fully loaded Common Equity Tier 1 ratio[4]	13.6 %	14.0 %
CRR/CRD 4 leverage ratio (phase-in)[4]	4.3 %	4.1 %

[1] Based on Net Income attributable to Deutsche Bank shareholders and additional equity components. For further information, please refer to "Supplementary Information: Non-GAAP Financial Measures" of this report.
[2] Adjusted costs are noninterest expenses excluding impairment of goodwill and other intangible assets, litigation and restructuring and severance. For further information, please refer to "Supplementary Information: Non-GAAP Financial Measures" of this report.
[3] Internal full-time equivalents.
[4] Further detail on the calculation of this ratio is provided in the Risk Report.

Net revenues in 2018 were € 25.3 billion, a decline of € 1.1 billion, or 4 % from 2017. Revenues in the Corporate & Investment Bank (CIB) were impacted by the strategic repositioning, specifically the reduction in headcount and leverage exposure, challenging market conditions, lower client activity, which was in part driven by adverse developments with respect to the bank, negative interest rates and margin compression. Revenues in Private & Commercial Bank (PCB) were essentially flat as growth in revenues from loans was offset by ongoing interest rate headwinds on deposit products. Revenues in Asset Management (AM) were impacted by net outflows, margin compression, lower performance fees and the absence of specific revenue items recorded in 2017. Revenues in Corporate and Other (C&O) improved mainly driven by the absence of the realization of a negative currency translation adjustment related to the sale of a non-strategic subsidiary in Argentina in 2017 and higher positive impacts from valuation and timing differences in 2018 compared to prior year.

Provision for credit losses was € 525 million in 2018, unchanged compared to 2017.

Noninterest expenses in 2018 were € 23.5 billion, a decrease of € 1.2 billion or 5 %, from 2017 as management executed on its cost reduction targets. The decrease was driven by reductions across most of the cost categories including lower compensation and benefits expense, reduced cost for professional service fees and for occupancy, as well as lower litigation and restructuring charges.

Income before income taxes was € 1.3 billion in 2018 compared to € 1.2 billion in 2017, an increase of € 103 million or 8 % mainly driven by lower noninterest expenses partly offset by lower revenues.

Income tax expense was € 989 million in 2018, compared to € 2.0 billion in 2017 which included a one-time tax charge of € 1.4 billion attributable to the remeasurement of US deferred tax assets as a result of the US tax reform. The effective tax rate of 74 % in 2018 was mainly impacted by changes in the recognition and measurement of deferred tax assets and share-based payment-related tax effects.

The bank reported a net income of € 341 million in 2018, compared to a net loss of € 735 million in 2017. The improvement was primarily driven by the absence of the prior year's one-time tax charge and lower noninterest expenses.

The bank's CRR/CRD 4 fully loaded Common Equity Tier 1 (CET 1) ratio was 13.6 % at the end of 2018 compared to 14.0 % at the end of 2017, primarily driven by an increase in Risk weighted assets.

Deutsche Bank Group

Deutsche Bank: Our Organization

Headquartered in Frankfurt am Main, Germany, we are the largest bank in Germany and one of the largest financial institutions in Europe and the world, as measured by total assets of € 1,348 billion as of December 31, 2018. As of that date, we employed 91,737 full-time equivalent internal employees and operated in 59 countries out of 2,064 branches worldwide, of which 68 % were in Germany. We offer a wide variety of investment, financial and related products and services to private individuals, corporate entities and institutional clients around the world.

As of December 31, 2018, we were organized into the following three corporate divisions:

- Corporate & Investment Bank (CIB)
- Private & Commercial Bank (PCB)
- Asset Management (AM)

The three corporate divisions are supported by infrastructure functions. In addition, Deutsche Bank has a local and regional organizational layer to facilitate a consistent implementation of global strategies.

We have operations or dealings with existing or potential customers in most countries in the world. These operations and dealings include working through:

- subsidiaries and branches in many countries;
- representative offices in many other countries; and
- one or more representatives assigned to serve customers in a large number of additional countries.

We have made the following significant capital expenditures or divestitures since January 1, 2016, that are not allocated to the capital expenditures or divestitures of corporate divisions described below:

In August 2016, Deutsche Bank Group entered into an agreement to sell Deutsche Bank S.A., its subsidiary in Argentina, to Banco Comafi S.A. The transaction is part of the Group's plan to rationalize its global footprint. In June 2017, the transaction was successfully completed.

On October 26, 2016, Deutsche Bank entered into an agreement to sell its Mexican bank and broker dealer subsidiaries to Investa Bank S.A., Institución de Banca Múltiple. Investa Bank S.A. has since been renamed to Accendo Banco. Closing of the transaction was originally expected in the first half of 2018, but remains subject to regulatory approvals and other customary conditions. During the fourth quarter of 2018, Deutsche Bank notified Accendo Banco that the Group is exercising its right to terminate the purchase agreement.

Capital expenditures or divestitures related to the divisions are included in the respective Corporate Division Overview.

Management Structure

The Management Board has structured the Group as a matrix organization, comprising (i) Corporate Divisions, (ii) Infrastructure Functions and (iii) Regions.

Pursuant to the German Stock Corporation Act, the Management Board is responsible for the executive management of Deutsche Bank. Its members are appointed and removed by the Supervisory Board, which is a separate corporate body. Our Management Board focuses on, among other topics, strategic management, corporate governance, financial accounting and reporting, resource allocation, control and risk management, and is assisted by functional committees.

Within each corporate division and region, coordination and management functions are handled by operating committees and executive committees, which help ensure that the implementation of the strategy of individual business divisions and the plans for the development of infrastructure areas are aligned to our global business objectives.

Corporate & Investment Bank (CIB)

Corporate Division Overview

CIB comprises our Global Transaction Banking, Origination & Advisory, Sales & Trading (FIC) and Sales & Trading (Equity) businesses. The division brings together wholesale banking expertise across, coverage, risk management, sales and trading, Investment Banking and infrastructure across Deutsche Bank. This enables CIB to align resourcing and capital across our client and product perimeter to effectively serve the Bank's clients.

In CIB, we made the following significant capital divestiture since January 1, 2016 and no significant capital expenditures:

In early October 2017, Deutsche Bank Group signed a binding agreement to sell its Alternative Fund Services business, a unit of the Global Transaction Banking division, to Apex Group Limited. The transaction supported the Group's announced strategic priorities and was completed in the second quarter of 2018.

Products and Services

Global Transaction Banking (GTB) is a global provider of cash management, trade finance and securities services, delivering the full range of commercial banking products and services for both corporate clients and financial institutions worldwide.

Origination and Advisory is responsible for mergers and acquisitions (M&A) as well as debt and equity advisory and origination. Regional and industry-focused coverage teams ensure the delivery of the entire range of financial products and services to our corporate and institutional clients.

Sales & Trading (FIC) and Sales & Trading (Equity) combine sales, trading and structuring of a wide range of financial market products, including bonds, equities and equity-linked products, exchange-traded and over-the-counter derivatives, foreign exchange, money market instruments, and structured products, while Research provides analysis of markets, products and trading strategies for clients.

All our trading activities are covered by our risk management procedures and controls which are described in detail in the Risk Report.

Distribution Channels and Marketing

As part of our strategy, we are re-focusing and optimizing our client coverage model to the benefit of our core clients. We are exiting client relationships where we consider returns to be too low or risks to be too high while also strengthening our client on-boarding and know-your-client (KYC) procedures.

Coverage of our clients is provided by the Institutional and Treasury Coverage group, which combines our Equity and Debt sales teams, Financial Solutions Group and Corporate Banking Coverage. This new consolidated group is intended to benefit the division through closer cooperation and enhanced synergies leading to increased cross selling of products/solutions to our clients, while working closely with the Investment Banking Coverage team within Corporate Finance.

Private & Commercial Bank (PCB)

Corporate Division Overview

In PCB, we serve personal and private clients, small and medium-sized enterprises as well as wealthy private clients. We are organized along three core business divisions: Private and Commercial Business (Germany), Private and Commercial Business (International) and Wealth Management (Global). Our product range includes payment and account services, credit and deposit products as well as investment advice and selected digital offerings. In these products, we offer our customers both the coverage of all basic financial needs and individual, tailor-made solutions.

PCB made the following significant capital expenditures or divestitures since January 1, 2016:

In March 2018, Deutsche Bank Group entered into an agreement to sell the retail banking business in Portugal to ABANCA Corporación Bancaria S.A. The parties are aiming to close the transaction in the first half of 2019, subject to regulatory approvals and the finalization of separation measures.

In December 2017, Deutsche Bank Group entered into an agreement for the partial sale of its retail banking business in Poland to Santander Bank Polska (formerly Bank Zachodni WBK). The transaction was completed in November 2018.

In March 2017, Deutsche Bank Group signed a definitive agreement to sell its share in Concardis GmbH, a leading German payment service provider established in form of a joint venture of the German banking sector, to a consortium of Advent International and Bain Capital Private Equity. In July 2017, the transaction was successfully completed.

On December 28, 2015, we agreed to sell our entire 19.99 % stake in Hua Xia Bank Company Limited to PICC Property and Casualty Company Limited. The share transfer was completed in the fourth quarter 2016 and all remaining closing formalities were completed in the first quarter of 2017.

In the fourth quarter 2015, we announced that we had entered into a definitive asset purchase agreement to sell our U.S. Private Client Services (PCS) unit to Raymond James Financial, Inc. In September 2016 the transaction was completed successfully.

In November 2015, Visa Inc. announced a definitive agreement to acquire Visa Europe Limited. As part of this acquisition Visa Europe Limited requested all its shareholders, which included several Deutsche Bank Group entities, to return their shares against consideration. We returned our shares in Visa Europe Limited in January 2016 and received the cash and preferred shares consideration at closing on June 21, 2016 as well as an entitlement to a deferred cash payment including interest upon the third anniversary of the closing date.

Products and Services

In our Private and Commercial Business (Germany) division, we pursue a differentiated, customer-focused approach with two brands – “Deutsche Bank” and “Postbank”. With our “Deutsche Bank” brand we focus on providing our private customers with banking and financial products and services that include sophisticated and individual advisory solutions. For small and medium-sized corporate clients, we provide an integrated commercial banking coverage model in collaboration with the Corporate & Investment Bank. The focus of our “Postbank” brand remains on providing our retail and corporate customers with standard products and daily retail banking services. In cooperation with Deutsche Post DHL AG, we also offer postal and parcel services in the Postbank branches.

Our Private and Commercial Business (International) division provide banking and other financial services to private and commercial clients in Belgium, India, Italy and Spain with some variations in the product offering among countries that are driven by local market, regulatory and customer requirements.

The Wealth Management (Global) division serves wealthy, high-net-worth (HNW) and ultra-high-net-worth (UHNW) individuals and families. We support our clients in planning, managing and investing their wealth, financing their personal and business interests and servicing their institutional and corporate needs. We also provide institutional-like services for sophisticated clients and complement our offerings by closely collaborating with the Corporate & Investment Bank and Asset Management.

We also have consolidated activities, which are no longer part of our core businesses, into a separate unit (called “Exited Businesses”) and have established a Digital Ventures unit to holistically steer PCB’s digital agenda across businesses and brands, focusing on new platform-based digital business models, venture capital investments as well as end-to-end process digitalization and appropriate data architecture as a basis for structured data analysis and application of Artificial Intelligence.

Distribution Channels and Marketing

We pursue an omni-channel approach and our customers can flexibly choose between different possibilities to access our services and products (branches, advisory centers, mobile networks of independent consultants and online/mobile banking).

In our Private and Commercial Business (Germany) and Private and Commercial Business (International) we have similar distribution channels. Those include our branch network, supported by customer call centers and self-service terminals; advisory centers of Deutsche Bank brand in Germany, which connect our branch network with our digital offerings; online and mobile banking including our Digital Platform, through which we provide a transaction platform for banking, brokerage and self-services, combined with a multi-mobile offering for smartphones and tablets; and lastly, financial advisors, as an additional service channel in collaboration with self-employed financial advisors as well as sales and cooperation partners.

Wealth Management (Global) has a distinct client coverage. Relationship managers and senior advisor teams manage client relationships, advice and assist clients in accessing wealth management services and open-architecture products. Institutional Wealth Partners (IWP) provide institutional access with market views and trade ideas from our Global Markets platform, as well as non-recourse lending solutions. Deutsche Oppenheim Family Offices AG (DOAG) offers services that include discretionary portfolio management, strategic asset allocation, “Family Office Strategy” funds, consulting, third-party manager selection, reporting & controlling as well as real estate and private equity investments.

Asset Management (AM)

Corporate Division Overview

With over € 660 billion of assets under management as of December 31, 2018, AM is one of the world’s leading investment management organizations, bringing access to the world’s financial markets and delivering solutions to clients around the globe. AM aims to provide sustainable financial solutions for all its clients: individual investors and the institutions that serve them.

The corporate division “Deutsche Asset Management” was renamed “Asset Management” during the first quarter of 2018. In March 2018, Deutsche Bank completed the partial initial public offering (IPO) of DWS Group GmbH & Co. KGaA (“DWS”), the holding company for AM. Since March 23, 2018, shares of DWS are listed on the Frankfurt stock exchange. We retain an 80 % ownership interest in DWS and AM remains a core business for Deutsche Bank.

We have made the following significant capital divestitures since January 1, 2016:

In December 2016, Deutsche Bank completed the sale of the Abbey Life business (Abbey Life Assurance Company Limited, Abbey Life Trustee Services Limited and Abbey Life Trust Securities Limited) to a subsidiary of Phoenix Group Holdings.

Products and Services

AM’s investment capabilities span both active and passive strategies across a diverse array of asset classes and liquidity spectrum including equities, fixed income, liquidity, real estate, infrastructure, private equity and sustainable investments. We offer these capabilities through a variety of wrappers including Exchange Traded Funds, Mutual Funds, and Separately Managed Accounts. AM delivers alpha and beta solutions to address the longevity, liability and liquidity needs of clients, leveraging artificial intelligence and digital technology.

Distribution Channels and Marketing

Coverage/Advisory teams manage client relationships, provide advice and assist clients to access AM’s products and services. AM also markets and distributes its offerings through other business divisions of Deutsche Bank Group, notably PCB for retail customers, as well as through third-party distributors. To ensure effective service and advice, all clients have a single point of access to AM, with dedicated teams serving specific client groups.

Non-Core Operations Unit Corporate Division (NCOU)

In the second half of 2012, the Non-Core Operations Unit (NCOU) was established with the aim to help the Bank reduce risks associated with capital-intensive assets that are not core to the strategy, thereby reducing capital demand. As set out in our previous strategy announcements, our objectives in setting up the NCOU were to improve external transparency of our non-core positions; to increase management focus on the core operating businesses by separating the non-core activities; and to facilitate targeted accelerated de-risking.

NCOU successfully executed its de-risking target and reduced the portfolio to less than € 10 billion RWA by the year-end 2016. As a result, the NCOU ceased to exist as a standalone division from 2017 onwards.

The remaining legacy assets with balance sheet value of approximately € 6 billion as of December 31, 2016 were transferred to the corresponding core operating segments, predominately Corporate & Investment Bank and Private & Commercial Bank.

The NCOU division made the following significant divestitures since January 1, 2016:

In November 2016, Deutsche Bank sold its remaining 16.9 % stake in Red Rock Resorts after an IPO in April 2016 where Deutsche Bank sold around 3 %.

In April 2016, Deutsche Bank reached an agreement to sell 100 % of Maher Terminals USA LLC in Port Elizabeth, New Jersey to Macquarie Infrastructure Partners III, a fund managed by Macquarie Infrastructure and Real Assets. Following receipt of all regulatory approvals, we completed the sale in November 2016 for U.S.$ 739 million.

Infrastructure

The infrastructure functions perform control and service functions and, in particular, tasks relating to Group-wide, supra-divisional resource-planning, steering and control, as well as tasks relating to risk, liquidity and capital management.

The infrastructure functions are organized into the following areas of responsibility of our senior management:

- Chief Executive Officer: Communications & Corporate Social Responsibility, Group Audit, Art, Culture & Sports
- Chief Financial Officer: Group and Regional Finance, Chief Accounting Officer, Group Tax and Treasury, Planning & Performance Management, Business and Infrastructure Finance (CFOs), Infrastructure Transformation, Investor Relations, Corporate Investments, Corporate Merger and Acquisitions
- Chief Risk Officer: Business Aligned Risk Management, Regional Risk Management, Enterprise Risk Management and Model Risk, Credit Risk Management, Market Risk Management & Risk Methodology, Non-Financial Risk Management, Treasury & Liquidity Risk Management and Corporate Insurance
- Chief Regulatory Officer: Government and Regulatory Affairs, Anti Financial Crime, Compliance, Business Selection and Conflict Office
- Chief Administrative Officer: Legal and Group Governance incl. Data Privacy, Human Resources including Corporate Executive Matters
- Chief Operating Officer: Chief Information Office, Chief Security Office, Chief Data Office, Digital Strategy & Innovation, Corporate Services, Operations CIB and Client Data Services

For the financial years until 2017, all expenses and revenues incurred within the infrastructure functions and areas are fully allocated to Corporate & Investment Bank, Private & Commercial Bank and Deutsche Asset Management. From 2018 onwards, Infrastructure expenses associated with shareholder activities as defined in the OECD Transfer Pricing Guidelines are no longer allocated to corporate divisions, but are held centrally and reported under Corporate & Other.

To increase overall effectiveness and collaboration, the bank decided in 2017 to move certain infrastructure employees to the divisions for which they provide service. This has helped to increase the business divisions' responsibility and autonomy with respect to their organizational and process-related decisions and led to a significant increase of the number of employees associated with the business divisions compared to 2016 – in particular in the Corporate & Investment Bank as well as in Deutsche Asset Management. Independent Control Functions generally remained in central areas.

Significant Capital Expenditures and Divestitures

Information on each Corporate Division's significant capital expenditures and divestitures for the last three financial years has been included in the above descriptions of the Corporate Divisions.

Since January 1, 2018, there have been no public takeover offers by third parties with respect to our shares and we have not made any public takeover offers for our own account in respect of any other company's shares.

Results of Operations

Consolidated Results of Operations

On January 1, 2018, the Group adopted IFRS 9 “Financial Instruments”, which replaces IAS 39, “Financial Instruments: Recognition and Measurement”.

The adoption resulted in changes with regards to impairment as well as classification and measurement, leading to changes to the financial statements presentation. Changes to the financial statements presentation include the introduction of specific line items in the consolidated balance sheet and consolidated income statement, respectively, for Financial Assets at Fair Value through Other Comprehensive Income and the discontinuation of specific line items for Financial Assets Available for Sale and Securities Held to Maturity for financial years commencing January 1, 2018.

For further information regarding the adoption of IFRS 9, please refer to Note 2 “Recently Adopted and New Accounting Pronouncements” of this document.

You should read the following discussion and analysis in conjunction with the consolidated financial statements.

Condensed Consolidated Statement of Income

in € m.				2018 increase (decrease) from 2017		2017 increase (decrease) from 2016	
(unless stated otherwise)	2018	2017	2016	in € m.	in %	in € m.	in %
Net interest income	13,192	12,378	14,707	814	7	(2,329)	(16)
Provision for credit losses	525	525	1,383	(0)	(0)	(857)	(62)
Net interest income after provision for credit losses	**12,667**	11,853	13,324	815	7	(1,472)	(11)
Commissions and fee income[1]	10,039	11,002	11,744	(963)	(9)	(742)	(6)
Net gains (losses) on financial assets/liabilities at fair value through profit or loss[1]	1,332	2,926	1,401	(1,593)	(54)	1,524	109
Net gains (losses) on financial assets at amortized cost	2	N/A	N/A	2	N/M	0	N/M
Net gains (losses) on financial assets at fair value through other comprehensive income	317	N/A	N/A	317	N/M	0	N/M
Net gains (losses) on financial assets available for sale	N/A	479	653	(479)	N/M	(174)	(27)
Net income (loss) from equity method investments	219	137	455	82	60	(318)	(70)
Other income (loss)	215	(475)	1,053	689	N/M	(1,528)	N/M
Total noninterest income	**12,124**	14,070	15,307	(1,945)	(14)	(1,238)	(8)
Total net revenues[2]	**24,791**	25,922	28,632	(1,131)	(4)	(2,709)	(9)
Compensation and benefits	11,814	12,253	11,874	(439)	(4)	380	3
General and administrative expenses	11,286	11,973	15,454	(687)	(6)	(3,481)	(23)
Policyholder benefits and claims	0	0	374	(0)	N/M	(374)	(100)
Impairment of goodwill and other intangible assets	0	21	1,256	(21)	N/M	(1,235)	(98)
Restructuring activities	360	447	484	(86)	(19)	(37)	(8)
Total noninterest expenses	**23,461**	24,695	29,442	(1,234)	(5)	(4,747)	(16)
Income (loss) before income taxes	**1,330**	1,228	(810)	103	8	2,038	N/M
Income tax expense (benefit)	989	1,963	546	(974)	(50)	1,417	N/M
Net income (loss)	**341**	(735)	(1,356)	1,077	N/M	621	(46)
Net income attributable to noncontrolling interests	75	15	45	59	N/M	(30)	(66)
Net income (loss) attributable to Deutsche Bank shareholders and additional equity components	267	(751)	(1,402)	1,017	N/M	651	(46)

N/M – Not meaningful
[1] For further detail please refer to Note 1 “Significant Accounting Policies and Critical Accounting Estimates” of this report.
[2] After provision for credit losses.

Net Interest Income

in € m. (unless stated otherwise)	2018	2017	2016	2018 increase (decrease) from 2017 in € m.	2018 increase (decrease) from 2017 in %	2017 increase (decrease) from 2016 in € m.	2017 increase (decrease) from 2016 in %
Total interest and similar income	24,793	23,542	25,143	1,251	5	(1,601)	(6)
Total interest expenses	11,601	11,164	10,436	437	4	728	7
Net interest income	**13,192**	12,378	14,707	814	7	(2,329)	(16)
Average interest-earning assets[1]	990,670	1,021,697	1,033,172	(31,028)	(3)	(11,475)	(1)
Average interest-bearing liabilities[1]	745,904	790,488	812,578	(44,584)	(6)	(22,090)	(3)
Gross interest yield[2]	2.39 %	2.18 %	2.34 %	0.21 ppt	10	(0.16) ppt	(7)
Gross interest rate paid[3]	1.41 %	1.25 %	1.17 %	0.16 ppt	13	0.08 ppt	7
Net interest spread[4]	0.98 %	0.93 %	1.17 %	0.05 ppt	5	(0.24) ppt	(21)
Net interest margin[5]	1.33 %	1.21 %	1.42 %	0.12 ppt	10	(0.21) ppt	(15)

ppt – Percentage points
[1] Average balances for each year are calculated in general based upon month-end balances.
[2] Gross interest yield is the average interest rate earned on our average interest-earning assets.
[3] Gross interest rate paid is the average interest rate paid on our average interest-bearing liabilities.
[4] Net interest spread is the difference between the average interest rate earned on average interest-earning assets and the average interest rate paid on average interest-bearing liabilities.
[5] Net interest margin is net interest income expressed as a percentage of average interest-earning assets.

2018

Net interest income was € 13.2 billion in 2018 compared to € 12.4 billion in 2017, an increase of € 814 million, or 7 %. The increase in Net interest income was primarily driven by higher average rates, resulting in an improved net interest spread compared to 2017. Interest income increased primarily due to higher average rates on loans and deposits with banks, mainly in the US and Asia, while total interest expenses also increased, but to a lesser extent. Also contributing to the increase in Net interest income was a more pronounced reduction of average interest-bearing liabilities than average interest-earning assets. The decline in balance sheet volume occurred mostly in CIB reflecting the division's strategic repositioning. Interest income included € 93 million related to EU government grants under the Targeted Longer-Term Refinancing Operations II (TLTRO II) program, compared to € 116 million in 2017. Overall, the bank's net interest margin improved by 12 basis points compared to the prior year to 1.33 %, in 2018.

2017

Net interest income was € 12.4 billion in 2017 compared to € 14.7 billion in 2016, a decrease of € 2.3 billion, or 16 %. The decline in net interest income was mainly driven by perimeter changes including the sale of Abbey Life, PCS and the disposal of assets within the Non-Core Operations Unit (NCOU) in 2016, as well as higher funding costs and overall portfolio effects resulting in a shift towards lower interest yielding asset classes, mainly euro deposits with central banks. These effects were partially offset by interest income of € 116 million related to EU government grants under the TLTRO II program. Overall, our net interest margin declined by 21 basis points in 2017 as compared to the prior year.

Net Gains (Losses) on Financial Assets/Liabilities at Fair Value through Profit or Loss

in € m. (unless stated otherwise)	2018	2017	2016	2018 increase (decrease) from 2017 in € m.	2018 increase (decrease) from 2017 in %	2017 increase (decrease) from 2016 in € m.	2017 increase (decrease) from 2016 in %
Trading income	52	3,374	547	(3,322)	(98)	2,827	N/M
Net gains (losses) on non-trading financial assets mandatory at fair value through profit or loss	212	N/A	N/A	212	N/M	0	N/M
Net gains (losses) on financial assets/liabilities designated at fair value through profit or loss	1,069	(448)	854	1,517	N/M	(1,302)	N/M
Total net gains (losses) on financial assets/liabilities at fair value through profit or loss	1,332	2,926	1,401	(1,593)	(54)	1,524	109

2018

Net gains on financial assets/liabilities at fair value through profit or loss were € 1.3 billion in 2018, compared to € 2.9 billion in 2017. The decrease of € 1.6 billion, or 54 %, was primarily driven by mark-to-market losses due to higher US interest rates. These losses were partly offset by related positive effects in Net interest income. Net gains on financial assets/liabilities at fair value through profit or loss in 2018 were also impacted by lower deal volumes resulting from challenging market conditions and adverse developments.

2017

Net gains on financial assets/liabilities at fair value through profit or loss were € 2.9 billion in 2017 compared to € 1.4 billion in 2016, an increase of € 1.5 billion or 109 %. The increase was primarily driven by trading income, which improved by € 2.8 billion, mainly due to the non-recurrence of de-risking losses within the NCOU in 2016. Mark-to-market losses on issuances designated at fair value through profit or loss were the main contributor to a loss of € 448 million on financial assets/liabilities designated at fair value through profit or loss in 2017 compared to a gain of € 854 million in 2016. This loss was largely offset by mark-to-market gains in trading income related to financial instruments used as hedges for those issuances.

Net Interest Income and Net Gains (Losses) on Financial Assets/Liabilities at Fair Value through Profit or Loss

Our trading and risk management businesses include significant activities in interest rate instruments and related derivatives. Under IFRS, interest and similar income earned from trading instruments and financial instruments designated at fair value through profit or loss (i.e., coupon and dividend income) and the costs of funding net trading positions are part of net interest income. Our trading activities can periodically shift income between net interest income and net gains (losses) on financial assets/liabilities at fair value through profit or loss depending on a variety of factors, including risk management strategies.

In order to provide a more business-focused discussion, the following table presents net interest income and net gains (losses) on financial assets/liabilities at fair value through profit or loss by corporate division.

in € m.				2018 increase (decrease) from 2017		2017 increase (decrease) from 2016	
(unless stated otherwise)	2018	2017	2016	in € m.	in %	in € m.	in %
Net interest income	13,192	12,378	14,707	814	7	(2,329)	(16)
Total net gains (losses) on financial assets/liabilities at fair value through profit or loss	1,332	2,926	1,401	(1,593)	(54)	1,524	109
Total net interest income and net gains (losses) on financial assets/liabilities at fair value through profit or loss	**14,524**	15,304	16,108	(779)	(5)	(805)	(5)
Breakdown by Corporate Division:[1]							
Corporate & Investment Bank	7,905	8,651	10,774	(746)	(9)	(2,122)	(20)
Private & Commercial Bank	6,283	6,158	6,420	125	2	(262)	(4)
Asset Management	(89)	30	365	(119)	N/M	(335)	(92)
Non-Core Operations Unit	N/A	N/A	(1,307)	0	N/M	1,307	N/M
Corporate & Other	425	464	(144)	(39)	(8)	608	N/M
Total net interest income and net gains (losses) on financial assets/liabilities at fair value through profit or loss	**14,524**	15,304	16,108	(779)	(5)	(805)	(5)

N/M – Not meaningful
[1] This breakdown reflects net interest income and net gains (losses) on financial assets/liabilities at fair value through profit or loss only. For a discussion of the corporate divisions' total revenues by product please refer to Note 4 "Business Segments and Related Information".

2018

Total net interest income and net gains (losses) on financial assets/liabilities at fair value through profit or loss were € 14.5 billion in 2018, compared to € 15.3 billion in 2017, a decrease of € 779 million, or 5 %. The decrease was primarily driven by CIB mainly reflecting the strategic repositioning, muted client activity, geo-political uncertainty across a number of regions, and adverse developments. In addition, total net interest income and net gains (losses) on financial assets/liabilities at fair value through profit or loss in AM decreased versus the prior year mainly driven by a change in valuation of guaranteed funds which has a related offset in Other Income. The decreases were partly offset by an increase in PCB primarily due to growth in loan revenues, positive valuation effects from home savings liabilities, a positive year-on-year impact from mortgage loans previously measured at fair value and measured at amortized cost basis since the adoption of IFRS 9, partly offset by the negative impact from a low interest rate environment on deposits and lower income from interest rate risk hedges.

2017

Total net interest income and net gains (losses) on financial assets/liabilities at fair value through profit or loss were € 15.3 billion in 2017, compared to € 16.1 billion in 2016, a decrease of € 805 million, or 5 %. The decrease was primarily driven by CIB, mainly due to lower client volumes from a low volatility environment as well as margin pressure. The decline also included a loss of € 348 million in debt valuation adjustments (DVA) from the tightening of credit spreads and a decrease in derivative liability exposures. In addition, Total net interest income and net gains (losses) on financial assets/liabilities at fair value through profit or loss decreased also in AM, mainly due to nonrecurring revenues from Abbey Life which was sold at the end of 2016 and the absence of a write-up of our exposure to HETA; and in PCB, mainly impacted by the persistent low interest rate environment and loan book reductions. Partly offsetting these decreases was NCOU, which ceased to exist from 2017 onwards and reported negative € 1.3 billion of Total net interest income and net gains (losses) on financial assets/liabilities at fair value through profit or loss in 2016, including the aforementioned de-risking losses.

Provision for Credit Losses

2018

Provision for credit losses was € 525 million in 2018, unchanged as compared to 2017. Provisions in CIB decreased by € 94 million driven by de-risking activities in the shipping portfolio, offset by an increase of € 93 million in PCB, mainly driven by Postbank reflecting the non-recurrence of prior year's release of provisions related to a single credit exposure. The low level of provisions for credit losses reflects our strong underwriting standards, the low risk nature of our portfolios and the benign operating environment.

2017

Provision for credit losses was € 525 million in 2017, a decrease of € 857 million, or 62 %, compared to 2016, as a result of significantly lower charges and higher releases in all divisions. In CIB, the improvement reflected better performance of all portfolios including shipping. Despite the year-over-year reduction, shipping continued to be the main driver of provision for credit losses in 2017, in part related to the re-evaluation of the respective impairment method during the year. In PCB, provision for credit losses improved, reflecting the good portfolio quality and the continued benign environment along with a significant release in Postbank.

Remaining Noninterest Income

in € m.				2018 increase (decrease) from 2017		2017 increase (decrease) from 2016	
(unless stated otherwise)	2018	2017	2016	in € m.	in %	in € m.	in %
Commissions and fee income[1]	10,039	11,002	11,744	(963)	(9)	(742)	(6)
Net gains (losses) on financial assets at fair value through other comprehensive income	317	N/A	N/A	317	N/M	0	N/M
Net gains (losses) on financial assets at amortized cost	2	N/A	N/A	2	N/M	0	N/M
Net gains (losses) on financial assets available for sale	N/A	479	653	(479)	N/M	(174)	(27)
Net income (loss) from equity method investments	219	137	455	82	60	(318)	(70)
Other income (loss)	215	(475)	1,053	689	N/M	(1,528)	N/M
Total remaining noninterest income	10,792	11,144	13,906	(352)	(3)	(2,762)	(20)
[1] includes:							
Commissions and fees from fiduciary activities:							
Commissions for administration	303	338	401	(35)	(10)	(63)	(16)
Commissions for assets under management	3,130	3,603	3,507	(473)	(13)	96	3
Commissions for other securities business	290	379	380	(88)	(23)	(1)	(0)
Total	3,724	4,320	4,287	(596)	(14)	33	1
Commissions, broker's fees, mark-ups on securities underwriting and other securities activities:							
Underwriting and advisory fees	1,629	1,825	1,871	(196)	(11)	(46)	(2)
Brokerage fees	936	1,160	1,434	(224)	(19)	(274)	(19)
Total	2,565	2,985	3,305	(420)	(14)	(320)	(10)
Fees for other customer services	3,751	3,698	4,152	53	1	(454)	(11)
Total commissions and fee income	10,039	11,002	11,744	(963)	(9)	(742)	(6)

N/M – Not meaningful

Commissions and fee income

2018

Total Commissions and fee income was € 10.0 billion in 2018, a decrease of € 963 million, or 9 %, as compared to 2017. The decrease included € 473 million lower commissions for assets under management, primarily in AM due to lower fees from actively managed funds partly offset by higher fees from passively managed funds. Underwriting and advisory fees and brokerage fees declined by € 420 million primarily driven by lower market volumes and lower level of client activities in CIB as well as lower revenues from investment products in PCB following the implementation of MiFID II regulations.

2017

Total Commissions and fee income was € 11.0 billion in 2017, a decrease of € 742 million, or 6 %, compared to 2016. Underwriting and advisory fees and brokerage fees declined by € 320 million and fees from other customer services declined by € 454 million driven by reduced perimeter and lower volumes in Global Transaction Banking as well as reduced volumes in Sales & Trading (Equity). Fee income in PCB declined primarily reflecting the sale of the PCS business. Fund management fees increased by € 96 million primarily driven by favorable market conditions in AM.

Net gains (losses) on financial assets at fair value through other comprehensive income

2018

Total Net gains (losses) on financial assets at fair value through other comprehensive income was € 317 million in 2018 primarily related to a realized gain on sales of municipal bonds in the US, government bonds and securities from our Strategic Liquidity Reserve.

2017

Total Net gains (losses) on financial assets at fair value through other comprehensive income was introduced as new income category in 2018, following the adoption of IFRS 9.

Net gains (losses) on financial assets at amortized cost

2018

Net gains (losses) on financial assets at amortized cost were € 2 million in 2018, primarily reflecting the impact of an early redemption of certain bonds.

2017

Net gains (losses) on financial assets at amortized cost was introduced as new income category in 2018, following the adoption of IFRS 9.

Net gains (losses) on financial assets available for sale

2018

Net gains (losses) on financial assets available for sale ceased to exist in 2018, following the adoption of IFRS 9.

2017

Net gains on financial assets available for sale were € 479 million in 2017 compared to € 653 million in 2016, a decrease of € 174 million or 27 %. The decrease was primarily due to the nonrecurrence of gains related to de-risking activities in NCOU and a gain on sale of stake in Visa Europe Limited, both in 2016. This was partly offset by a gain on sale of shares in Concardis GmbH in 2017.

Net income (loss) from equity method investments

2018

Net gains from equity method investments were € 219 million in 2018 compared to € 137 million in 2017, an increase of € 82 million, or 60 %, primarily due to change in valuation of an investment.

2017

Net gains from equity investments were € 137 million in 2017 compared to € 455 million in 2016, a decrease of € 318 million, or 70 %, primarily due to the non-recurrence of a gain from the IPO of Red Rock Resorts in NCOU.

Other income (loss)

2018

Other income (loss) was € 215 million in 2018 compared to a loss of € 475 million in 2017. The increase was primarily driven by de-designation in fair value hedge accounting, gains from property sales in PCB, interest rate hedges and the termination of certain swaps. Additionally other income includes a positive impact from the valuation of guaranteed funds in AM, which has a related offset in net gains (losses) on financial assets/liabilities at fair value through profit or loss. Other income also benefitted from the absence of negative prior year effects related to the termination of a legacy trust preferred security and the realization of a currency translation adjustment associated with the sale of our non-strategic subsidiary in Argentina as well as a lower negative impacts from the sales transactions in Poland and Portugal compared to the prior year. These effects were partly offset by a lower income from workout activities related to legacy positions in Sal. Oppenheim in 2018.

2017

Other income (loss) was negative € 475 million in 2017 compared to positive € 1.1 billion in 2016. The decline was primarily driven by the absence of a positive realization in Other comprehensive income from the sale of stake in Hua Xia Bank Co. Limited. The decline also included a negative impact from the agreement to sell a significant portion of the retail business in Poland, a one-off loss due to termination of a legacy trust preferred security as well as the realization of a negative currency translation adjustment associated with the sale of our non-strategic subsidiary in Argentina.

Noninterest Expenses

in € m. (unless stated otherwise)	2018	2017	2016	2018 increase (decrease) from 2017 in € m.	2018 increase (decrease) from 2017 in %	2017 increase (decrease) from 2016 in € m.	2017 increase (decrease) from 2016 in %
Compensation and benefits	11,814	12,253	11,874	(439)	(4)	380	3
General and administrative expenses[1]	11,286	11,973	15,454	(687)	(6)	(3,481)	(23)
Policyholder benefits and claims	0	0	374	(0)	N/M	(374)	(100)
Impairment of goodwill and other intangible assets	0	21	1,256	(21)	N/M	(1,235)	(98)
Restructuring activities	360	447	484	(86)	(19)	(37)	(8)
Total noninterest expenses	23,461	24,695	29,442	(1,234)	(5)	(4,747)	(16)

N/M – Not meaningful

[1] includes:							
IT costs	3,822	3,816	3,872	6	0	(56)	(1)
Regulatory, tax & insurance[2,3]	1,545	1,489	1,421	57	4	67	5
Occupancy, furniture and equipment expenses	1,723	1,849	1,972	(126)	(7)	(123)	(6)
Professional service fees	1,530	1,750	2,305	(220)	(13)	(555)	(24)
Communication and data services	636	686	761	(50)	(7)	(75)	(10)
Travel and representation expenses	347	405	450	(58)	(14)	(45)	(10)
Banking and transaction charges	753	744	664	9	1	80	12
Marketing expenses	278	309	285	(30)	(10)	24	8
Consolidated investments	0	0	334	0	N/M	(334)	N/M
Other expenses[4]	652	925	3,390	(274)	(30)	(2,465)	(73)
Total general and administrative expenses	11,286	11,973	15,454	(687)	(6)	(3,481)	(23)

[2] Regulatory, tax & insurance which comprises bank levy and insurance and deposit protection has been presented separately in order to provide further transparency. In the Annual Report for the year ended December 31, 2017, these expenses were included within Other expenses.
[3] Includes bank levy of € 690 million in 2018, € 596 million in 2017 and € 547 million in 2016.
[4] Includes litigation related expenses of € 88 million in 2018, € 213 million in 2017 and € 2.4 billion in 2016.

Compensation and benefits

2018

Compensation and benefits decreased by € 439 million, or 4 %, to € 11.8 billion in 2018 compared to € 12.3 billion in 2017. The decrease was primarily driven by lower salary expenses reflecting headcount reductions and lower variable compensation.

2017

Compensation and benefits increased by € 380 million, or 3 %, to € 12.3 billion in 2017 compared to € 11.9 billion in 2016. The increase was primarily driven by higher variable compensation, reflecting the return to normal compensation programs in 2017. This increase was partly offset by a decrease in salaries, due to lower headcount and favorable foreign exchange movements, and by lower amortization of prior years' deferrals as well as by lower severance expense.

General and administrative expenses

2018

General and administrative expenses decreased by € 687 million, or 6 %, to € 11.3 billion in 2018 compared to € 12.0 billion in 2017. The decrease was across most expense categories primarily reflecting management actions to optimize spending.

2017

General and administrative expenses decreased by € 3.5 billion, or 23 %, to € 12.0 billion in 2017 compared to € 15.5 billion in 2016. The decrease was mainly due to a € 2.2 billion reduction in litigation charges compared to 2016. Professional service fees declined by € 555 million driven by lower legal fees and lower business consulting cost.

Impairment of goodwill and other intangible assets

2018

No impairment charges were reported for 2018.

2017

Impairment charges on goodwill and other intangible assets decreased to € 21 million in 2017 from € 1.3 billion in 2016. The 2016 charge reflected an impairment of € 1.0 billion in AM, triggered by the sale of Abbey Life and an impairment of € 285 million in CIB following the transfer of certain businesses from AM.

Restructuring

2018

Restructuring expenses amounted to € 360 million in 2018 compared to € 447 million in 2017. The decrease was mainly driven by lower charges in PCB partially offset by higher expenses in CIB reflecting the higher spend from strategic repositioning.

2017

Restructuring expenses amounted to € 447 million in 2017 compared to € 484 million in 2016. Restructuring charges for 2017 were primarily related to the planned merger of Deutsche Bank Privat- und Geschäftskunden AG and Postbank.

Income Tax Expense

2018

Income tax expense in 2018 was € 989 million compared to € 2.0 billion in 2017. The effective tax rate of 74 % (2017: 160 %) was mainly impacted by changes in the recognition and measurement of deferred tax assets and share based payment related tax effects.

2017

Income tax expense in 2017 was € 2.0 billion compared to € 546 million in 2016. The effective tax rate of 160 % (2016: negative 67 %) was mainly impacted by a one-time charge of € 1.4 billion resulting from the U.S. tax reform and other changes in the recognition and measurement of deferred tax assets.

Net income (loss)

2018

The net income of € 341 million in 2018, compared to a net loss of € 735 million in 2017, was primarily driven by the non-recurrence of the aforementioned one-time tax charge and lower noninterest expenses.

2017

The 2017 result was a net loss of € 735 million, driven by the aforementioned one-time tax charge attributable to the re-measurement of US deferred tax assets as a result of the U.S. tax reform, compared to a net loss of € 1.4 billion in 2016.

Segment Results of Operations

The following is a discussion of the results of our business segments. See Note 4 “Business Segments and Related Information” to the consolidated financial statements for information regarding:

- changes in the format of our segment disclosure and
- the framework of our management reporting systems.

The criterion for segmentation into divisions is our organizational structure as it existed at December 31, 2018. Prior period comparables were restated due to changes in the divisional structure. Segment results were prepared in accordance with our management reporting systems.

						2018
in € m. (unless stated otherwise)	Corporate & Investment Bank	Private & Commercial Bank	Asset Management	Non-Core Operations Unit	Corporate & Other	Total Consolidated
Net revenues[1]	13,046	10,158	2,186	–	(73)	25,316
Provision for credit losses	120	406	(1)	–	0	525
Noninterest expenses						
Compensation and benefits	3,970	4,001	787	–	3,055	11,814
General and administrative expenses	8,115	4,867	929	–	(2,624)	11,286
Policyholder benefits and claims	0	0	0	–	0	0
Impairment of goodwill and other intangible assets	0	0	0	–	0	0
Restructuring activities	287	55	19	–	0	360
Total noninterest expenses	12,372	8,923	1,735	–	431	23,461
Noncontrolling interests	24	(0)	85	–	(109)	0
Income (loss) before income taxes	530	829	367	–	(396)	1,330
Cost/income ratio	95 %	88 %	79 %	–	N/M	93 %
Assets[2]	988,531	343,704	10,030	–	5,872	1,348,137
Additions to non-current assets	514	516	43	–	575	1,647
Risk-weighted assets[3]	236,306	87,709	10,365	–	16,053	350,432
CRD 4 leverage exposure measure (spot value at reporting date)	892,653	354,584	5,044	–	20,644	1,272,926
Average shareholders' equity	43,427	14,514	4,669	–	0	62,610
Post-tax return on average tangible shareholders’ equity[4]	1 %	5 %	18 %	–	N/M	1 %
Post-tax return on average shareholders’ equity[4]	1 %	4 %	6 %	–	N/M	0 %
[1] includes:						
Net interest income	3,574	6,077	(52)	–	3,592	13,192
Net income (loss) from equity method investments	170	2	41	–	6	219
[2] includes:						
Equity method investments	556	78	240	–	5	879

N/M – Not meaningful

[3] Risk-weighted assets and capital ratios are based upon CRR/CRD 4 fully loaded.

[4] The post-tax return on average tangible shareholders’ equity and average shareholders’ equity at the Group level reflects the reported effective tax rate for the Group, which was 74 % for the year ended December 31, 2018. For the post-tax return on average tangible shareholders’ equity and average shareholders’ equity of the segments, the Group effective tax rate was adjusted to exclude the impact of permanent differences not attributed to the segments, so that the segment tax rates were 28 % for the year ended December 31, 2018.

in € m. (unless stated otherwise)	Corporate & Investment Bank	Private & Commercial Bank	Asset Management	Non-Core Operations Unit	Corporate & Other	Total Consolidated
						2017
Net revenues[1]	14,227	10,178	2,532	–	(489)	26,447
Provision for credit losses	213	313	(1)	–	(0)	525
Noninterest expenses						
Compensation and benefits	4,364	4,027	812	–	3,050	12,253
General and administrative expenses	8,441	5,012	978	–	(2,458)	11,973
Policyholder benefits and claims	0	0	0	–	0	0
Impairment of goodwill and other intangible assets	6	12	3	–	0	21
Restructuring activities	81	360	6	–	0	447
Total noninterest expenses	12,892	9,411	1,799	–	593	24,695
Noncontrolling interests	26	(12)	1	–	(16)	0
Income (loss) before income taxes	1,096	465	732	–	(1,066)	1,228
Cost/income ratio	91 %	93 %	71 %	–	N/M	93 %
Assets[2]	1,127,028	333,069	8,050	–	6,586	1,474,732
Additions to non-current assets	125	551	60	–	1,067	1,803
Risk-weighted assets[3]	231,574	87,472	8,432	–	16,734	344,212
CRD 4 leverage exposure measure (spot value at reporting date)	1,029,946	344,087	2,870	–	17,983	1,394,886
Average shareholders' equity	44,197	14,943	4,687	–	99	63,926
Post-tax return on average tangible shareholders' equity[4]	2 %	2 %	56 %	–	N/M	(1) %
Post-tax return on average shareholders' equity[4]	2 %	2 %	10 %	–	N/M	(1) %
[1] includes:						
Net interest income	4,104	5,875	(19)	–	2,418	12,378
Net income (loss) from equity method investments	81	3	44	–	9	137
[2] includes:						
Equity method investments	553	91	211	–	10	866

N/M – Not meaningful
[3] Risk-weighted assets and capital ratios are based upon CRR/CRD 4 fully loaded.
[4] The post-tax return on average tangible shareholders' equity and average shareholders' equity at the Group level reflects the reported effective tax rate for the Group, which was 160 % for the year ended December 31, 2017. For the post-tax return on average tangible shareholders' equity and average shareholders' equity of the segments, the Group effective tax rate was adjusted to exclude the impact of permanent differences not attributed to the segments, so that the segment tax rates were 33 % for the year ended December 31, 2017.

in € m. (unless stated otherwise)	Corporate & Investment Bank	Private & Commercial Bank	Asset Management	Non-Core Operations Unit	Corporate & Other	Total Consolidated
						2016
Net revenues[1]	16,764	11,090	3,015	(382)	(473)	30,014
Provision for credit losses	816	439	1	128	(0)	1,383
Noninterest expenses						
Compensation and benefits	4,062	4,075	737	68	2,931	11,874
General and administrative expenses	9,280	4,888	1,026	2,659	(2,398)	15,454
Policyholder benefits and claims	0	0	374	0	0	374
Impairment of goodwill and other intangible assets	285	0	1,021	(49)	(0)	1,256
Restructuring activities	299	142	47	4	(7)	484
Total noninterest expenses	13,926	9,104	3,205	2,682	525	29,442
Noncontrolling interests	49	0	0	(4)	(46)	0
Income (loss) before income taxes	1,973	1,547	(190)	(3,187)	(952)	(810)
Cost/income ratio	83 %	82 %	106 %	N/M	N/M	98 %
Assets[2]	1,201,894	329,869	12,300	5,523	40,959	1,590,546
Additions to non-current assets	22	480	1	0	1,517	2,019
Risk-weighted assets[3]	237,596	86,082	8,960	9,174	15,706	357,518
CRD 4 leverage exposure measure (spot value at reporting date)	954,203	342,424	3,126	7,882	40,018	1,347,653
Average shareholders' equity	40,312	14,371	4,460	690	2,249	62,082
Post-tax return on average tangible shareholders' equity[4]	3 %	8 %	71 %	N/M	N/M	(3) %
Post-tax return on average shareholders' equity[4]	3 %	7 %	(3) %	N/M	N/M	(2) %
[1] includes:						
Net interest income	6,314	6,201	326	142	1,724	14,707
Net income (loss) from equity method investments	138	5	44	269	(1)	455
[2] includes:						
Equity method investments	698	23	203	98	4	1,027

N/M – Not meaningful
[3] Risk-weighted assets and capital ratios are based upon CRR/CRD 4 fully loaded.
[4] The post-tax return on average tangible shareholders' equity and average shareholders' equity at the Group level reflects the reported effective tax rate for the Group, which was (67) % for the year ended December 31, 2016. For the post-tax return on average tangible shareholders' equity and average shareholders' equity of the segments, the Group effective tax rate was adjusted to exclude the impact of permanent differences not attributed to the segments, so that the segment tax rates were 35 % for the year ended December 31, 2016.

Corporate & Investment Bank

in € m. (unless stated otherwise)	2018	2017	2016	2018 increase (decrease) from 2017 in € m.	2018 increase (decrease) from 2017 in %	2017 increase (decrease) from 2016 in € m.	2017 increase (decrease) from 2016 in %
Net revenues							
Global Transaction Banking	3,834	3,917	4,419	(83)	(2)	(502)	(11)
Equity Origination	362	396	405	(34)	(9)	(9)	(2)
Debt Origination	1,081	1,327	1,393	(247)	(19)	(66)	(5)
Advisory	493	508	495	(16)	(3)	13	3
Origination and Advisory	1,935	2,232	2,292	(296)	(13)	(60)	(3)
Sales & Trading (Equity)	1,957	2,233	2,751	(276)	(12)	(518)	(19)
Sales & Trading (FIC)	5,361	6,447	7,066	(1,087)	(17)	(619)	(9)
Sales & Trading	7,317	8,680	9,817	(1,363)	(16)	(1,137)	(12)
Other	(40)	(601)	235	561	(93)	(836)	N/M
Total net revenues	13,046	14,227	16,764	(1,181)	(8)	(2,537)	(15)
Provision for credit losses	120	213	816	(94)	(44)	(603)	(74)
Noninterest expenses							
Compensation and benefits	3,970	4,364	4,062	(393)	(9)	302	7
General and administrative expenses	8,115	8,441	9,280	(326)	(4)	(839)	(9)
Impairment of goodwill and other intangible assets	0	6	285	(6)	N/M	(279)	(98)
Restructuring activities	287	81	299	205	N/M	(218)	(73)
Total noninterest expenses	12,372	12,892	13,926	(520)	(4)	(1,034)	(7)
Noncontrolling interests	24	26	49	(2)	(7)	(23)	(46)
Income (loss) before income taxes	530	1,096	1,973	(566)	(52)	(877)	(44)
Cost/income ratio	95 %	91 %	83 %	N/M	4 ppt	N/M	8 ppt
Assets[1]	988,531	1,127,028	1,201,894	(138,497)	(12)	(74,866)	(6)
Risk-weighted assets[2]	236,306	231,574	237,596	4,733	2	(6,022)	(3)
Average shareholders' equity[3]	43,427	44,197	40,312	(770)	(2)	3,885	10
Post-tax return on average tangible shareholders' equity	1 %	2 %	3 %	N/M	(1) ppt	N/M	(2) ppt
Post-tax return on average shareholders' equity	1 %	2 %	3 %	N/M	(1) ppt	N/M	(2) ppt

N/M – Not meaningful
[1] Segment assets represent consolidated view, i.e., the amounts do not include intersegment balances.
[2] Risk-weighted assets and capital ratios are based upon CRR/CRD 4 fully loaded.
[3] See Note 4 "Business Segments and Related Information" to the consolidated financial statements for a description of how average shareholders' equity is allocated to the divisions.

2018

In 2018, CIB announced, initiated and completed headcount and resource reductions as part of the division's strategic reshaping. This reshaping had a negative near term impact on revenues, but allowed the division to reduce leverage exposure and refocus on areas of strength. CIB income before income taxes for the full year 2018 was € 530 million or 52 % lower than the prior year. The decrease year over year was mainly driven by lower revenues, and higher restructuring costs, partly offset by lower compensation and benefits, general and administrative expenses and provisions for credit losses.

CIB net revenues for the full year 2018 were € 13 billion, a decrease of € 1.2 billion or 8 % compared to the full year 2017.

Global Transaction Banking net revenues were € 3.8 billion, a decrease of € 83 million or 2 % compared to 2017. Cash Management revenues were slightly lower, as a result of client perimeter reductions in 2017 and continued negative interest rates in Europe. However the business saw sequential revenue growth quarter-on-quarter through 2018. Trade revenues were slightly lower, specifically in structured products due to ongoing margin compression, while the underlying flow business showed positive development. Trust, Agency and Securities Services revenues were higher driven by a gain on sale on an asset disposal in the second quarter of 2018 and benefitted from higher interest rates in the U.S.

Origination and Advisory net revenues were € 1.9 billion, a € 296 million or 13 % decrease compared to the prior year. Debt Origination revenues were € 247 million or 19 % lower in a significantly reduced fee pool environment, despite significant market share gains in leveraged loans. Equity Origination revenues were € 34 million or 9 % lower. Advisory revenues were essentially flat compared to 2017.

Sales & Trading (FIC) net revenues were € 5.4 billion, a decrease of € 1.1 billion or 17 %. Rates revenues were significantly lower compared to the prior year, in particular in Europe with lower levels of client activity and the impact of the strategic reshaping in the U.S. Credit revenues were lower compared to a strong prior year. Foreign Exchange revenues were essentially flat. Revenues in Emerging Markets were lower due to underperformance in Latin America, specifically in the flow business, partly offset by an improvement in Eastern Europe, Middle East and Africa. Foreign Exchange and Rates revenues in Asia Pacific were lower due to performance in Japan and Australia, partly offset by strong revenues in Asia.

Sales & Trading (Equity) net revenues were € 2.0 billion, a decrease of € 276 million, or 12 %. Revenues in Prime Finance were slightly lower. Equity Derivatives revenues were slightly lower due to reduced client flow across both Europe and Asia Pacific, partly offset by a solid performance in the U.S., which benefited from increased volatility in the first quarter of 2018. Cash Equity revenues were lower due to facilitation losses in the Americas and the non-recurrence of gains on asset sales in the previous year.

Other net revenues were negative € 40 million, compared to negative € 601 million in 2017. The year over year improvement was driven by a gain of € 126 million (2017: a loss of € 348 million) relating to the impact of DVA on certain derivative liabilities. The non-recurrence of negative revenue events relating to assets identified as not consistent with CIB's strategy also impacted the year-on-year comparison. Investment grade lending revenues were essentially flat compared to 2017.

Provision for credit losses were € 120 million compared to € 213 million in the prior year. In the first half of 2018 de-risking on our shipping portfolio made further progress, while the benign macro-economic environment throughout the majority of the year supported the low level of net provisions. The fourth quarter of 2018 did see an increase mainly due to higher Stage 1 & 2 provisions. This was due to a weakening macro-economic outlook, which has an impact due to the forward looking information element of IFRS 9, in addition to a one-off adjustment to the calculation methodology on certain loans on which we hold insurance protection.

Non-interest expenses in 2018 were € 12.4 billion, a decrease of € 520 million or 4 % compared to the prior year. The decrease was driven by lower compensation and benefits costs across both fixed and variable compensation reflecting the strategic headcount actions. Non compensation costs were also lower across a number of line items due to continued cost discipline. The cost reductions were partially offset by increased restructuring costs.

2017

CIB Income before income taxes in 2017 of € 1.1 billion was € 877 million or 44 % lower than in the previous year. The period-over-period reduction in revenues was only partially offset by reduced noninterest expenses and lower credit loss provisions.

CIB net revenues for the full year 2017 were € 14.2 billion, a decrease of € 2.5 billion, or 15 % year-on-year.

Global Transaction Banking net revenues were € 3.9 billion, a decrease of € 502 million, or 11 %. Cash Management revenues were slightly lower, as interest rate increases in the U.S. partly offset the negative impact of client and product perimeter reductions initiated in 2016. Trade revenues were lower, driven by active balance sheet management efforts and continued margin pressure. Trust, Agency and Securities Services revenues were essentially flat, as lower transaction volumes due to client and country exits were offset by interest rate increases in the U.S. In addition, GTB revenues were negatively impacted by a change in funding charges allocation methodology in 2017.

Origination and Advisory revenues were € 2.2 billion, a € 60 million, or 3 % decrease compared to the prior year. Equity Origination revenues decreased by € 9 million or 2 %. Debt Origination revenues were € 66 million or 5 % lower, with a strong first quarter of 2017 supported by high inflows into the Leveraged Loan market, offset by slightly lower revenues during the remainder of 2017 amid lower client activity and Deutsche Bank's reduced risk appetite in the U.S. Advisory revenues were € 13 million or 3 % higher driven by a robust market and strong deal participation.

Sales & Trading (FIC) net revenues were € 6.4 billion, a decrease of € 619 million, or 9 %. Credit revenues were essentially flat supported by strong performance in distressed products in the first half of 2017, offset by less favorable trading conditions for flow businesses in the second half of 2017. Rates revenues were higher with solid performance in Europe, partly offset by a weaker performance in the U.S. Foreign Exchange revenues were significantly lower as a persistently low volatility environment impacted client flows. Asia Pacific Foreign Exchange and Rates revenues decreased with a strong first quarter of 2017 offset by lower client activity during the remainder of the year. Emerging Markets revenues were significantly lower due to subdued client flow and specific developments in Venezuela, South Africa and Turkey towards the end of the year.

Sales & Trading (Equity) net revenues were € 2.2 billion, a decrease of € 518 million, or 19 %. Revenues in Prime Finance were lower reflecting lower average balances during the year, reduced margins and higher funding cost. Equity Derivatives revenues were lower with a challenging trading environment particularly in the second half of 2017. Cash Equities revenues were essentially flat with volumes remaining challenged.

Other revenues were negative € 601 million, compared to a gain of € 235 million in 2016. 2017 included a loss of € 348 million (2016: a gain of € 27 million) relating to the impact of DVA on certain derivative liabilities. € 136 million of this loss was driven by a change in the creditor hierarchy in the event of a bank insolvency which was introduced by the German Resolution Mechanism Act (Abwicklungsmechanismusgesetz), effective January 1, 2017. This hierarchy change results in derivative counterparties receiving greater protection as they would be satisfied prior to senior unsecured debt holders in the creditor waterfall structure. This greater protection increases the value of the derivative assets for the counterparty, thereby increasing the value of derivative liabilities on our balance sheet, resulting in the loss. Revenues associated with assets identified as not consistent with CIB's strategy are reported under 'Other' as of the second quarter of 2017, including a negative impact related to the valuation of the legacy RMBS portfolio.

Provision for credit losses of € 213 million were down 74 % year-on-year. The decrease resulted primarily from reductions across all portfolios, including shipping. Despite the year-over-year reduction, shipping continued to be the main driver of provision for credit losses in 2017.

Noninterest expenses of € 12.9 billion, were € 1.0 billion, or 7 % lower than in 2016. Reduced litigation provisions, materially lower goodwill impairment and lower restructuring all positively impacted the comparison versus the prior year. Compensation costs increased due to the normalization of variable compensation payments in 2017, partially offset by lower non-compensation expenses. The year-on-year development of noninterest expenses also benefitted from foreign exchange rate movements.

Private & Commercial Bank

				2018 increase (decrease) from 2017		2017 increase (decrease) from 2016	
in € m. (unless stated otherwise)	2018	2017	2016	in € m.	in %	in € m.	in %
Net revenues:							
Private and Commercial Business (Germany)	6,802	6,583	6,873	220	3	(290)	(4)
Private and Commercial Business (International)[1]	1,439	1,455	1,466	(16)	(1)	(11)	(1)
Wealth Management (Global)	1,746	2,021	1,720	(274)	(14)	301	18
Exited businesses[2]	**170**	119	1,031	51	42	(912)	(88)
Total net revenues	**10,158**	10,178	11,090	(20)	(0)	(912)	(8)
Of which:							
Net interest income	6,077	5,875	6,201	202	3	(326)	(5)
Commissions and fee income	3,143	3,367	3,395	(224)	(7)	(28)	(1)
Remaining income	937	935	1,494	2	0	(558)	(37)
Provision for credit losses	**406**	313	439	93	30	(126)	(29)
Noninterest expenses:							
Compensation and benefits	4,001	4,027	4,075	(26)	(1)	(47)	(1)
General and administrative expenses	4,867	5,012	4,888	(145)	(3)	124	3
Impairment of goodwill and other intangible assets	0	12	0	(12)	N/M	12	N/M
Restructuring activities	55	360	142	(305)	(85)	218	154
Total noninterest expenses	**8,923**	9,411	9,104	(488)	(5)	307	3
Noncontrolling interests	**(0)**	(12)	0	12	(100)	(12)	N/M
Income (loss) before income taxes	**829**	465	1,547	363	78	(1,081)	(70)
Cost/income ratio	88 %	92 %	82 %	N/M	(5) ppt	N/M	10 ppt
Assets[3]	343,704	333,069	329,869	10,635	3	3,200	1
Risk-weighted assets[4]	87,709	87,472	86,082	237	0	1,390	2
Average shareholders' equity[5]	14,514	14,943	14,371	(429)	(3)	572	4
Post-tax return on average tangible shareholders' equity	5 %	2 %	8 %	N/M	2 ppt	N/M	(6) ppt
Post-tax return on average shareholders' equity	4 %	2 %	7 %	N/M	2 ppt	N/M	(5) ppt

N/M – Not meaningful
[1] Covers operations in Belgium, India, Italy and Spain.
[2] Covers operations in Poland and Portugal as well as Private Client Services (PCS) and Hua Xia in historical periods.
[3] Segment assets represent consolidated view, i.e., the amounts do not include intersegment balances.
[4] Risk-weighted assets and capital ratios are based upon CRR/CRD 4 fully loaded.
[5] See Note 4 "Business Segments and Related Information" to the consolidated financial statements for a description of how average shareholders' equity is allocated to the divisions.

Additional information

				2018 increase (decrease) from 2017		2017 increase (decrease) from 2016	
in € bn. (unless stated otherwise)	2018	2017	2016	in € bn.	in %	in € bn.	in %
Assets under management[1]	474	506	501	(32)	(6)	5	1
Net flows	(2)	4	(42)	(6)	N/M	47	N/M

N/M – Not meaningful
[1] We define assets under management as (a) assets we hold on behalf of customers for investment purposes and/or (b) client assets that are managed by us. We manage assets under management on a discretionary or advisory basis, or these assets are deposited with us. Deposits are considered assets under management if they serve investment purposes. In our Private and Commercial Business (Germany) and Private and Commercial Business (International), this includes all time deposits and savings deposits. In Wealth Management, we assume that all customer deposits are held with us primarily for investment purposes.

2018

In 2018, PCB successfully completed the legal merger of Deutsche Bank Privat- und Geschäftskunden AG and Postbank, the partial sale of the retail business in Poland, the integration of Sal. Oppenheim and further optimized its branch network. PCB generated income before income taxes of € 829 million in 2018, an increase of € 363 million, or 78 %, compared to the prior year, which was achieved while sustaining continued investment in our strategic initiatives and despite the ongoing headwind from low interest rate environment. The increase was primarily driven by a decline in noninterest expenses, partly offset by higher provision for credit losses, reflecting a provision release in the prior year as well as loan growth in 2018.

PCB net revenues of € 10.2 billion remained essentially flat compared to the prior year period.

In the Private and Commercial Business (Germany) net revenues increased by € 220 million, or 3 %, compared to the prior year period. Net interest income increased slightly compared to 2017, driven by growth in loan revenues, positive valuation effects from home savings liabilities and a positive year-on-year impact from mortgage loans previously measured at fair value and measured at amortized cost basis since the adoption of the reporting standard IFRS 9. These effects more than offset the impact of the low interest rate environment on deposit margins. Deposit revenues also included a positive impact from the growth in volumes. Remaining income increased significantly mainly reflecting higher asset sales including a € 156 million gain from a property sale, partly offset by lower income from interest-rate-risk hedges. The prior year period included a negative impact of € 118 million from the termination of a legacy Trust Preferred Security, which largely offset the positive impact of € 108 million from the sale of shares in Concardis GmbH. Commission and fee income slightly decreased year-on-year. Lower revenues from postal services subsequent to a contract alignment as well as lower revenues from investment products, in part impacted by MiFID II implementation were partly offset by higher fee income from current accounts reflecting repricing actions.

In the Private and Commercial Business (International), net revenues decreased by € 16 million, or 1 %, compared to the prior year period. The decrease was mainly driven by positive effects related to an asset sale transaction in 2017, reported in Remaining income. Net interest income remained essentially flat compared to the prior year period, with negative impacts from the ongoing low interest rate environment on deposit revenues offset by higher loan revenues. Commission and fee income was essentially flat compared to the previous year as growth in commercial product revenues offset the decline in investment product revenues due to the challenging market environment.

Net revenues in Wealth Management (Global) declined by € 274 million, or 14 %, driven by a € 197 million lower impact from workout activities related to legacy positions in the Sal. Oppenheim franchise. Net revenues were also impacted by unfavorable foreign exchange rate movements. Excluding these effects, net revenues were essentially flat compared to the prior year period. Revenue growth in Asia-Pacific was offset by lower client revenues in EMEA and Germany partly impacted by MiFID II implementation and strategic business decisions as well as volatile capital markets and lower client activity.

In the exited businesses, net revenues increased by € 51 million, or 42 %, compared to the prior year period. The increase was driven by a lower negative impact from sales transactions in Poland and Portugal (2017 was impacted by € 157 million related to the agreement of the partial sale of the retail business in Poland compared to a € 57 million negative effect from the transactions in Portugal and Poland in 2018). This was partly offset by a lower client revenue contribution in Poland due to its sale in November 2018 and the non-recurrence of a positive impact of € 20 million related to the disposal of the PCS unit.

Provision for credit losses of € 406 million increased by € 93 million, or 30 %, compared to the prior year period. This increase reflected higher releases in the previous year period mainly related to a single provision in Postbank as well as loan growth. Both periods included positive impacts from portfolio sales.

Noninterest expenses of € 8.9 billion decreased by € 488 million, or 5 %, compared to 2017. The decline included € 305 million lower restructuring charges related to strategy execution including the reorganization and integration measures in Germany as well as lower litigation costs. In addition, the decline in noninterest expenses is attributable to savings reflecting strict cost discipline as well as executed reorganization measures. These positive impacts were partly offset by incremental investment spending of approximately € 220 million related to the merger of Deutsche Bank Privat- und Geschäftskunden AG and Postbank, investments in our businesses in Italy and Spain as well as costs related to the agreements to sell businesses in Portugal and Poland.

PCB's Assets under Management of € 474 billion decreased by € 32 billion compared to December 31, 2017. The decline was mainly attributable to € 30 billion market depreciation, a deconsolidation effect of € 4 billion subsequent to the disposal of the business in Poland and € 2 billion net outflows partly compensated by € 4 billion foreign exchange rate movements. Net inflows in the Private and Commercial Business (Germany) primarily in deposits were offset by net outflows in Wealth Management. In Wealth Management, net inflows in Germany and Asia Pacific region were more than offset by net outflows in EMEA and Americas.

2017

PCB's results in 2017 were significantly impacted by strategy-related items, which included restructuring provisions related to the merger of Deutsche Bank Privat- und Geschäftskunden AG and Postbank as well as a negative revenue impact subsequent to the agreement related to the partial sale of the retail business in Poland. In contrast, results in 2016 benefited from a gain related to the sale of the stake in Hua Xia Bank Co. Ltd. These specific factors as well as the challenging interest environment explain most of the year-on-year decline of € 1.1 billion in PCB's income before income taxes of € 465 million.

Total net revenues of € 10.2 billion decreased by € 912 million, or 8 %, compared to 2016.

In the Private and Commercial Business (Germany) net revenues declined by € 290 million, or 4 %, compared to the prior year. Remaining income was significantly lower as in 2016, which benefited from gains on certain asset sales including € 129 million related to the sale of shares in VISA Europe Limited. In 2017 Remaining income included a negative impact of € 118 million from the termination of a legacy trust preferred security, which was largely compensated by a gain of € 108 million from the sale of shares in Concardis GmbH. Net interest income declined slightly year-on-year as the ongoing impact of the low interest rate environment on deposit revenues was partly mitigated by higher loan revenues reflecting growth in lending volumes. Commission and fee income increased slightly reflecting higher fee income from current accounts subsequent to the introduction of a new pricing model for current accounts (in Postbank) and higher revenues from investment products.

Revenues in the Private and Commercial Business (International) declined year-on-year by € 11 million, or 1 %. Remaining income decreased compared to 2016, which also included € 73 million gains related to the sale of shares in VISA Europe Limited, while revenues in 2017 included a smaller positive impact from an asset sale transaction. Net interest income was essentially flat as the impact of the low interest rate environment on deposit revenues was partly offset by higher loan revenues. Commission and fee income increased slightly principally reflecting higher fees from cards and current accounts as well as improved revenues from investment products.

Revenues in the Wealth Management (Global) businesses increased by € 301 million, or 18 %, mainly driven by positive impacts of approximately € 400 million from workout activities in the Sal. Oppenheim franchise. Workout gains were primarily driven by favorable legal outcomes which positively impacted the valuation of loans, whose carrying values were reduced as part of the acquisition. Excluding these effects, net revenues decreased compared to 2016 reflecting foreign exchange rate movements as well as a decline in net interest revenues driven by loan book reductions mainly in the Americas. Commission and fee income was slightly below 2016, reflecting lower client activities and a lower asset base in the Americas and EMEA partly compensated by good growth in Asia Pacific.

In the exited businesses, net revenues declined by € 912 million, or 88 % year-on-year. 2016 included a € 618 million revenue contribution from Hua Xia Bank Co. Ltd. as well as a € 140 million higher revenue contribution from the Private Client Services (PCS) unit in the U.S. prior to its sale. Net revenues in 2017 were also negatively impacted by € 157 million related to the agreement of the partial sale of the retail business in Poland.

Provision for credit losses of € 313 million decreased by € 126 million, or 29 %, year-on-year benefiting from a provision release in Postbank as well as a good portfolio quality in a continued benign economic environment. Both periods included positive impacts from selective portfolio sales.

Noninterest expenses of € 9.4 billion increased by € 307 million, or 3 %, compared to 2016. Noninterest expenses in 2017 included net restructuring charges of € 360 million (€ 142 million in 2016) related to strategic items including the reorganization and integration measures in Germany. Noninterest expenses also increased due to higher variable compensation and higher investment spending. These effects were partially offset by savings from executed reorganization measures and a reduced cost base after the disposal of the PCS unit.

PCB's Assets under Management of € 506 billion increased by € 5 billion compared to December 31, 2016. Negative impacts from foreign exchange rate movements were more than offset by market appreciation and by net inflows of € 4 billion primarily in the Private and Commercial Business (Germany). Net inflows were mainly in deposit products, in part reflecting the successful win-back of mandates. In Wealth Management net inflows were partly impacted by strategic business decisions and continued de-risking.

Asset Management

in € m. (unless stated otherwise)	2018	2017	2016	2018 increase (decrease) from 2017 in € m.	2018 increase (decrease) from 2017 in %	2017 increase (decrease) from 2016 in € m.	2017 increase (decrease) from 2016 in %
Net revenues							
Management Fees	2,115	2,247	2,190	(132)	(6)	57	3
Performance and transaction fees	91	199	220	(109)	(55)	(21)	(9)
Other revenues	(20)	86	209	(106)	N/M	(123)	(59)
Mark-to-market movements on policyholder positions in Abbey Life	0	0	396	0	N/M	(396)	N/M
Total net revenues	**2,186**	2,532	3,015	(346)	(14)	(483)	(16)
Provision for credit losses	**(1)**	(1)	1	(0)	67	(1)	N/M
Noninterest expenses							
Compensation and benefits	787	812	737	(25)	(3)	75	10
General and administrative expenses	929	978	1,026	(49)	(5)	(48)	(5)
Policyholder benefits and claims	0	0	374	(0)	N/M	(374)	(100)
Impairment of goodwill and other intangible assets	0	3	1,021	(3)	N/M	(1,018)	(100)
Restructuring activities	19	6	47	13	N/M	(41)	(88)
Total noninterest expenses	**1,735**	1,799	3,205	(64)	(4)	(1,405)	(44)
Noncontrolling interests	**85**	1	0	83	N/M	1	N/M
Income (loss) before income taxes	**367**	732	(190)	(364)	(50)	922	N/M
Cost/income ratio	79 %	71 %	106 %	N/M	8 ppt	N/M	(35) ppt
Assets[1]	10,030	8,050	12,300	1,980	25	(4,250)	(35)
Risk-weighted assets[2]	10,365	8,432	8,960	1,932	23	(528)	(6)
Average shareholders' equity[3]	4,669	4,687	4,460	(19)	(0)	227	5
Post-tax return on average tangible shareholders' equity	18 %	56 %	71 %	N/M	(38) ppt	N/M	(15) ppt
Post-tax return on average shareholders' equity	6 %	10 %	(3) %	N/M	(5) ppt	N/M	13 ppt

N/M – Not meaningful
[1] Segment assets represent consolidated view, i.e., the amounts do not include intersegment balances.
[2] Risk-weighted assets and capital ratios are based upon CRR/CRD 4 fully loaded.
[3] See Note 4 "Business Segments and Related Information" to the consolidated financial statements for a description of how average shareholders' equity is allocated to the divisions.

2018

In Asset Management, the initial public offering of DWS was successfully completed during the first quarter of 2018. Market conditions were challenging in 2018 with US tax reform and lower demand for European retail funds posing challenges to AM and the asset management industry. AM is adapting to the market conditions by further accelerating cost reductions. In line with its communicated target, AM maintained a management fee margin of 30 basis points and above in 2018. In 2018 AM reported significantly lower income before income taxes of € 367 million, a € 364 million or 50 % decline compared to 2017. The decline was principally driven by lower revenues which were negatively impacted by unfavorable net flows and lower performance fees. Higher non-controlling interest attributable to minority shareholders for nine months following the initial public offering of DWS, which did not arise in the prior year, were partially offset by lower noninterest expenses.

Net revenues were € 2.2 billion, a decrease of € 346 million or 14 %.

Management fees were € 132 million, or 6 % lower, driven by net outflows of Assets under Management and fee margin compression in active managed products, lower Assets under Management driven fees in Alternatives and the absence of revenues from sold and discontinued businesses. The decline was partly compensated by the strong performance of Passive business from higher Assets under Management.

Performance and transaction fees were significantly lower by € 109 million or 55 %, due to the absence of fees for a specific Alternatives fund received in 2017 and lower performance fees from Active products.

Other revenues were significantly lower by € 106 million compared to the prior year. The decline was primarily due to the impact of sold and discontinued businesses in both 2017 and 2018 and the absence of a non-recurring recovery relating to a real-estate fund legal matter recorded in 2017.

Noninterest expenses of € 1.7 billion were € 64 million, or 4 % lower. Compensation and benefits were essentially flat with lower variable compensation costs offset by higher severance payments. General and administrative expenses were slightly lower driven by a significant decline in cost of services provided by Deutsche Bank Group to DWS, partially offset by litigation expenses relating to a sold legacy business, higher MiFID II driven external research costs and higher costs for DWS operating as a stand-alone company.

Assets under Management were € 664 billion, a decrease of € 37 billion, or 5 %, versus December 31, 2017. The decrease was driven by € 28 billion unfavorable market development and € 23 billion net outflows, partly offset by € 13 billion positive foreign exchange effects. The outflows were primarily driven by outsourced insurance assets and the impact of US companies repatriating assets following US tax reforms. The development in Assets under Management was also impacted by volatile markets and weaker investor sentiment together with underperformance in some flagship funds. Passive had strong inflows particularly in European Exchange Traded Products and mandates.

The following table provides the development of Assets under Management during 2018, broken down by product type as well as the respective management fee margins:

in € bn.	Active Equity	Active Fixed Income	Active Multi Asset	Active SQI	Active Cash	Passive	Alternatives	Assets under Management
Balance as of December 31, 2017	95	238	57	65	59	115	73	702
Inflows	14	58	10	16	490	56	10	655
Outflows	(21)	(75)	(14)	(17)	(493)	(48)	(9)	(678)
Net Flows	(7)	(17)	(3)	(0)	(3)	8	1	(23)
FX impact	1	6	0	0	1	3	1	13
Performance	(10)	(2)	(3)	(3)	0	(11)	0	(28)
Other	0	1	0	(0)	(0)	(0)	1	1
Balance as of December 31, 2018	78	226	51	61	58	115	76	664
Management fee margin (in bps)	76	14	39	26	7	25	53	31

[1] Inflows and Outflows as reported include the AuM shifts between asset classes.

2017

In 2017, AM reported significantly higher income before income taxes of € 732 million, a € 922 million increase compared to 2016, driven by the absence of the impairment of goodwill and other intangible assets related to Abbey Life recorded in 2016. Excluding Abbey Life, which was disposed in the fourth quarter of 2016, AM income before income taxes in 2017 was broadly flat compared to 2016, as higher revenues were offset by higher noninterest expenses and several non-recurring items.

Net revenues were € 2.5 billion, a decrease of € 483 million or 16 %. Excluding Abbey Life in 2016, net revenues increased by € 54 million, or 2 %, compared to the prior year.

Management fees increased slightly by € 57 million, or 3 %, mainly in Active driven by favorable market movements.

Performance and transaction fees were € 21 million or 9 % lower, primarily driven by lower fund performance fees from one of the Active funds compared to the prior year.

Other revenues were significantly lower by € 123 million or 59 % compared to the prior year. The decline was primarily due to non-recurring revenues from Abbey Life excluding mark-to-market revenues and proceeds on sale of Asset Management India as well as a write-up relating to HETA exposure which was exited in 2016 - these impacts were partly offset by a recovery relating to a real-estate fund legal matter in the current year and the loss on sale of the Luxembourg-based Sal. Oppenheim asset servicing business and negative fair value related to guaranteed products in prior year. Following the sale of Abbey Life in 2016, no mark-to-market movements on policyholder positions were recorded in 2017, compared to € 396 million reported in the prior year.

Noninterest expenses of € 1.8 billion decreased significantly by € 1.4 billion, or 44 %, due to the non-recurrence of costs relating to Abbey Life and lower restructuring expenses. Compensation and benefits were higher due to increased variable compensation costs. General and administrative expenses were slightly lower compared to prior year, driven by the non-recurrence of costs relating to Abbey Life, partly offset by an operational loss provision taken in 2015 and released in 2016, coupled with 2017 costs relating to the DWS IPO.

Assets under Management were € 702 billion, a decrease of € 4 billion versus December 31, 2016, driven by € 36 billion unfavorable foreign exchange rate movements and € 13 billion divestments mainly relating to disposals of the Luxembourg-based Sal. Oppenheim asset servicing business and U.S. Private Clients business, partly offset by € 30 billion favorable market performance and € 16 billion net inflows led by European Exchange Traded Funds, multi asset and liquidity product net inflows, partly offset by insurance asset net outflows.

The following table provides the development of Assets under Management during 2017, broken down by product type as well as the respective management fee margins:

in € bn.	Active Equity	Active Fixed Income	Active Multi Asset	Active SQI	Active Cash	Passive	Alternatives	Assets under Management
Balance as of December 31, 2016	91	255	51	66	63	98	82	706
Inflows	19	70	21	16	410	36	16	589
Outflows	(21)	(72)	(10)	(20)	(409)	(25)	(15)	(573)
Net Flows	(2)	(2)	11	(4)	1	11	0	16
FX impact	(3)	(17)	(1)	(0)	(3)	(7)	(5)	(36)
Performance	9	5	1	2	(1)	11	3	30
Other	(1)	(3)	(6)	2	0	1	(6)	(13)
Balance as of December 31, 2017	95	238	57	65	59	115	73	702
Management fee margin (in bps)	76	14	42	24	9	24	58	32

[1] Inflows and Outflows as reported include the AuM shifts between asset classes.

Non-Core Operations Unit

				2018 increase (decrease) from 2017		2017 increase (decrease) from 2016	
in € m. (unless stated otherwise)	2018	2017	2016	in € m.	in %	in € m.	in %
Net revenues	–	–	(382)	0	N/M	382	N/M
thereof:							
Net interest income and net gains (losses) on financial assets/liabilities at fair value through profit or loss	–	–	(1,307)	0	N/M	1,307	N/M
Provision for credit losses	–	–	128	0	N/M	(128)	N/M
Noninterest expenses							
Compensation and benefits	–	–	68	0	N/M	(68)	N/M
General and administrative expenses	–	–	2,659	0	N/M	(2,659)	N/M
Policyholder benefits and claims	–	–	0	0	N/M	0	N/M
Impairment of goodwill and other intangible assets	–	–	(49)	0	N/M	49	N/M
Restructuring activities	–	–	4	0	N/M	(4)	N/M
Total noninterest expenses	–	–	2,682	0	N/M	(2,682)	N/M
Noncontrolling interests	–	–	(4)	0	N/M	4	N/M
Income (loss) before income taxes	–	–	(3,187)	0	N/M	3,187	N/M
Assets[1]	–	–	5,523	0	N/M	(5,523)	N/M
Risk-weighted assets[2]	–	–	9,174	0	N/M	(9,174)	N/M
Average shareholders' equity[3]	–	–	690	0	N/M	(690)	N/M

N/M – Not meaningful
[1] Segment assets represent consolidated view, i.e., the amounts do not include intersegment balances.
[2] Risk-weighted assets and capital ratios are based upon CRR/CRD 4 fully loaded.
[3] See Note 4 “Business Segments and Related Information” to the consolidated financial statements for a description of how average shareholders’ equity is allocated to the divisions.

From 2017 onwards, Non-Core Operations Unit (NCOU) ceased to exist as a standalone division. The remaining legacy assets as of December 31, 2016 are now managed by the corresponding operating segments, predominately Corporate & Investment Bank and Private & Commercial Bank.

Corporate & Other (C&O)

in € m. (unless stated otherwise)	2018	2017	2016	2018 increase (decrease) from 2017 in € m.	2018 increase (decrease) from 2017 in %	2017 increase (decrease) from 2016 in € m.	2017 increase (decrease) from 2016 in %
Net revenues	**(73)**	(489)	(473)	416	(85)	(17)	4
Provision for credit losses	**0**	(0)	(0)	1	N/M	0	(19)
Noninterest expenses							
Compensation and benefits	3,055	3,050	2,931	5	0	119	4
General and administrative expenses	(2,624)	(2,458)	(2,398)	(166)	7	(59)	2
Policyholder benefits and claims	0	0	0	0	N/M	0	N/M
Impairment of goodwill and other intangible assets	0	0	(0)	0	N/M	0	N/M
Restructuring activities	0	0	(7)	(0)	(85)	7	N/M
Total noninterest expenses	**431**	593	525	(161)	(27)	67	13
Noncontrolling interests	**(109)**	(16)	(46)	(93)	N/M	30	(65)
Income (loss) before income taxes	**(396)**	(1,066)	(952)	670	(63)	(114)	12
Assets[1]	5,872	6,586	40,959	(714)	(11)	(34,373)	(84)
Risk-weighted assets[2]	16,053	16,734	15,706	(681)	(4)	1,028	7
Average shareholders' equity	0	99	2,249	(99)	N/M	(2,150)	(96)

N/M – Not meaningful

[1] Assets in C&O reflect residual Treasury assets not allocated to the business segments as well as Corporate assets, such as deferred tax assets and central clearing accounts, outside the management responsibility of the business segments.

[2] Risk weighted assets are based upon CRR/CRD 4 fully loaded. Risk-weighted assets in C&O reflect Treasury and Corporate assets outside the management responsibility of the business segments, primarily the Group's deferred tax assets.

2018

C&O reported a loss before income taxes of € 396 million in 2018, an improvement of € 670 million, or 63 %, mainly driven by the realization of a negative currency translation adjustment in 2017, lower noninterest expenses as well as higher reversals of noncontrolling interests in 2018 primarily resulting from the initial public offering of DWS Group GmbH & Co. KGaA ("DWS").

Net revenues were negative € 73 million in 2018, compared to negative € 489 million in 2017. Net revenues in 2017 were impacted by the realization of a currency translation adjustment of negative € 164 million associated with the disposal of a non-strategic subsidiary in Argentina. Revenues related to maintaining funding and liquidity buffers in excess of business-based liquidity requirements amounted to negative € 73 million in 2018, compared to negative € 93 million in the prior year. Valuation and timing differences contributed revenues of € 107 million in 2018, compared to € 51 million in 2017.

Noninterest expenses were € 431 million in 2018, a decrease of € 161 million, or 27 %, compared to prior year, driven by lower-than-planned Infrastructure expenses in 2018. From 2018 onwards, Infrastructure expenses are allocated to the corporate divisions based on the planned allocations. Any difference between planned and actual allocations is captured within C&O. This was partly offset by expenses associated with shareholder activities as defined in the OECD Transfer Pricing Guidelines not allocated to the business divisions of € 422 million in 2018, compared to € 371 million in the prior year.

Noncontrolling interests are deducted from income before income taxes of the divisions and reversed in C&O. The increase from € 16 million in 2017 to € 109 million in 2018 was primarily a result of the aforementioned IPO of DWS.

2017

C&O reported a loss before income taxes of € 1.1 billion in 2017, compared to a loss of € 952 million in 2016, an increase of € 114 million, or 12 %, primarily driven by the realization of a negative currency translation adjustment and higher litigation costs in 2017, partly compensated by a positive valuation and timing impact.

Net revenues were negative € 489 million in 2017, compared to negative € 473 million in the prior year, a decline of € 17 million or 4 %. Net revenues in 2017 were impacted by the realization of a currency translation adjustment of negative € 164 million associated with the disposal of a non-strategic subsidiary in Argentina. Revenues related to maintaining funding and liquidity buffers in excess of business-based liquidity requirements were negative € 93 million in 2017, compared to negative € 12 million in 2016. Foreign exchange revaluation of proceeds from GBP denominated AT1 issuance was negative € 26 million in 2017, compared to negative € 127 million in the prior year. Valuation and timing differences contributed revenues of € 51 million in 2017, compared to negative € 148 million in 2016.

Noninterest expenses were € 593 million in 2017, an increase of € 67 million, or 13 %, compared to prior year. Litigation costs of € 112 million in 2017 increased by of € 130 million, compared to prior year. 2016 litigation costs benefitted from a € 73 million insurance recovery. This was partly offset by expenses associated with shareholder activities as defined in the OECD Transfer Pricing Guidelines not allocated to the business divisions of € 371 million in 2017, compared to € 411 million in 2016.

Noncontrolling interests are deducted from income before income taxes of the divisions and reversed in C&O. The decrease from € 46 million in 2016 to € 16 million in 2017 primarily related to CIB and PCB.

Financial Position

Assets

in € m.	Dec 31, 2018	Dec 31, 2017	2018 increase (decrease) from 2017 in € m.	2018 increase (decrease) from 2017 in %
Cash and central bank balances	188,731	225,655	(36,924)	(16)
Interbank balances (w/o central banks)	8,881	9,265	(384)	(4)
Central bank funds sold and securities purchased under resale agreements	8,222	9,971	(1,749)	(18)
Securities borrowed	3,396	16,732	(13,336)	(80)
Financial assets at fair value through profit or loss				
Trading assets	152,738	184,661	(31,924)	(17)
Positive market values from derivative financial instruments	320,058	361,032	(40,974)	(11)
Non-trading financial assets mandatory at fair value through profit and loss	100,444	N/M	100,444	N/M
Financial assets designated at fair value through profit or loss	104	91,276	(91,172)	(100)
Total financial assets at fair value through profit or loss	573,344	636,970	(63,626)	(10)
Financial assets at fair value through other comprehensive income	51,182	N/M	51,182	N/M
Financial assets available for sale	N/M	49,397	(49,397)	N/M
Equity method investments	879	866	13	1
Loans at amortized cost	400,297	401,699	(1,403)	(0)
Securities held to maturity	N/M	3,170	(3,170)	N/M
Property and equipment	2,421	2,663	(241)	(9)
Goodwill and other intangible assets	9,141	8,839	302	3
Other assets	93,444	101,491	(8,047)	(8)
Of which: Brokerage and securities related receivables	66,675	83,015	(16,340)	(20)
Assets for current tax / Deferred tax assets	8,200	8,014	186	2
Total assets	**1,348,137**	1,474,732	(126,595)	(9)
Of which: Total central bank funds sold, securities purchased under resale agreements and securities loaned across all applicable measurement categories	81,467	104,800	(23,333)	(22)
at amortized cost	11,618	26,703	(15,085)	(56)
mandatory at fair value through profit and loss	68,752	N/M	68,752	N/M
designated at fair value through profit and loss	0	78,097	(78,097)	N/M
at fair value through other comprehensive income	1,097	N/M	1,097	N/M
Of which: Total loans across all applicable measurement categories	429,591	420,063	9,528	2
at amortized cost	400,297	401,699	(1,403)	(0)
at fair value through profit and loss (trading)	11,462	10,876	586	5
mandatory at fair value through profit and loss	12,741	N/M	12,741	N/M
designated at fair value through profit and loss	0	4,802	(4,802)	N/M
at fair value through other comprehensive income	5,092	N/M	5,092	N/M
available for sale at fair value	N/M	2,685	(2,685)	N/M

Liabilities and Equity

in € m.	Dec 31, 2018	Dec 31, 2017	2018 increase (decrease) from 2017 in € m.	2018 increase (decrease) from 2017 in %
Deposits	564,405	581,873	(17,468)	(3)
Central bank funds purchased and securities sold under repurchase agreements	4,867	18,105	(13,239)	(73)
Securities loaned	3,359	6,688	(3,330)	(50)
Financial liabilities at fair value through profit or loss	415,680	478,636	(62,957)	(13)
Trading liabilities	59,924	71,462	(11,539)	(16)
Negative market values from derivative financial instruments	301,487	342,726	(41,239)	(12)
Financial liabilities designated at fair value through profit or loss	53,757	63,874	(10,117)	(16)
Investment contract liabilities	512	574	(62)	(11)
Other short-term borrowings	14,158	18,411	(4,253)	(23)
Other liabilities	117,513	132,208	(14,695)	(11)
Of which: Brokerage and securities related payables	90,708	106,742	(16,035)	(15)
Provisions	2,711	4,158	(1,447)	(35)
Liabilities for current tax / Deferred tax liabilities	1,456	1,346	110	8
Long-term debt	152,083	159,715	(7,632)	(5)
Trust preferred securities	3,168	5,491	(2,323)	(42)
Obligation to purchase common shares	0	0	0	N/M
Total liabilities	**1,279,400**	1,406,633	(127,234)	(9)
Of which: Total central bank funds purchased, securities sold under resale agreements and securities loaned across all applicable measurement categories	54,529	79,673	(25,144)	(32)
at amortized cost	8,226	24,794	(16,568)	(67)
signated at fair value through profit and loss	46,304	54,880	(8,576)	(16)
Total equity	**68,737**	68,099	639	1

Movements in Assets

As of December 31, 2018, total assets decreased by € 126.6 billion (or 9 %) compared to year-end 2017.

Positive market value from derivative financial instruments decreased by € 41.0 billion, mainly attributable to interest rate products driven by increased swap rates which are inversely correlated with mark-to-market values as well as foreign exchange rate products as a result of fluctuating foreign exchange rates. Reduced trading volumes also contributed to the decrease. This decrease went along with a corresponding decrease in negative market values from derivative financial instruments.

Cash and central bank balances decreased by € 36.9 billion, primarily driven by reductions in deposits and short-term borrowings as well as initiatives to utilize excess cash to fund securities positions.

Trading assets decreased by € 31.9 billion, mainly driven by strategic reshaping in CIB along with de-risking activities as well as reduced client positions in the Equities business. The weakening of global indices also contributed to the decrease.

Central bank funds sold, securities purchased under resale agreements and securities borrowed, across all applicable balance sheet categories, decreased by € 23.3 billion, primarily driven by managed reductions as a result of our balance sheet optimization initiatives, lower short coverage requirements and increased netting.

Brokerage and securities related receivables decreased by € 16.3 billion, primarily due to the majority of receivables from Prime Brokerage being moved to non-trading financial assets mandatory at fair value through profit and loss under IFRS 9. Cash/margin receivables also decreased, reflecting the reduction in negative market values from derivative financial instruments.

These decreases were partly offset by a € 8.3 billion increase in other assets excluding brokerage and securities related receivables, mainly driven by reclassifications of exposures to debt securities hold-to-collect following the implementation of IFRS 9 and reclassifications to assets held for sale subsequent to the agreement to sell our retail operations in Portugal.

Loan classifications have been significantly impacted by the adoption of IFRS 9. Loans previously classified at amortized cost under IAS 39 are now reported in several different categories, not only in loans at amortized cost, but also in non-trading financial assets mandatory at fair value through profit and loss and financial assets designated at fair value through other comprehensive income. Across all of these categories, the actual business movement for net loans was an increase of € 9.5 billion, or € 16.6 billion excluding the impact of exited business in PCB, mainly driven by new deals and increased drawdowns from the existing facilities during the period.

The overall movement of the balance sheet included an increase of € 24.0 billion due to foreign exchange rate movements, mainly driven by strengthening of the U.S. Dollar versus the Euro. The effects from foreign exchange rate movements are embedded in the movement of the balance sheet line items discussed in this section.

Movements in Liabilities

As of December 31, 2018, total liabilities decreased by € 127.2 billion (or 9 %) compared to year-end 2017.

Negative market values from derivative financial instruments decreased by € 41.2 billion, primarily due to the same factors as the movements in positive market values from derivative financial instruments discussed above.

Central bank funds purchased, securities sold under repurchase agreements and securities loaned, across all applicable balance sheet categories, decreased by € 25.1 billion, primarily driven by managed reductions as a result of our balance sheet optimization initiatives and increased netting.

Deposits decreased by € 17.5 billion, primarily driven by management actions to lower volumes with financial institutions as well as matured trades during the period. Maturing Certificates of Deposits held by other wholesale customers also contributed to the decrease. This decrease was partly offset by an increase in our retail business.

Brokerage and securities related payables decreased by € 16.0 billion, primarily due to strategic actions to reduce Prime Brokerage payables as part of our balance sheet optimization initiatives and lower cash/margin payables being in line with the observed reduction in positive market values from derivative financial instruments.

Trading liabilities decreased by € 11.5 billion, mainly driven by managed reductions in short positions to reduce short coverage requirements supporting our deleveraging activities along with our strategic reshaping in CIB.

Long term debt decreased by € 7.6 billion, primarily driven by matured deals including Targeted Longer-Term Refinancing Operations II (TLTRO II) during the period and managed reductions as a result of our balance sheet optimization initiatives.

Similar to total assets, the impact of foreign exchange rate movements during the period is embedded in the overall movements in liabilities as discussed in this section.

Liquidity

Liquidity reserves amounted to € 259 billion as of December 31, 2018 (compared to € 280 billion as of December 31, 2017). We maintained a positive liquidity stress result as of December 31, 2018 (under the combined scenario).

Equity

Total equity as of December 31, 2018, increased by € 1.3 billion compared to pro-forma total equity after the adoption of IFRS 9 as of January 1, 2018, which considers a one-time transition effect of € (671) million to the Total shareholders' equity of € 63.2 billion as of December 31, 2017 (please refer to chapter "IFRS 9 Transition Impact Analysis" in this report).

The increase of € 1.3 billion was mainly driven by an increase of non-controlling interests of € 1.3 billion as a result of the IPO and partial sale of Deutsche Bank's subsidiary DWS Group GmbH & Co. KGaA, the net income attributable to Deutsche Bank shareholders and additional equity components of € 267 million as well as net gains from exchange rate changes of € 500 million, relating especially to the US dollar. These factors were partly offset by a reduction in unrealized gains on financial assets at fair value through other comprehensive income of € 428 million, mainly due to asset sales, coupons paid on additional equity components of € 292 million net of tax as well as cash dividends paid to Deutsche Bank shareholders of € 227 million.

Regulatory Capital

With effect from January 1, 2018, the CRR/CRD 4 "transitional" (or "phase-in") rules under which Common Equity Tier 1 (CET 1) regulatory adjustments were phased in have reached a rate of 100 %, together with the 100 % phase-out rate of minority interest only recognizable under the transitional rules. For Risk-weighted assets (RWA) the grandfathering of equity investments at a risk-weight of 100 % expired by the end of 2017. Instead a risk weight between 190 % and 370 % determined based on Article 155 CRR under the CRR/CRD 4 is applied. Hence, starting 2018 onwards, the CET 1 capital and RWA figures show no difference between CRR/CRD 4 and fully loaded CRR/CRD 4.

Our CET 1 capital according to CRR/CRD 4 as of December 31, 2018 (fully loaded rules applicable) decreased by € 3.3 billion to € 47.5 billion, compared to € 50.8 billion as of December 31, 2017 (based on transitional arrangements). RWA according to CRR/CRD 4 increased by € 7.1 billion to € 350.4 billion as of December 31, 2018, compared to € 343.3 billion as of December 31, 2017. Due to the decrease in CRR/CRD 4 CET 1 capital and increase in RWA, the CRR/CRD 4 CET 1 capital ratio as of December 31, 2018 decreased to 13.6 % compared to 14.8 % as of December 31, 2017.

Our fully loaded CRR/CRD 4 CET 1 capital as of December 31, 2018 (now equal to CRR/CRD 4 CET 1 capital) amounted to € 47.5 billion, € 0.8 billion lower compared to € 48.3 billion as of December 31, 2017. RWA according to CRR/CRD 4 fully loaded increased by € 6.2 billion to € 350.4 billion as of December 31, 2018 compared to € 344.2 billion as of December 31, 2017. This resulted in the fully loaded CRR/CRD 4 CET 1 capital ratio as of December 31, 2018 decreasing to 13.6 % compared to 14.0 % as of December 31, 2017.

Liquidity and Capital Resources

For a detailed discussion of our liquidity risk management, see our Risk Report.

Credit Ratings

Deutsche Bank is rated by Moody's Investors Service, Inc. ("Moody's"), Standard & Poor's Credit Market Services Europe Limited ("S&P"), Fitch Ratings Limited ("Fitch"), and DBRS, Inc. ("DBRS", together with Moody's, S&P and Fitch, the "Rating Agencies").

S&P and Fitch are established in the European Union and have been registered in accordance with Regulation (EC) No 1060/2009 of the European Parliament and of the Council of September 16, 2009, as amended, on credit rating agencies ("CRA Regulation"). With respect to Moody's, the credit ratings are endorsed by Moody's office in the UK (Moody's Investors Service Ltd.) in accordance with Article 4(3) of the CRA Regulation. With respect to DBRS, the credit ratings are endorsed by DBRS Ratings Ltd. in the UK in accordance with Article 4(3) of the CRA Regulation.

Credit Ratings Development

The rating agencies have reacted to the strategic adjustments that the bank announced in April 2018. While the agencies regard the strategic changes as creditor-friendly in the long-term and acknowledge Deutsche Bank's current capital and balance sheet strength, they see short-term execution challenges on the bank's extended restructuring.

In April 2018, S&P placed Deutsche Bank's issuer credit and senior unsecured (or 'preferred debt') ratings on credit watch negative before downgrading both ratings by one notch to BBB+ in June 2018. Moody's, Fitch and DBRS changed their ratings outlooks to negative between April and June 2018.

In July 2018, Germany adopted a law change to harmonize the liability structure of German banks more closely with other European jurisdictions. With this, German banks are able to issue both lower ranked senior non-preferred debt (ranking pari passu with existing legacy plain vanilla unsecured debt) as well as higher ranked senior preferred debt (ranking pari passu with existing structured notes and short-term money market instruments).

Shortly after the amendment took effect, Moody's and DBRS resolved the rating actions they had assigned to most German banks to reflect this upcoming change. End of July 2018, DBRS lowered Deutsche Bank's senior debt rating by one notch to BBB (high) and renamed this debt class to senior non-preferred. At the same time, DBRS introduced a new long term senior debt class, and assigned an A (low) rating. This rating action resolved the 'rating under review with negative implications' status from beginning of July 2018.

In August 2018 Moody's removed the remaining notch government support from Deutsche Bank's senior debt rating and downgraded the debt class to Baa3. This renamed junior senior (or 'non-preferred') debt class will not carry an outlook assignment going forward, therefore the former negative outlook was withdrawn. Moody's confirmed Deutsche Bank's senior senior (or 'preferred') debt rating at A3 and renamed it to senior unsecured. At the same time Moody's upgraded Deutsche Bank's issuer rating to A3 to refer to the level of the most senior unsecured debt class available in each jurisdiction.

Potential Impacts of Ratings Downgrades

Deutsche Bank calculates both the contractual and hypothetical potential impact of a one-notch and two-notch downgrade by the rating agencies (Moody's, Standard & Poor's and Fitch) on its liquidity position, and includes this impact in its daily liquidity stress test and Liquidity Coverage Ratio calculations. The LCR and liquidity stress test results by scenario are separately disclosed.

In terms of contractual obligations, the hypothetical impact of a one-notch downgrade across the three Rating Agencies Moody's, Standard & Poor's and Fitch amounts to approximately € 0.7 billion, mainly driven by increased contractual derivatives funding and/or margin requirements. The hypothetical impact of a two-notch downgrade amounts to approximately € 1.0 billion, mainly driven by increased contractual derivatives funding and/or margin requirements of approximately € 984 million.

The above analysis assumes a simultaneous downgrade by the three rating agencies Moody's, Standard & Poor's and Fitch that would consequently reduce Deutsche Bank's funding capacity in the stated amounts. This specific contractual analysis feeds into the bank's idiosyncratic liquidity stress test scenario.

The actual impact of a downgrade to Deutsche Bank is unpredictable and may differ from potential funding and liquidity impacts described above.

Selected rating categories

	Counterparty Risk	Senior preferred/ Deposits[1]	Senior non-preferred[2]	Short-term rating
Moody's Investors Service, New York	A3	A3	Baa3	P-2
Standard & Poor's, New York	–	BBB+	BBB-	A-2
Fitch Ratings, New York	A- (dcr)	A-	BBB+	F2
DBRS, Toronto	A (high)	A (low)	BBB (high)	R-1 (low)

[1] Defined as senior unsecured bank rating at Moody's, senior unsecured debt at Standard & Poor's, senior preferred debt rating at Fitch and senior debt rating at DBRS. All agencies provide separate ratings for deposits and 'senior preferred' debt, but at the same rating level.
[2] Defined as junior senior debt rating at Moody's, as senior subordinated debt at Standard & Poor's and as senior non-preferred debt at Fitch and DBRS.

Each rating reflects the view of the rating agency only at the time the rating was issued, and each rating should be separately evaluated and the rating agencies should be consulted for any explanations of the significance of their ratings. The rating agencies can change their ratings at any time if they believe that circumstances so warrant. The long-term credit ratings should not be viewed as recommendations to buy, hold or sell Deutsche Bank's securities.

Tabular Disclosure of Contractual Obligations

Cash payment requirements outstanding as of December 31, 2018.

Contractual obligations		Payment due by period			
in € m.	Total	Less than 1 year	1–3 years	3–5 years	More than 5 years
Long-term debt obligations[1]	165,756	50,193	51,079	25,886	38,598
Trust preferred securities[1,2]	3,342	3,342	0	0	0
Long-term financial liabilities designated at fair value through profit or loss[3]	5,856	1,332	572	880	3,073
Finance lease obligations	118	19	24	10	65
Operating lease obligations	6,264	707	1,139	938	3,480
Purchase obligations	2,015	239	728	255	793
Long-term deposits[1]	33,727	0	15,656	6,028	12,043
Other long-term liabilities	1,922	1,111	316	189	306
Total	**219,000**	56,943	69,515	34,184	58,358

[1] Includes interest payments.
[2] Contractual payment date or first call date.
[3] Long-term debt and long-term deposits designated at fair value through profit or loss.

Figures above do not include the future revenues of non-cancellable sublease rentals of € 20 million on operating leases. Purchase obligations for goods and services include future payments for, among other things, information technology services and facility management. Some figures above for purchase obligations represent minimum contractual payments and actual future payments may be higher. Long-term deposits exclude contracts with a remaining maturity of less than one year. Under certain conditions future payments for some long-term financial liabilities designated at fair value through profit or loss may occur earlier. See the following notes to the consolidated financial statements for further information: Note 5 "Net Interest Income and Net Gains (Losses) on Financial Assets/Liabilities at Fair Value through Profit or Loss", Note 24 "Leases", Note 28 "Deposits" and Note 32 "Long-Term Debt and Trust Preferred Securities".

Outlook

The Global Economy

The Global Economy Outlook

Economic growth (in %)[1]	2019[2]	2018	Main driver
Global Economy			Global economic activity is still set to expand in 2019 but at a slower pace than in 2018, mainly due to a flattening of growth in the US and a slower growth in China as well as in Europe. While economic fundamentals are solid, a less accommodative monetary policy could lead to heightened risks with more frequent incidents of higher volatility.
GDP	**3.4**	3.8	
Inflation	**3.0**	3.3	
Of which:			
Industrialized countries			In 2019, the industrialized countries will present a mixed picture. While the US should continue to grow solidly, Europe is losing momentum as the weakness in exports is spreading over to the domestic economy despite supportive monetary and fiscal policies. The uncertainties caused by continued trade tensions are likely to place an increasing burden on the integrated value chains of many industrial countries. Moreover, the structural weakness in the euro area seems solid as the reform fatigue seems prevalent.
GDP	1.7	2.2	
Inflation	1.4	2.0	
Emerging markets			The Emerging market economies should continue to grow solidly. A softer monetary stance across central banks aimed at sustaining growth, bodes well for growth in 2019.
GDP	4.5	4.9	
Inflation	4.1	4.1	
Eurozone Economy			Economic growth in the eurozone should be supported by lower oil prices and fiscal easing in certain large member states including France. These positive benefits could be affected by one-off factors, including the ongoing weakness of the German automotive sector and a no-deal Brexit. A deterioration of the economic situation outside of Europe could threaten to diminish the eurozone economy as a result.
GDP	**0.9**	1.8	
Inflation	**1.3**	1.8	
Of which: German economy			The German economy continues to be negatively affected by the slowdown in world trade. This effect will be reinforced by the slowdown in global demand for cars given the dominance of the automotive industry in German exports. The strong labor market, solid wage increases and a structural demand overhang in the housing market combined with still extremely low interest rates suggest that the domestic part of the economy will continue to expand.
GDP	0.5	1.4	
Inflation	1.6	1.9	
US Economy			The US economy continue growing at a strong and above-trend pace but at a slightly slower rate. Economic growth should be supported by strong domestic consumption and capital expenditures. Tax cuts and fiscal spending should act as a tailwind and should support the economy throughout the year. Escalation of trade disputes leading to higher tariffs, could provide a material downside risk. We expect the Federal Reserve to hike its policy rate twice in 2019 to up to 2.875 %.
GDP	**2.5**	2.9	
Inflation	**1.6**	2.4	
Japanese Economy			The Japanese economy is likely to be negatively impacted by slower capital expenditure and decelerating investment growth as well as the impact of the increase in consumption taxes. These negative effects should be partly offset by higher public spending. We expect net exports to be a minor headwind to GDP growth, although exports could positively surprise in the event of successful trade negotiations between the US and Japan at the start of 2019.
GDP	**0.4**	0.7	
Inflation	**0.6**	1.0	
Asian Economy[3]			Asian economies are expected to lose growth momentum but still remain the power-house of world trade. The focus will be on China and export oriented economies such as Singapore, and Taiwan. Although a US-China trade deal would improve their growth prospects, an unexpected imposition of auto tariffs by the US would thwart those positive effects. We expect India to continue its economic catching-up process.
GDP	**5.7**	6.2	
Inflation	**2.5**	2.6	
Of which: Chinese Economy			The Chinese economy is likely to be driven by slower growth in the property market, weaker consumer sentiment and the US-China trade war. The negative impacts should be partly offset by expected tax cuts, easing of property regulations and an increase in the credit supply. Two more cuts in the reserve requirement ratio should also be supportive. Inflation is forecasted to increase to 2.4 % in 2019.
GDP	6.1	6.6	
Inflation	2.4	2.1	

The uncertainty in our global forecasts remains relatively high. Brexit, Italian political and economic developments, protests in France and the European Parliament election as well as an escalation of the trade war, in particular between China and the US, remain as key risks. Discussion deadlock in the UK parliament over the Brexit withdrawal agreement continues and may potentially lead to a 'no-deal' Brexit. A disorderly Brexit could aggravate the already uncertain economic outlook in the UK and Europe and hamper growth. In Continental Europe, the confrontation between Italy and the European Commission, an escalation of the "Yellow Vest" movement in France, or uncertainties around upcoming European Parliamentary elections could heighten volatility and harm eurozone growth. The global trade war is the key event on the global stage. A failure to secure a trade deal between the US and China, the imposition of additional tariffs in the automobile sector as well as on remaining China imports, or an escalation of conflicts beyond trade, could further reduce growth.

The Banking Industry

The greatest risks to the global banking industry in 2019 are likely to materialize if political issues create a sustained slowdown in macroeconomic growth. In the US, the trade disputes with China and Europe continue to simmer, and the fact that different political parties have majorities in the two respective houses of the US Congress have significantly increased the risk of political and government gridlock. Europe faces the prospect of a 'no deal' Brexit. It is also possible that Italy's populist government may take renewed action leading to increased uncertainty and volatility on the financial markets.

In Europe, the banking industry is expected to see a more challenging environment in 2019, slowing macroeconomic growth, the risks surrounding Brexit, and a potential decline in exports on any trade war. In addition, the banks' net interest income remains under pressure from zero and negative interest rates and a major shift in policy seems unlikely this year. Based on our current macroeconomic forecasts, business and household lending should continue at a moderate pace.

The conditions in Germany are comparable to those faced by European banks in general, although the indicators are somewhat more favorable overall. Asset quality is expected to remain solid with robust lending growth, even amidst a slight economic downturn. Similar earnings problems to those faced overall in Europe, primarily in terms of interest, and even greater difficulties in achieving solid profitability.

In the US, banks are facing a considerably more positive outlook. The economic slowdown will likely be less pronounced than in Europe, and unlike the ECB, the Federal Reserve is expected to continue raising interest rates, one of the main drivers for increases in revenues and profits.

The outlook for Chinese banks will depend on how acutely the trade dispute affects economic growth and the extent to which the government reacts with stimulus programs, which generally also involve increased lending. In the absence of any major distortions, the pace of lending growth could decline slightly from the relatively high levels in 2018. In Japan, there are no signs of fundamental change in the traditional banking business, with moderate lending growth likely to continue.

In Europe, the negotiations between the EU and the UK on the withdrawal agreement concluded in 2018 which was later rejected by the UK parliament. Whether a withdrawal agreement will eventually be reached and ratified will determine whether or not a transition period is implemented. The discussions on the future relationship between the EU and the UK will be impacted by the outcome of this process. Uncertainty on the regulation of cross-border business is likely to continue through 2019. In Europe, regulators are working to finalize outstanding legislative packages before the election of the next European Parliament in May 2019. One of these main packages focuses on Risk Reduction and includes Basel standards such as the Net Stable Funding Ratio (NSFR), Leverage Ratio (LR), Interest Rate Risk in the Banking Book (IRRBB), Large Exposures (LE) and Total Loss Absorbing Capacity (TLAC). The mandate of the current European Commission will end in October 2019. A newly installed College of Commissioners will then work on establishing the new five year work programme which will define new priorities for EU financial services regulators. We expect EU policy-makers to be focused on growth and the development of EU financial markets following Brexit.

The Deutsche Bank Group

In 2019, we intend to build on the progress made last year to pursue our near-term operating targets for adjusted costs and employees. We are also working towards our 2019 Post-tax Return on Average Tangible Equity target. Achieving our near-term Post-tax Return on Average Tangible Equity target requires amongst other things growth in our more market-sensitive businesses, which will in part depend on market conditions. Market conditions have improved as compared to those experienced in the fourth quarter of 2018, however, they are somewhat weaker than we had anticipated. We aim to achieve our other key performance indicators over time, consistent with becoming a simpler and safer bank.

Our most important key performance indicators are shown in the table below:

Key Performance Indicators

	Dec 31, 2018	Target KPI
Near-term operating targets		
Post-tax Return on Average Tangible Equity[1]	0.5 %	2019: greater than 4 %
Adjusted costs[2]	€ 22.8 bn	2019: € 21.8 bn
Employees[3]	91,737	2019: below 90,000
Long-term operating target		
Post-tax Return on Average Tangible Equity[1]	0.5 %	circa 10 %
Capital targets		
CRR/CRD 4 Common Equity Tier 1 capital ratio[4]	13.6 %	above 13.0 %
CRR/CRD 4 leverage ratio according to transitional rules (phase-in)[5]	4.3 %	4.5 %

[1] Based on Net Income attributable to Deutsche Bank shareholders. For further information, please refer to "Supplementary Information (Unaudited): Non-GAAP Financial Measures" of this report.
[2] Adjusted costs are noninterest expenses excluding impairment of goodwill and other intangible assets, litigation and restructuring and severance. For further information please refer to "Supplementary Information (unaudited): Non-GAAP Financial Measures" of this report.
[3] Internal full-time equivalents.
[4] Further detail on the calculation of this ratio is provided in the Risk Report.
[5] Further detail on the calculation of the CRR/CRD 4 leverage ratio according to transitional rules (phase-in basis) is provided in the Risk Report.

We are committed to working towards a target for our Post-tax Return on Average Tangible Equity of greater than 4 % in 2019.

For 2019, we expect revenues to be slightly higher compared to 2018. We aim to improve revenue in particular through investment in targeted growth areas including through loan and volume growth as well as through liquidity and balance sheet optimization and redeployment. Our outlook reflects our expectation of a solid global macroeconomic growth in 2019, with growth in the US specifically remaining strong, and no material distortions in foreign exchange rates.

We are committed to reducing our adjusted costs in 2019 to € 21.8 billion. We aim to reduce our internal workforce to below 90,000 full-time employees by year-end 2019. We expect to benefit from the run-rate impact of measures executed in 2018, as well as from the impact of Postbank integration and from the exit of retail business in Portugal. We will continue to address structural cost issues and optimize processes. Over time, we aspire to achieve a Post-tax Return on Average Tangible Equity of approximately 10 %, in a normalized environment and on the basis of the achievement of our cost targets.

We expect to benefit from a more normalized tax rate, and assume an increase in provision in credit losses in 2019 compared to last year.

We expect our CRR/CRD 4 Common Equity Tier 1 capital ratio to be negatively impacted by pending supervisory assessments but to remain above 13 % throughout the year 2019. We expect our CRR/CRD 4 leverage ratio (phase-in) to remain above 4 % in 2019. Absent supervisory adjustments, we anticipate year-end 2019 risk weighted assets (RWA) to stay essentially flat and CRR/CRD 4 leverage exposure to be slightly higher compared to year end 2018. With the transition to IFRS 16 as of January 1, 2019, we expect to see a further decline in our CRR/CRD 4 Common Equity Tier 1 capital ratio of approximately 20 basis points as we recognize certain lease contracts on our balance sheet.

We target a competitive dividend payout ratio. Our dividend payments are subject to our ability to maintain sufficient levels of distributable profits under our standalone financial statements in accordance with German accounting rules (HGB) for the respective fiscal year.

By the nature of our business, we are involved in litigation, arbitration and regulatory proceedings and investigations in Germany and in a number of jurisdictions outside Germany, especially in the US. Such matters are subject to many uncertainties. While we have resolved a number of important legal matters and made progress on others, we expect the litigation and enforcement environment to remain challenging in the short term. Litigation expenses in 2018 were relatively low as a result of our successful efforts in resolving a number of matters at or below estimated provisions. For 2019, and with a caveat that forecasting litigation expense is subject to many uncertainties, we expect litigation expense to be significantly higher than in 2018.

Our Business Segments

Corporate & Investment Bank (CIB)

CIB's aim is to provide efficient and seamless client coverage for our offering of investment and transaction banking products and services for corporate and institutional clients and thereby generate attractive returns for our shareholders.

After completing the targeted headcount and resource reductions as part of our strategic reshaping in 2018, the division's focus is now on revenue growth in 2019. We expect CIB revenues to be slightly higher this year compared to the prior year. CIB should also benefit from the Group wide re-deployment of excess liquidity into higher-yielding assets, which is expected to reduce liquidity-related funding costs.

For Global Transaction Banking, we expect revenues adjusted for a gain on sale in 2018 to be slightly higher in 2019 compared to the prior year, due to the benefits from expected interest rate increases in the US, in addition to treasury and deposit initiatives. We expect Trade revenues to be higher, driven by increased income from structured transactions. Cash Management revenues are expected be higher from net interest income growth and deposit initiatives. Trust and Agency and Securities Services revenues adjusted for the aforementioned gain on sale are expected to be slightly lower.

Origination & Advisory revenues are expected to be higher in 2019 year over year, driven by market share growth. We expect Debt Origination revenues to be higher as the business aims to build on the market share gains achieved during 2018 especially in Leveraged Finance, combined with an intensified focus on Investment Grade acquisition financing. Equity Origination revenues are also expected to be higher year over year with a renewed focus on initial public offerings and acquisition financing. Advisory revenues are expected to be essentially flat in 2019 compared to 2018.

We expect Sales & Trading Fixed Income and Currencies (FIC) revenues to be higher in 2019 compared to 2018 driven by an expected increase in client activity levels and a more favorable trading environment after difficult conditions, especially in the fourth quarter. Revenues in FIC should also benefit from improved client coverage provided by the integrated Institutional and Treasury Coverage Group, targeted resource deployment in Credit, an increased focus on cross-selling with GTB and the aforementioned lower funding costs as a result of re-deployment of the Group's excess liquidity.

Sales & Trading Equity revenues are expected to be slightly higher in 2019 compared to 2018. Equity Trading is expected to benefit from platform stabilization and investment in electronic trading platforms. We expect Equity Derivatives to see growth in structured products from funding optimization, targeted hires and system investment. Within Prime Finance, a focus on client balances and spreads in addition to the aforementioned lower funding costs as a result of re-deployment of the Group's excess liquidity are expected to drive higher revenues.

Noninterest expenses for 2019 are expected to be essentially flat. Costs excluding litigation, severance and restructuring and goodwill impairment are expected to be slightly lower, driven by lower non-compensation costs and reduced infrastructure related costs. In 2019, we expect CIB to benefit from the full-year run-rate impact of the headcount reductions in 2018. Further expense management initiatives in 2019 are focused on middle and back office functions. For 2019, we expect RWA in CIB to be essentially flat as targeted Credit Risk RWA increases should be offset by reduced Market Risk RWA and slightly lower Operational Risk RWA. We continue to focus on regulatory compliance, know-your-client (KYC) and client on-boarding process enhancement, system stability and control and conduct.

Risks to our outlook include potential impacts on our business model from Brexit and other macro and global geopolitical uncertainty. Risks regarding a potential deterioration of international trade relations cause further concerns. Uncertainty around central bank policies, ongoing regulatory developments (e.g. Basel III framework agreement) also pose risks, while challenges such as event risks and levels of client activity may also have an adverse impact.

Private & Commercial Bank (PCB)

PCB provides private, corporate and wealth management clients with a comprehensive range of products from standard banking services to individual investment and financing advice. We intend to keep our focus on the transformation and growth of our core businesses in 2019. In our German home market, we aim to continue the execution of our integration plans within DB Privat- und Firmenkundenbank AG and to deliver synergies and savings potential from the merger transaction. In our Private and Commercial Business (International), we will also execute identified measures consistent with the bank's strategy. The sale of our retail banking business in Portugal is well on track and envisaged to be closed in the first half of 2019. In our remaining countries, we intend to continue the transformation of our businesses with the objective to improve client coverage and efficiency. In our global Wealth Management business, our emphasis will be on further transforming and growing our global presence by hiring relationship managers in key markets. We also plan to continue to invest in our digital technologies across all business units.

Our financial outlook for 2019 assumes that net revenues remain essentially flat compared to 2018, with two opposing trends. The year-over-year revenue development will be negatively impacted by lower specific items, which we do not expect to repeat in the same magnitude as in 2018. We also expect the margin pressure on our deposit products to continue in the ongoing low interest rate environment and that our revenue base declines associated with our business divestitures in Poland and Portugal. However, we expect to be able to compensate for these negative factors with growth in our investment and loan businesses. In the investment businesses, we plan to grow net new assets, continue to hire relationship managers in core markets and expect to be able to leverage pricing opportunities in a normalizing market environment. In the loan businesses, we plan to benefit from the growth achieved in 2018 and target to further accelerate growth in 2019 within our existing tight risk management framework and with a focus on consumer and commercial loans.

Associated with this growth in our loan businesses, we expect higher provision for credit losses and RWA in 2019. The increase in RWA will also reflect the implementation of regulatory changes including effects from the ECB's targeted review of internal models. Assets under management are expected to be slightly higher in 2019, in line with our growth initiatives and slightly offset by a deconsolidation impact subsequent to the announced disposal of our business in Portugal.

We expect noninterest expenses and adjusted costs in 2019 to be slightly lower compared to 2018. The decline will be driven by further savings from our executed reorganization measures, including the merger of Deutsche Bank Privat- und Geschäftskunden AG and Postbank and the impact of our business divestitures in Poland and Portugal. Savings will be offset in part by inflationary effects and by continued investments in targeted growth initiatives, including the further development of our digital technologies and the further expansion of our Wealth Management franchise.

Specific risks to our outlook are slower economic growth in our major operating countries, a delayed or less pronounced interest rate recovery than expected, and lower client activity in the investment business. Client activity could be affected by adverse developments or market uncertainties, including higher than expected volatility in equity and credit markets. The implementation of regulatory requirements including consumer protection measures and delays in the implementation of our strategic projects could also have a negative impact on our revenues and costs.

Asset Management (AM)

We believe that AM, with its strong and diverse investment capabilities, is well positioned to address the challenges facing the industry and capture opportunities.

Developing economies are growing and increasing in wealth, offering new opportunities for managers as local investors expand their investment horizons globally. In developed markets, low interest rates are causing a shift from unmanaged assets, such as cash and deposit accounts, into managed portfolios. New digital technology, such as robo-advisory, is enhancing distribution capabilities giving investors online access, while the wider adoption of artificial intelligence is expanding product choice and enhancing performance. Asset managers are playing a progressively larger role in providing capital to the economy, taking advantage of bank retrenchment due to regulatory and capital constraints and diminished ability of national governments to fund infrastructure investment. However, pressure on fees and costs will persist, in an environment of heightened competition and growing regulatory and compliance requirements.

Over the medium term, the industry's global assets under management are expected to substantially increase, driven by strong net flows in passive strategies, alternatives and multi asset solutions, as clients increasingly demand value-for-money, transparency and outcome oriented products. Due to its capabilities in active and passive products, alternative investments and multi asset solutions, we believe that AM is well-positioned to grow market share amid these industry growth trends. While AM's digital capabilities are also creating new channels for it to distribute products and services, bottom line results are expected to be challenged by fee compression, rising costs of regulation and competitive dynamics. In the face of this challenge, AM intends to focus its growth initiatives on products and services where it has a competitive advantage, while also maintaining cost discipline.

We expect assets under management at the end of 2019 to be higher compared to the end of 2018. Net flows are expected to be positive across all major asset classes driven by passive products, alternative investments and multi asset solutions, thereby contributing to the flow target of 3 %-5 % per annum.

We expect 2019 revenues to be essentially flat compared to 2018. Management fees are assumed to be essentially flat compared to 2018 reflecting anticipated assets under management growth, offset by margin compression, the unfavorable impact from net outflows in 2018 as well as the most recent market downturn during the fourth quarter of 2018. Performance and transaction fees are expected to be lower than 2018, contributing 3 % to 5 % of our total net revenues. Other revenues are expected to be significantly higher mainly driven by lower funding costs. While we remain constructive on equity markets, we anticipate the management fee margin to be further challenged following one of the worst equity performances ever in December 2018.

In 2019, we intend to continue to keep our focus on tight cost management, with the aim of achieving reduced noninterest expenses and cost income ratio (CIR), together with slightly lower adjusted costs. We are on track to achieve our mid-term CIR target of below 65 %.

Risks to our outlook include the longevity of the bull market, continued low interests rates in developed markets, the pace of growth in emerging economies growth and increase in wealth, as well as the increasing demand for retirement products in developed countries aging populations. Continued elevated levels of political uncertainty worldwide, protectionist and anti-trade policies, and the United Kingdom's decision to leave the European Union could have unpredictable consequences in the economy, market volatility and investors' confidence, which may lead to declines in business and could affect our revenues and profits as well as the execution of our strategic plans. In addition, the evolving regulatory framework could lead to unforeseen regulatory compliance costs and possible delays in the implementation of our efficiency measures due to jurisdictional restrictions, which could have an adverse impact on our cost base.

Risks and Opportunities

The following section focuses on future trends or events that may result in downside risk or upside potential from what we have anticipated in our "Outlook".

Our aspirations are subject to various external and internal factors. In particular, timely and complete achievement of our strategic aspirations may be adversely impacted by the reduced revenue-generating capacities of some of our core businesses in the current challenging macro-economic and market environment, the ongoing headwinds posed by regulatory reforms and/or the effects on us of our legal and regulatory proceedings. Materialization of risks might (inter alia) lead to reduced profitability negatively affecting capital accretion and dividend capacity, the opposite would most likely hold true for the materialization of opportunities.

Risks

Macroeconomic and market conditions

If growth prospects, the interest rate environment and competition in the financial services industry worsen compared to the expectation in our outlook, this could adversely affect our business, results of operations or strategic plans.

Rising trade tensions between key trading partners (United States (US), China and the European Union (EU)) could be disruptive for global growth. A further escalation of US protectionism could lead to a rise in global tariffs and non-tariff barriers, affecting global trade and investment. Supply-chain disruptions would lead to a slowdown in global production, with Germany, China and other emerging markets being hit particularly hard, potentially leading to declines in business levels (e.g., in Global Transaction Banking) and losses across our businesses.

The euro area economy and Germany as well as Italy in particular have already entered a cyclical economic slowdown and 2019 GDP growth forecasts have been revised downwards mainly to reflect the deterioration of the external environment. The growth outlook could worsen further if downside risks like a severe trade war escalation or a "no-deal" Brexit materialized.

Continued elevated levels of political uncertainty, e.g. due to populist movements in major European Union member states, could have unpredictable consequences for the financial system and the economy more broadly and could contribute to an unwinding of aspects of European integration, potentially leading to declines in business levels, write-downs of assets and losses across our businesses. Our ability to protect ourselves against these risks is limited.

We may be required to take impairments on our exposure to the sovereign debt of European and other countries if the sovereign debt crisis reignites. The credit default swaps into which we have entered to manage sovereign credit risk may not fully offset these impairments.

A substantial proportion of the assets and liabilities on our balance sheet comprise financial instruments that we carry at fair value, with changes in fair value recognized in our income statement. As a result of such changes, we have incurred losses in the past, and may incur further losses in the future.

Adverse market conditions, unfavorable prices and volatility including material movements in foreign exchange rates (and resulting translation effects) as well as cautious investor and client sentiment may in the future materially and adversely affect our revenues and profits as well as the timely and complete achievement of our strategic aspirations and targets.

The direct costs and related business impacts described in this section and in our Outlook, should they be significantly greater than we currently expect, could impact the "available distributable items" (ADI) calculation for Deutsche Bank AG, which forms the basis for payment capacity on our Additional Tier 1 (AT1) securities. If Deutsche Bank AG's stand-alone results in accordance with German accounting rules according to the German Commercial Code (Handelsgesetzbuch, HGB) do not provide sufficient ADI, this would impact our ability to make distributions on our AT1 instruments. This could lead to higher funding costs for us and adversely affect market perceptions of us, with potential adverse effects on our results of operations and financial condition. Such impacts may also put increasing pressure on our capital, liquidity and other regulatory ratios. Also, if we do not report sufficient levels of distributable profits under our stand-alone financial statements in accordance with HGB, this would impact our ability to pay common equity dividends.

Any further downgrade in our credit rating could adversely affect our funding costs and business activities, although we are unable to predict to what degree this would be the case.

Political risks

Our key political risk, among other political risks, is Brexit. The overall macro-economic impact of the United Kingdom's (UK) decision to leave the EU is difficult to predict and depends on whether or not a withdrawal agreement can be reached. In general, we expect a prolonged period of uncertainty regarding the UK's future status with the EU to weigh on investment spending and economic growth. Particularly in a no-deal scenario, we could see higher market volatility and a more pronounced negative impact on economic growth in the UK and, to a lesser extent, the EU. But even in the EU, some countries and sectors would be more affected than others depending on the level of trade and supply chain integration with the UK. In addition, European banks may be exposed to heightened operational and market risks as a result of "no-deal" Brexit. In certain scenarios there would be uncertainty around continuity of contracts or related to contract life cycle events. Due to the continued legal and regulatory uncertainty, we will not be able to fully mitigate all potential "no deal" Brexit risks such as e.g., increased operational risks from accelerated client migrations and more complex interim booking models. A dedicated governance structure is in place to oversee our Brexit preparations, including management of operational and strategic issues arising from a "no deal" outcome.

Strategy

If we are unable to implement our strategy successfully including the sale of assets, which is also subject to the previously mentioned factors, we may be unable to achieve our financial objectives, or we may incur losses or low profitability or erosion of our capital base, and our financial condition, results of operations and share price may be materially and adversely affected.

Liquidity and funding risks

Our liquidity, business activities and profitability may be adversely affected by an inability to access the debt capital markets, funds from our subsidiaries or to sell assets during periods of market-wide or firm-specific liquidity constraints. This situation may arise due to circumstances unrelated to our businesses and outside our control, such as disruptions in the financial markets, or circumstances specific to us, such as reluctance of our counterparties or the market to finance our operations due to perceptions about potential outflows resulting from litigation, regulatory and similar matters, actual or perceived weaknesses in our businesses, our business model or our strategy, as well as in our resilience to counter negative economic and market conditions.

Further credit rating downgrades have contributed to an increase in our funding costs. Our elevated spread levels are sensitive to further adverse developments and any future downgrade could bring our credit rating into the non-investment grade category. This could materially and adversely affect our funding costs, the willingness of customers to continue to do business with us and significant aspects of our business model. Additionally, under many of the contracts governing derivative instruments to which we are a party, a downgrade could require us to post additional collateral, lead to terminations of contracts with accompanying payment obligations for us or give counterparties additional remedies.

Regulatory supervisory reforms, assessments and proceedings

The regulatory reforms enacted and proposed in response to weaknesses in the financial sector together with the increased regulatory scrutiny and discretion such as the comprehensive package of reforms published by the European Commission in 2016 to further strengthen the resilience of the European Union banks will impose material costs on us, create significant uncertainty for us and may adversely affect our business plans as well as our ability to execute our strategic plans. Those changes that require us to maintain increased capital may significantly affect our business model, financial condition and results of operation as well as the competitive environment generally. Other regulatory reforms, such as bank levies, may also materially increase our forecasted operating costs. Regulatory reforms in respect of resolvability or resolution measures may also significantly impact our business operations, and lead to losses for our shareholders and creditors.

Regulators can also impose capital surcharges or regulatory adjustments, for example, as a result of the annual Supervisory Review and Evaluation Process (SREP), to reflect additional risks posed by deficiencies in our control environment, or as a result of supervisory inspections concerning the treatment of specific products or transactions. The ECB has used these powers already in its SREP Decision and may continue to do so to address findings from onsite inspections. In extreme cases, they can even suspend our permission to operate within their jurisdictions. Furthermore, implementing enhanced controls may result in higher regulatory compliance costs that could offset or exceed efficiency gains. Regulators may disagree with our interpretation of specific regulatory requirements when interpretative matters are discussed as part of our ongoing regulatory dialogue or in the context of supervisory exams. Changes in rule interpretations can have a material impact on the treatment of positions for Pillar 1 regulatory purposes. Similarly, the evolving interpretations of the European Banking Authority (EBA) on the Capital Requirements Regulation (CRR) can also negatively impact our regulatory capital, leverage or liquidity ratios.

Legal and tax proceedings

We are subject to a number of legal proceedings and tax examinations. The outcome of these proceedings is difficult to estimate and may substantially and adversely affect our planned results of operations, financial condition and reputation. If these matters are resolved on terms that are more adverse to us than we expect, in terms of their costs or necessary changes to our businesses, or if related negative perceptions concerning our business and prospects and related business impacts increase, we may not be able to achieve our strategic objectives or we may be required to change them.

Compliance and Anti-Financial Crime risks

We are also subject to regulatory reviews and investigations, the outcome of which is difficult to estimate and which may substantially and adversely affect our planned results of operations, financial condition and reputation. For example, on September 21, 2018, the German Federal Financial Supervisory Authority (Bundesanstalt für Finanzdienstleistungsaufsicht, "BaFin") issued an order requiring us to implement measures on specified timelines over the coming months and years to improve our control and compliance infrastructure relating to anti-money laundering and, in particular, the know-your-client (KYC) processes in CIB, and appointed KPMG as special representative, reporting to BaFin on a quarterly basis on certain aspects of our compliance and progress with implementation of these measures. In addition, the BaFin extended the special representative's mandate to cover the bank's internal controls in the correspondent banking business on February 15, 2019. Our anti-money laundering and KYC processes, as well as our other internal processes that are aimed at preventing use of our products and services for the purpose of committing or concealing financial crime and our personnel responsible for our efforts in these areas, continue to be the subject of scrutiny by authorities in a number of jurisdictions. If we are unable to significantly improve our infrastructure and control environment in a timely manner, our results of operation, financial condition and reputation could be materially and adversely affected.

Risk management policies, procedures and methods as well as operational risks

Although we have devoted significant resources to develop our risk management policies, procedures and methods, including with respect to market, credit, liquidity and operational risk, they may not be fully effective in mitigating our risk exposures in all economic market environments or against all types of risk, including risks that we fail to identify or anticipate.

We may face operational risks arising from failures in our internal control environment or errors in the performance of our processes, e.g. in transaction processing, as well as loss of business continuity, which may disrupt our business and lead to material losses.

In addition, we are also exposed to conduct risk, comprising inappropriate business practices, including selling products that are not suitable for a particular customer, fraud, unauthorized trading and failure to comply with applicable regulations, laws and internal policies. An employee's misconduct reflecting fraudulent intent may lead to not only material losses but also reputational damage.

Impairment of Goodwill and other intangible assets

Goodwill is reviewed for impairment annually or more frequently if there are indications that impairment may have occurred.

Intangible assets are recognized separately from goodwill when they are separable or arise from contractual or other legal rights and their fair value can be measured reliably. These assets are tested for impairment or their useful lives reaffirmed at least annually.

The determination of the recoverable amount in the impairment assessment of non-financial assets requires estimates based on quoted market prices, prices of comparable businesses, present value or other valuation techniques, or a combination thereof, necessitating management to make subjective judgments and assumptions. These estimates and assumptions could result in significant differences to the amounts reported if underlying circumstances were to change. Impairments of goodwill and other intangible assets have had and may have a material adverse effect on our profitability and results of operations.

Deferred Tax Assets

We recognize deferred tax assets for future tax consequences attributable to temporary differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases, unused tax losses and unused tax credits. To the extent that it is no longer probable that sufficient taxable income will be available to allow the benefit of part or all of that deferred tax assets to be utilized we have to reduce the carrying amounts. This accounting estimate related to the deferred tax assets depends upon underlying assumptions that can change from period to period and requires significant management judgment. Each quarter, we re-evaluate our estimate related to deferred tax assets, including our assumptions about future profitability. Any reductions in the amount of deferred tax assets from a change in estimate have had and may in the future have material adverse effects on our profitability, equity and financial condition.

Digitalization

Digitalization offers new competitors such as cross-industry entrants or financial technology companies market entry opportunities. We thereby expect our businesses to have an increased need for investment in digital product and process resources to mitigate the risk of a potential loss of market share. In addition, with increasing levels of digitization, the ubiquitous access to banking services and the advent of new computing techniques, cyber-attacks could lead to technology failures, security breaches, unauthorized access, loss or destruction of data or unavailability of services. Any of these events could involve us in litigation or cause us to suffer financial loss, disruption of our business activities, liability to our customers, government intervention or damage to our reputation, whereas the cost of managing these cyber and information security risks remain high. Furthermore we face the challenge to embrace and incorporate new, disruptive technologies in conjunction with existing technological architecture.

Opportunities

Macroeconomic and market conditions

Should economic conditions, such as GDP growth, the interest rate environment and competitive conditions in the financial services industry improve beyond forecasted levels, this could lead to increasing revenues that may only be partially offset by additional costs, thus improving both income before income taxes and cost-income ratio directly and subsequently improving regulatory measures such as CET 1 and leverage ratio.

A resolution of the current tensions between the US and China would boost global trade and growth, at least in the short term.

Another upside scenario is an even better than expected performance of the US economy, e.g. if fiscal policy measures and the tight labor market lift productivity growth and hence the potential growth rate of the economy.

If market conditions, price levels, volatility and investor sentiment develop better than expected, this may also positively impact our revenues and profits. Similarly, if we experience higher levels of customer demand and market share than anticipated, this may positively affect our results of operations.

Regulatory change

Regulatory change can encourage banks to provide better products or services that can offer opportunities for differentiation in the marketplace. For example, MiFID II requires firms to provide a high standard of transparency and best execution and will provide Deutsche Bank the opportunity to further differentiate the bank by enhancing the services provided to its clients.

Strategy

Our strategy seeks to enable us to materially improve returns to shareholders over time and deploy our balance sheet and other resources to the highest return activities consistent with our client franchise and risk appetite. The implementation of our strategy may create further opportunities if implemented to a greater extent or under more favorable conditions than anticipated. If businesses and processes improve beyond our planning assumptions and cost efficiencies can be realized sooner or to a greater extent than forecasted, this could also positively impact our results of operations.

By investing in our areas of core strengths we expect to pursue our strategy of targeted growth. Within the Corporate & Investment Bank we seek to continue to grow revenues in Global Transaction Banking and FX to bolster our core franchise. Similarly we anticipate implementing a targeted hiring strategy in fixed income and debt origination. For the Private and Commercial Bank, our focus remains on consumer finance and our Mittelstand customer segment, and on seeking growth within Wealth Management core markets. Asset Management, including the DWS legal entities, have set a strategy to pursue with targeted growth in Americas and Asia and anticipate launching new products in active, alternatives and responsible investing.

Digitalization

Digitalization offers various revenue opportunities to increase monetization on existing and acquire new customer groups by expanding our own portfolio of products and engaging in product partnerships with third parties, thereby potentially benefiting from a shorter time-to-market. Market trends such as the platform economy, matching internal and external products with customer demands and transacting through one central platform, and open banking provide a clear opportunity for us to position ourselves as a strong player in these ecosystems. The goal is to develop an ecosystem of comprehensive services, with different components developed by different firms for areas like retail deposit marketplace, automated financial planning services (robo-advisor), and insurance recommendation services. Furthermore, we have an opportunity to expand our data capabilities, to improve personalized services for a better customer experience as well as to embrace disruptive technologies such as artificial intelligence to build out our service offering. Our large geographic outreach allows us to scale products globally. Particularly in the Private & Commercial Bank, we intend to build an ecosystem by accelerating digital growth in our core offering of consumer and investment products, as well as tap into additional markets with new near- and beyond banking offerings.

On the cost side, digitization offers our divisions an opportunity for significant efficiency gains. By investing in digital applications such as digital client self-boarding, front-to-back processes can be automated and the productivity increased. Development of strong data capabilities will enhance our ability to make accurate predictions about client and market behavior, reducing fraud and pricing products more efficiently, while complying with regulatory obligations using latest technologies.

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Introduction

Disclosures in line with IFRS 7 and IAS 1

The following Risk Report provides qualitative and quantitative disclosures about credit, market and other risks in line with the requirements of International Financial Reporting Standard 7 (IFRS 7) Financial Instruments: Disclosures, and capital disclosures required by International Accounting Standard 1 (IAS 1) Presentation of Financial Statements. It also considers the changes following the adoption of IFRS 9 with regards to classification and measurement and impairment and includes the related impacts on key ratios, like regulatory capital and risk-weighted assets (RWA) at Deutsche Bank. Further details specific to IFRS 9 can be found further below in this report, specifically in the Credit Risk Management and Model section, in the Credit Risk Mitigation section, in the Asset Quality section and in Note 1 “Significant accounting policies and critical accounting estimates” as well as Note 2 “Recently adopted and new accounting pronouncements” to the consolidated financial statements. Information which forms part of and is incorporated by reference into the financial statements of this report is marked by a bracket in the margins throughout this Risk Report.

Disclosures according to Pillar 3 of the Basel 3 Capital Framework

Most disclosures according to Pillar 3 of the Basel 3 Capital Framework, which are implemented in the European Union by the Regulation (EU) No 575/2013 on prudential requirements for credit institutions and investment firms (Capital Requirements Regulation or CRR) and supported by EBA Implementing Technical Standards or the “Final Report on the Guidelines on Disclosure Requirements under Part Eight of Regulation (EU) No 575/2013” (“EBA Guideline”, EBA/GL/2016/11, version 2*) are published in our additional Pillar 3 report, which can be found on our website. In cases where disclosures in this Risk Report also support Pillar 3 disclosure requirements these are highlighted by references from the Pillar 3 Report into the Risk Report.

Disclosures according to principles and recommendations of the Enhanced Disclosure Task Force (EDTF)

In 2012 the Enhanced Disclosure Task Force (“EDTF”) was established as a private sector initiative under the auspices of the Financial Stability Board (“FSB”), with the primary objective to develop fundamental principles for enhanced risk disclosures and to recommend improvements to existing risk disclosures. As a member of the EDTF we adhere to the disclosure recommendations in this Risk Report and also in our additional Pillar 3 Report.

Risk and capital overview

Key risk metrics

The following selected key risk ratios and corresponding metrics form part of our holistic risk management across individual risk types. The Common Equity Tier 1 Ratio (CET 1), Internal Capital Adequacy Ratio (ICA), Leverage Ratio (LR), Minimum Requirement for Own Funds and Eligible Liabilities (MREL), Liquidity Coverage Ratio (LCR), and Stressed Net Liquidity Position (sNLP) serve as high level metrics and are fully integrated across strategic planning, risk appetite framework, stress testing (except LCR and MREL), and recovery and resolution planning practices, which are reviewed and approved by our Management Board at least annually. The CET 1, LR, Leverage Exposure, MREL, LCR and Risk-Weighted-Assets ratios and metrics, which are regulatory defined, are based on the fully loaded rules under the Regulation (EU) No 575/2013 on prudential requirements for credit institutions and investment firms (Capital Requirements Regulation or "CRR") and the directive 2013/36/EU on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms (Capital Requirements Directive 4 or "CRD 4"). MREL is based on the Single Resolution Mechanism (SRM) regulation as well as respective communication by the Single Resolution Board (SRB). ICA, Economic Capital and SNLP are Deutsche Bank specific internal risk metrics in addition to the above described regulatory metrics.

Common Equity Tier 1 Ratio		**Total Risk-Weighted Assets**	
31.12.2018	13.6 %	31.12.2018	€ 350.4 bn
31.12.2017	14.0 %	31.12.2017	€ 344.2 bn
Internal Capital Adequacy Ratio[1]		**Total Economic Capital[2]**	
31.12.2018	196 %	31.12.2018	€ 26.1 bn
31.12.2017	192 %	31.12.2017	€ 27.1 bn
Leverage Ratio		**Leverage Exposure**	
31.12.2018	4.1 %	31.12.2018	€ 1,273 bn
31.12.2017	3.8 %	31.12.2017	€ 1,395 bn
Minimum requirement for own funds and eligible liabilities (MREL)			
31.12.2018	11.1 %		
Liquidity Coverage Ratio		**Stressed Net Liquidity Position (sNLP)**	
31.12.2018	140 %	31.12.2018	€ 48.1 bn
31.12.2017	140 %	31.12.2017	€ 32.6 bn

[1] The definition of capital supply for the purpose of calculating the internal capital adequacy ratio has been changed to take a perspective that aims at maintaining the viability of Deutsche Bank on an ongoing basis. More information is provided in section "Internal Capital Adequacy".
[2] The quantile used to measure the economic capital demand has been changed from 99.98 % to 99.9 % to take a perspective that aims at maintaining the viability of Deutsche Bank on an ongoing basis in alignment with the change of the definition of capital supply. More information is provided in section "Internal Capital Adequacy". An overview of the quantitative impact of the quantile change on the economic capital is provided in section "Risk Profile".

For further details please refer to sections "Risk profile", "Risk appetite and capacity", "Risk and capital plan", "Stress testing", "Recovery and resolution planning", "Risk and capital management", "Capital, leverage ratio and MREL" (for phase-in and fully loaded figures), "Liquidity coverage ratio", and "Stress testing and scenario analysis".

Overall risk assessment

Key risk types include credit risk (including default, migration, transaction, settlement, exposure, country, mitigation and concentration risks), market risk (including interest rate, foreign exchange, equity, credit spread, commodity and cross-asset & other risks), liquidity risk, business risk (including tax and strategic risk), cross risk, reputational risk and operational risk (with important sub-categories like compliance, legal, model, information security, fraud, and money laundering risks). We manage the identification, assessment and mitigation of top and emerging risks through an internal governance process and the use of risk management tools and processes. Our approach to identification and impact assessment aims to ensure that we mitigate the impact of these risks on our financial results, long-term strategic goals and reputation. Please refer to the section "Risk and capital management" for detailed information on the management of our material risks.

As part of our regular analysis, sensitivities of the key portfolio risks are reviewed using a bottom-up risk assessment, complemented by a top-down macro-economic and political scenario analysis. This two-pronged approach allows us to capture risk drivers that have an impact across our risk portfolios and business divisions as well as those relevant to specific portfolios.

Global growth concerns fueled a sharp deterioration in risk sentiment coming into the end of 2018, with equities falling sharply and credit spreads widening. The global economic outlook has softened but in a baseline growth is expected to remain solid. In developed markets, the US economy is expected to continue growing at a strong and above-trend rate while Europe is expected to see a further slowdown in 2019. The picture in emerging markets is mixed with growth in China expected to moderate further.

Key downside risks include Brexit, where the risks of the UK leaving the EU without a withdrawal agreement are rising following the defeat of Prime Minister May’s Brexit deal and the UK parliament’s decision to seek a renegotiation of the backstop. A disorderly Brexit could aggravate the already softer economic outlook in the UK and Europe. Tensions between Italy and Brussels and an escalation of the yellow vest movement in France are potential additional sources of political risk in Europe. The potential for an escalation in global trade conflict also remains a key source of global downside risk.

The assessment of the potential impacts of these risks is made through, inter alia, portfolio reviews and group-wide stress tests which assess our ability to absorb events should they occur. The results of these tests showed that the currently available capital and liquidity reserves, in combination with available mitigation measures, would allow us to absorb the impact of these risks if they were to materialize in line with the tests’ parameters. Information about risk and capital positions for our portfolios can be found in the “Risk and capital performance” section.

The overall focus of risk and capital management is on maintaining our risk profile in line with our risk strategy and supporting our strategic management initiatives with a focus on-balance sheet optimization.

Risk profile

The table below shows our overall risk position as measured by the economic capital usage calculated for credit, market, operational and business risk for the dates specified. To determine our overall (economic capital) risk position, we generally consider diversification benefits across risk types.

Overall risk position as measured by economic capital usage by risk type

in € m. (unless stated otherwise)	Dec 31, 2018	Dec 31, 2017	2018 increase (decrease) from 2017 in € m.	2018 increase (decrease) from 2017 in %
Credit risk	10,610	10,769	(159)	(1)
Market risk	10,341	10,428	(87)	(1)
Trading market risk	4,046	3,800	246	6
Nontrading market risk	6,295	6,628	(333)	(5)
Operational risk	7,359	7,329	30	0
Business risk	4,758	5,677	(918)	(16)
Diversification benefit[1]	(6,960)	(7,074)	114	(2)
Total economic capital usage	**26,108**	27,129	(1,020)	(4)

[1] Diversification benefit across credit, market, operational and strategic risk (largest part of business risk).

As of December 31, 2018, our economic capital usage amounted to € 26.1 billion, which was € 1.0 billion or 4 % lower than € 27.1 billion economic capital usage as of December 31, 2017.

The economic capital usage for credit risk as of December 31, 2018 was € 0.2 billion or 1 % lower compared to year-end 2017 mainly due to a lower counterparty credit risk component and smaller increases in settlement and transfer risk components. The change in counterparty credit risk is mainly due to reductions in exposures from derivatives and securities financing transactions, partly offset by increases in lending, whereas the increases for settlement and transfer risk are largely driven by model overlays related to changes in methodology.

The economic capital usage for trading market risk increased to € 4.0 billion as of December 31, 2018, compared to € 3.8 billion at year-end 2017. The increase was primarily driven by a model enhancement to better capture the tail risk in the stressed period, which was partly offset by a reduction in the traded default risk component due to reductions in inventory. The nontrading market risk economic capital usage decreased by € 0.3 billion or 5 % compared to December 31, 2017. The decrease was mainly driven by an accounting methodology change due to IFRS 9 becoming effective and diversification effects.

The operational risk economic capital usage totaled € 7.4 billion as of December 31, 2018, which was € 30 million or 0.4 % higher than the € 7.3 billion economic capital usage as of December 31, 2017. In line with the development of our RWA for operational risk, the increase was driven by several, largely offsetting effects. A lighter loss profile feeding into our capital model and a number of model improvements, mostly from recalibrations of data weights, reduced our capital demand for operational risk. The decrease has been compensated by our reduced budgeted expected losses for operational risk. For a detailed description see the section “Operational Risk Management”.

Our business risk economic capital methodology captures strategic risk, which also implicitly includes elements of non-standard risks including refinancing and reputational risk, a tax risk component and a capital charge for IFRS deferred tax assets on temporary differences. The business risk decreased to € 4.8 billion as of December 31, 2018 which was € 0.9 billion or 16 % lower compared to € 5.7 billion as of December 31, 2017. The decrease is due to a lower economic capital usage for the strategic risk component of € 1.1 billion driven by a better earnings outlook in our plan for 2019 compared to the one for 2018 in the previous year which was partially offset by higher economic capital usage from IFRS deferred tax assets on temporary differences of € 0.1 billion.

The inter-risk diversification benefit of the economic capital usage across credit, market, operational and strategic risk decreased by € 0.1 billion mainly due to a lower economic capital usage for the strategic risk component.

Our mix of business activities results in diverse risk taking by our business divisions. We also measure the key risks inherent in their respective business models through the total economic capital metric, which mirrors each business division’s risk profile and takes into account cross-risk effects at group level.

Risk profile of our business divisions as measured by economic capital

in € m. (unless stated otherwise)	Corporate & Investment Bank	Private & Commercial Bank	Asset Management	Corporate & Other	Total	Total (in %)
						Dec 31, 2018
Credit Risk	6,340	3,537	52	681	10,610	41
Market Risk	4,760	1,124	370	4,088	10,341	40
Operational Risk	6,092	866	401	0	7,359	28
Business Risk	3,521	29	0	1,208	4,758	18
Diversification Benefit[1]	(5,371)	(933)	(231)	(424)	(6,960)	(27)
Total EC	15,341	4,623	592	5,552	26,108	100
Total EC in %	59	18	2	21	100	N/M

N/M – Not meaningful
[1] Diversification benefit across credit, market, operational and strategic risk (largest part of business risk).

in € m. (unless stated otherwise)	Corporate & Investment Bank	Private & Commercial Bank	Asset Management	Corporate & Other	Total	Total (in %)
						Dec 31, 2017[1]
Credit Risk	6,519	3,596	62	591	10,769	40
Market Risk	4,679	1,386	310	4,054	10,428	38
Operational Risk	5,995	932	402	0	7,329	27
Business Risk	4,435	10	99	1,133	5,677	21
Diversification Benefit[2]	(5,450)	(950)	(264)	(410)	(7,074)	(26)
Total EC	16,178	4,974	609	5,368	27,129	100
Total EC in %	60	18	2	20	100	N/M

N/M – Not meaningful
[1] Amounts allocated to the business segments have been restated to reflect comparatives according to the structure as of December 31, 2018.
[2] Diversification benefit across credit, market, operational and strategic risk (largest part of business risk).

Corporate & Investment Bank's (CIB) risk profile is dominated by its trading activities to support origination, structuring and market making activities, which gives rise to all major risk types. Credit risk is broadly distributed across business units but most prominent in Global Credit Trading, Rates, Trade Finance, and Leveraged Debt Capital Markets. The share of operational risk in CIB's risk profile reflects a high loss profile in the industry combined with internal losses and has only slightly increased compared to the year-end 2017. Market risk arises mainly from its trading and market making activities. The remainder of CIB's risk profile is derived from business risk reflecting earnings volatility risk. The economic capital usage for CIB decreased compared to the year-end 2017, mainly due to lower economic capital usage for the strategic risk component, primarily due to an updated strategic plan which reflected moderate improvement in planned operating income.

Private & Commercial Bank's (PCB) risk profile comprises credit risk from retail, small and medium-sized enterprises lending and wealth management activities as well as nontrading market risk from investment risk, interest rate risk, including risk arising from modelling of client deposits and credit spread risk. There was no significant change for economic capital usage across credit, operational and strategic risk compared to the year-end 2017 and lower economic capital usage for market risk related to reductions in exposure to investment risk and interest rate risk.

Asset Management (AM), as a fiduciary asset manager, invests money on behalf of clients. As such, risk are primarily of a fiduciary nature and hence operationally driven. Nontrading market risk, however, does arise on guarantee products and co-investments in our funds. There was no significant change for economic capital usage compared to the year-end 2017.

Corporate & Other (C&O) mainly comprises nontrading market risk for structural foreign exchange risk, pension risk and equity compensation risk. The economic capital usage for credit and business risk increased compared to the year-end 2017 mainly due to a higher economic capital usage for transfer risk and IFRS deferred tax assets from temporary differences.

Risk and capital framework

Risk management principles

The diversity of our business model requires us to identify, assess, measure, aggregate and manage our risks, and to allocate our capital among our businesses. Our aim is to help reinforce our resilience by encouraging a holistic approach to the management of risk and return throughout our organization as well as the effective management of our risk, capital and reputational profile. We actively take risks in connection with our business. The following principles underpin our risk management framework:

- Risk is taken within a defined risk appetite;
- Every risk taken needs to be approved within the risk management framework;
- Risk taken needs to be adequately compensated; and
- Risk should be continuously monitored and managed.

Risk and capital are managed via a framework of principles, organizational structures and measurement and monitoring processes that are closely aligned with the activities of the divisions and business units:

- Core risk management responsibilities are embedded in the Management Board and delegated to senior risk managers and senior risk management committees responsible for execution and oversight.
- We operate a Three Lines of Defense ("3LoD") risk management model, in which risk, control and reporting responsibilities are defined.
- The 1st Line of Defense ("1st LoD") refers to those roles in the Bank whose activities generate risks, whether financial or non-financial, and who own the risks that are generated in their respective organizations. The 1st LoD manages these risks within the defined risk appetite and ensures that organization, governance and structures are in place to identify, monitor, assess and accept or mitigate the risks they generate or are exposed to.
- The 2nd Line of Defense ("2nd LoD") refers to the risk type controller roles in the Bank who facilitate the implementation of a sound risk management framework throughout the organization. The 2nd LoD defines the risk appetite and risk management and control standards for their risk type, and independently oversees and challenges the risk taking and risk management activities of the 1st LoD.
- The 3rd Line of Defense ("3rd LoD") is Group Audit, which is accountable for providing independent and objective assurance on the adequacy of the design and effectiveness of the systems of internal control and risk management.
- The risk strategy is approved by the Management Board on an annual basis and is defined based on the Group Risk Appetite and the Strategic and Capital Plan in order to align risk, capital and performance targets.
- Cross-risk analysis reviews are conducted across the Group to validate that sound risk management practices and a holistic awareness of risk exist.
- All material risk types, including credit risk, market risk, operational risk, liquidity risk, business risk and reputational risk, are managed via risk management processes. Modeling and measurement approaches for quantifying risk and capital demand are implemented across the material risk types. For more details, refer to section "Risk and Capital Management" for the management processes of our material risks.
- Monitoring, stress testing tools and escalation processes are in place for key capital and liquidity thresholds and metrics.
- Systems, processes and policies are critical components of our risk management capability.
- Recovery and contingency planning provides the escalation path for crisis management and supplies senior management with a set of actions designed to improve the capital and liquidity positions in a stress event.
- Resolution planning is the responsibility of our resolution authority, the Single Resolution Board. It provides a strategy to manage Deutsche Bank in case of default. It is designed to prevent major disruptions to the financial system or the wider economy through maintaining critical services.
- We apply an integrated risk management approach that aims at Group-wide consistency in risk management standards, while allowing for adaptation to local or legal entity specific requirements.

We promote a strong risk culture where employees at all levels are responsible for the management and escalation of risks and are empowered and encouraged to act as risk managers. We expect employees to exhibit behaviors that support a strong risk culture in line with our Code of Conduct. To promote this, our policies require that risk-related behavior is taken into account during our performance assessment and compensation processes. This expectation continues to be reinforced through communications campaigns and mandatory training courses for all DB employees. In addition, our Management Board members and senior management frequently communicate the importance of a strong risk culture to support a consistent tone from the top.

A standards-based assessment of risk culture, in particular focusing on risk awareness, risk ownership and management of risk within risk appetite has been undertaken. Assessment results are incorporated into existing risk reporting, reinforcing the message that risk culture is an integral part of effective day-to-day risk management.

Risk governance

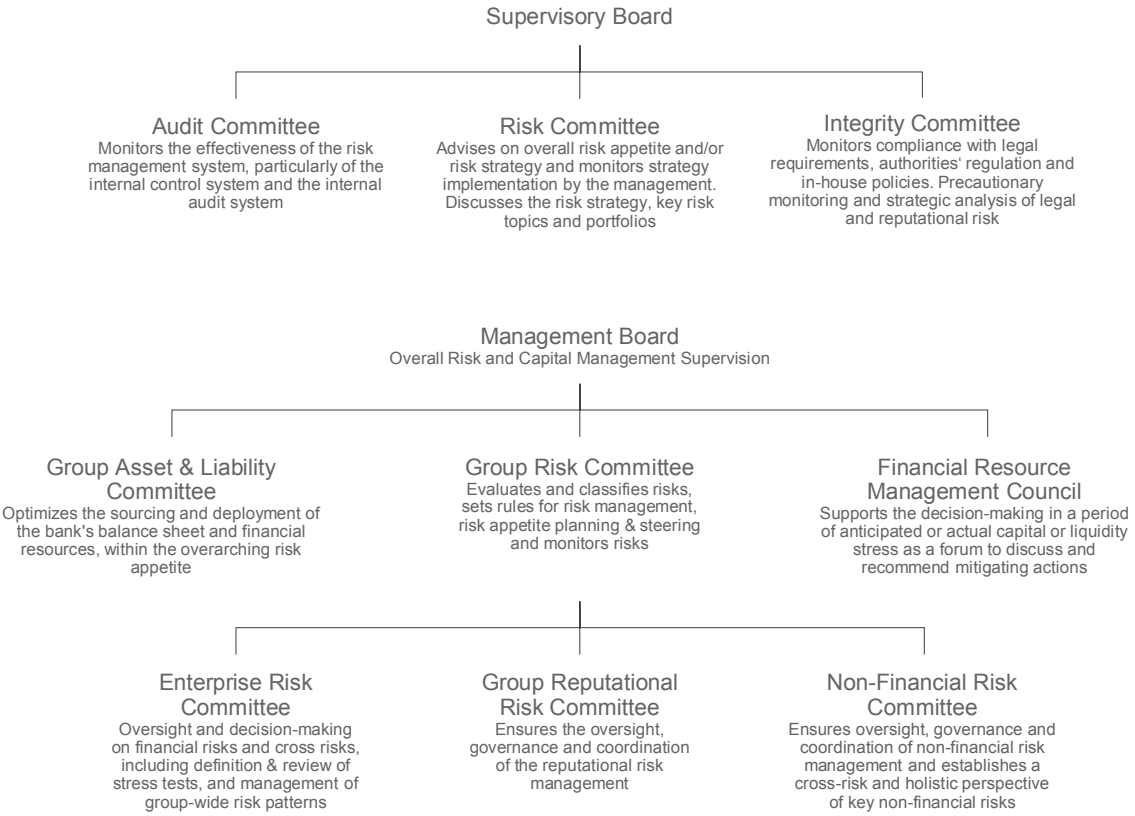
Our operations throughout the world are regulated and supervised by relevant authorities in each of the jurisdictions in which we conduct business. Such regulation focuses on licensing, capital adequacy, liquidity, risk concentration, conduct of business as well as organizational and reporting requirements. The European Central Bank (the "ECB") in connection with the competent authorities of EU countries which joined the Single Supervisory Mechanism via the Joint Supervisory Team act in cooperation as our primary supervisors to monitor our compliance with the German Banking Act and other applicable laws and regulations as well as the CRR/CRD 4 framework and respective implementations into German law.

European banking regulators assess our capacity to assume risk in several ways, which are described in more detail in the section "Regulatory Capital" of this report.

Several layers of management provide cohesive risk governance:

- The Supervisory Board is informed regularly on our risk situation, risk management and risk controlling, as well as on our reputation and material litigation cases. It has formed various committees to handle specific tasks (for a detailed description of these committees, please see the "Corporate Governance Report" under "Management Board and Supervisory Board", "Standing Committees").
- At the meetings of the Risk Committee, the Management Board reports on key risk portfolios, on risk strategy and on matters of special importance due to the risks they entail. It also reports on loans requiring a Supervisory Board resolution pursuant to law or the Articles of Association. The Risk Committee deliberates with the Management Board on issues of the overall risk appetite, aggregate risk position and the risk strategy and supports the Supervisory Board in monitoring the implementation of this strategy.
- The Integrity Committee, among other responsibilities, monitors the Management Board's measures that promote the company's compliance with legal requirements, authorities' regulations and the company's own in-house policies. It also reviews the Bank's Code of Business Conduct and Ethics, and, upon request, supports the Risk Committee in monitoring and analyzing the Bank's legal and reputational risks.
- The Audit Committee, among other matters, monitors the effectiveness of the risk management system, particularly the internal control system and the internal audit system.
- The Management Board is responsible for managing Deutsche Bank Group in accordance with the law, the Articles of Association and its Terms of Reference with the objective of creating sustainable value in the interest of the company, thus taking into consideration the interests of the shareholders, employees and other stakeholders. The Management Board is responsible for establishing a proper business organization, encompassing appropriate and effective risk management. The Management Board established the Group Risk Committee ("GRC") as the central forum for review and decision on material risk and capital-related topics. The GRC generally meets once a week. It has delegated some of its duties to individuals and sub-committees. The GRC and its sub-committees are described in more detail below.

Risk management governance structure of the Deutsche Bank Group



The following functional committees are central to the management of risk at Deutsche Bank:

- The Group Risk Committee (GRC) has various duties and dedicated authority, including approval of new or materially changed risk and capital models, review of high-level risk portfolios, risk exposure developments, and internal and regulatory Group-wide stress testing results, and monitoring of risk culture across the Group. The GRC sets risk appetite targets, for example in the form of limits or thresholds. In addition, the GRC reviews and recommends items for Management Board approval, such as key risk management principles, the Group Recovery Plan and the Contingency Funding Plan, over-arching risk appetite parameters, and recovery and escalation indicators. The GRC also supports the Management Board during Group-wide risk and capital planning processes.
- The Non-Financial Risk Committee (NFRC) oversees, governs and coordinates the management of non-financial risks in Deutsche Bank Group and establishes a cross-risk and holistic perspective of the key non-financial risks of the Group, including conduct and financial crime risk. It is tasked to define the non-financial risk appetite tolerance framework, to monitor and control the effectiveness of the non-financial risk operating model (including interdependencies between business divisions and control functions), and to monitor the development of emerging non-financial risks relevant for the Group.
- The Group Reputational Risk Committee (GRRC) is responsible for the oversight, governance and coordination of reputational risk management and provides for a look-back and a lessons learnt process. It reviews and decides all reputational risk issues escalated by the Regional Reputational Risk Committees ("RRRCs") and RRRC decisions which have been appealed by the business divisions, infrastructure functions or regional management. It provides guidance on Group-wide reputational risk matters, including communication of sensitive topics, to the appropriate levels of Deutsche Bank Group. The RRRCs which are sub-committees of the GRRC, are responsible for the oversight, governance and coordination of the management of reputational risk in the respective regions on behalf of the Management Board.
- The Enterprise Risk Committee (ERC) has been established with a mandate to focus on enterprise-wide risk trends, events and cross-risk portfolios, bringing together risk experts from various risk disciplines. As part of its mandate, the ERC approves the enterprise risk inventory, certain country and industry threshold increases, and scenario design outlines for more severe group-wide stress tests as well as reverse stress tests. It reviews group-wide stress test results in accordance with risk appetite, reviews the risk outlook, emerging risks and topics with enterprise-wide risk implications like risk culture.
- The Financial Resource Management Council (FRMC) is an ad-hoc governance body, chaired by the Chief Financial Officer and Chief Risk Officer with delegated authority from the Management Board, to oversee financial crisis management at the bank. The FRMC provides a single forum to oversee execution of both the Contingency Funding Plan and the Group Recovery Plan. The council recommends upon mitigating actions to be taken in a time of anticipated or actual capital or

liquidity stress. Specifically, the FRMC is tasked with analyzing the bank's capital and liquidity position, in anticipation of a stress scenario recommending proposals for capital and liquidity related matters, and ensure execution of decisions.
– The Group Asset & Liability Committee has been established by the Management Board in 2018. Its mandate is to optimize the sourcing and deployment of the bank's balance sheet and financial resources within the overarching risk appetite set by the Management Board.

Our Chief Risk Officer (CRO), who is a member of the Management Board, has Group-wide, supra-divisional responsibility for the management of all credit, market, liquidity and operational risks as well as for the continuing development and enhancement of methods for risk measurement. In addition, the CRO is responsible for monitoring, analyzing and reporting risk on a comprehensive basis.

The CRO has direct management responsibility for the Risk function. Risk management & control duties in the Risk function are generally assigned to specialized risk management units focusing on the management of

– Specific risk types
– Risks within a specific business
– Risks in a specific region.

These specialized risk management units generally handle the following core tasks:

– Foster consistency with the risk appetite set by the GRC within a framework established by the Management Board and applied to Business Divisions;
– Determine and implement risk and capital management policies, procedures and methodologies that are appropriate to the businesses within each division;
– Establish and approve risk limits;
– Conduct periodic portfolio reviews to keep the portfolio of risks within acceptable parameters; and
– Develop and implement risk and capital management infrastructures and systems that are appropriate for each division.

Additionally, Business Aligned Risk Management (BRM) represents the Risk function vis-à-vis specific business areas. The CROs for each business division manage their respective risk portfolio, taking a holistic view of each division to challenge and influence the division's strategy and risk ownership and implement risk appetite.

The specialized risk management functions are complemented by our Enterprise Risk Management (ERM) function, which sets a bank-wide risk management framework seeking to ensure that all risks at the Group and Divisional level are identified, owned and assessed for materiality. Material risks are owned and controlled by functional (usually 1st LoD) risk teams within the agreed risk appetite and risk management principles. ERM is responsible for aggregating and analyzing enterprise-wide risk information, including review of the risk/return profiles of portfolios to support informed strategic decision-making regarding the effective application of the Bank's resources. ERM has the mandate to:

– Manage enterprise risk appetite at Group level, including the framework and methodology as to how appetite is applied across risk types, divisions, businesses and legal entities;
– Integrate and aggregate risks to provide greater enterprise risk transparency to support decision making;
– Commission forward-looking stress tests and manage Group recovery and resolution plans; and
– Govern and improve the effectiveness of the risk management framework.

The specialized risk management functions and ERM have a reporting line to the CRO.

While operating independently from each other and the business divisions, our Finance and Risk functions have the joint responsibility to quantify and verify the risk that we assume.

In May 2018, we fully merged our subsidiary Deutsche Postbank AG into the subsidiary DB PGK AG, to form "DB Privat- und Firmenkundenbank AG" (DB PFK AG). As a result, the existing joint risk management for the previously individual subsidiaries has been adjusted to reflect the new setup and size of the entity. The joint risk management of our enlarged subsidiary DB PFK AG is promoted through harmonized processes for identifying, assessing, managing, monitoring, and communicating risk, the strategies and procedures for determining and safeguarding risk-bearing capacity, and corresponding internal control procedures as well as joint governance.

Key features of the adjusted setup are:

- Established DB PFK AG Risk Management structure which continues to have additional functional reporting lines into Deutsche Bank AG Risk
- Involvement of the central DB PFK AG Risk Committee in the Group Risk Committee through mutual memberships
- Extension of selected risk committees of DB PFK AG to include voting members of relevant risk functions of Deutsche Bank AG, and vice versa
- Alignment to key Group risk policies
- Joint DB PFK AG reporting across the merged portfolios for all risk types and inclusion of DB PFK AG in the Group Risk and Capital Profile
- Independent DB PFK AG business and risk strategy aligned with and embedded in the Group Risk Appetite Framework, Strategy and Policies

Risk appetite and capacity

Risk appetite expresses the aggregate level of risk that we are willing to assume to achieve our strategic objectives, as defined by a set of quantitative metrics and qualitative statements. Risk capacity is defined as the maximum level of risk we can assume given our capital and liquidity base, risk management and control capabilities, and our regulatory constraints.

Risk appetite is an integral element in our business planning processes via our risk strategy and plan, to promote the appropriate alignment of risk, capital and performance targets, while at the same time considering risk capacity and appetite constraints from both financial and non-financial risks. Compliance of the plan with our risk appetite and capacity is also tested under stressed market conditions. Top-down risk appetite serves as the limit for risk-taking for the bottom-up planning from the business functions.

The Management Board reviews and approves our risk appetite and capacity on an annual basis, or more frequently in the event of unexpected changes to the risk environment, with the aim of ensuring that they are consistent with our Group's strategy, business and regulatory environment and stakeholders' requirements.

In order to determine our risk appetite and capacity, we set different group level triggers and thresholds on a forward looking basis and define the escalation requirements for further action. We assign risk metrics that are sensitive to the material risks to which we are exposed and which are able to function as key indicators of financial health. In addition to that, we link our risk and recovery management governance framework with the risk appetite framework.

Reports relating to our risk profile as compared to our risk appetite and strategy and our monitoring thereof are presented regularly up to the Management Board. In the event that our desired risk appetite is breached, a predefined escalation governance matrix is applied so these breaches are highlighted to the respective committees.

Risk and capital plan

Strategic and capital plan

We conduct annually an integrated strategic planning process which lays out the development of our future strategic direction for us as a Group and for our business areas. The strategic plan aims to create a holistic perspective on capital, funding and risk under risk-return considerations. This process translates our long-term strategic targets into measurable short- to medium-term financial targets and enables intra-year performance monitoring and management. Thereby we aim to identify growth options by considering the risks involved and the allocation of available capital resources to drive sustainable performance. Risk-specific portfolio strategies complement this framework and allow for an in-depth implementation of the risk strategy on portfolio level, addressing risk specifics including risk concentrations.

The strategic planning process consists of two phases: a top-down target setting and a bottom-up substantiation.

In a first phase – the top-down target setting – our key targets for profit and loss (including revenues and costs), capital supply, capital demand as well as leverage, funding and liquidity are discussed for the group and the key business areas. In this process, the targets for the next five years are based on our global macro-economic outlook and the expected regulatory framework. Subsequently, the targets are approved by the Management Board.

In a second phase, the top-down objectives are substantiated bottom-up by detailed business unit plans, which consist of a month by month operative plan; years two and three are planned per quarter and years four and five are annual plans. The proposed bottom-up plans are reviewed and challenged by Finance and Risk and are discussed individually with the business heads. Thereby, the specifics of the business are considered and concrete targets decided in line with our strategic direction. The bottom-up plans include targets for key legal entities to review local risk and capitalization levels. Stress tests complement the strategic plan to also consider stressed market conditions.

The resulting Strategic and Capital Plan is presented to the Management Board for discussion and approval. The final plan is presented to the Supervisory Board.

The Strategic and Capital Plan is designed to support our vision of being a leading European bank with a global reach supported by a strong home base in Germany and aims to ensure:

- Balanced risk adjusted performance across business areas and units;
- High risk management standards with focus on risk concentrations;
- Compliance with regulatory requirements;
- Strong capital and liquidity position; and
- Stable funding and liquidity strategy allowing for business planning within the liquidity risk appetite and regulatory requirements.

The Strategic and Capital Planning process allows us to:

- Set earnings and key risk and capital adequacy targets considering the bank's strategic focus and business plans;
- Assess our risk-bearing capacity with regard to internal and external requirements (i.e., economic capital and regulatory capital); and
- Apply an appropriate stress test to assess the impact on capital demand, capital supply and liquidity.

All externally communicated financial targets are monitored on an ongoing basis in appropriate management committees. Any projected shortfall versus targets is discussed together with potential mitigating strategies with the aim to ensure that we remain on track to achieve our targets. Amendments to the strategic and capital plan must be approved by the Management Board. Achieving our externally communicated solvency targets ensures that we also comply with the Group Supervisory Review and Evaluation Process (SREP) requirements as articulated by our home supervisor. Deutsche Bank was informed by the ECB of its decision regarding prudential minimum capital requirements for 2019 that apply from March 1, 2019 onwards, following the results of the 2018 SREP. The decision requires Deutsche Bank to maintain a CET 1 ratio of at least 11.82 % on a consolidated basis. This CET 1 capital requirement comprises the Pillar 1 minimum capital requirement of 4.50 %, the Pillar 2 requirement (SREP add-on) of 2.75 %, the capital conservation buffer of 2.50 %, the countercyclical buffer (currently 0.07 %) and the G-SII buffer of 2.00 %. The new CET 1 capital requirement of 11.82 % for 2019 is higher than the CET 1 capital requirement of 10.69 %, which was applicable to Deutsche Bank in 2018, reflecting the now fully phase-in capital conservation buffer and the G-SII buffer. Correspondingly, 2019 requirements for Deutsche Bank's Tier 1 capital ratio are at 13.32 % and for its total capital ratio at 15.32 %. Also, the ECB communicated to us an individual expectation to hold a further "Pillar 2" CET 1 capital add-on, commonly referred to as the '"Pillar 2" guidance'. The capital add-on pursuant to the "Pillar 2" guidance is separate from and in addition to the Pillar 2 requirement. The ECB has stated that it expects banks to meet the "Pillar 2" guidance although it is not legally binding, and failure to meet the "Pillar 2" guidance does not lead to automatic restrictions of capital distributions.

Internal Capital Adequacy Assessment Process

Deutsche Bank's internal capital adequacy assessment process (ICAAP) consists of several well-established components which ensure that Deutsche Bank maintains sufficient capital to cover the risks to which the bank is exposed on an ongoing basis:

- Risk identification and assessment: The risk identification process forms the basis of the ICAAP and results in an inventory of risks for the Group. All risks identified are assessed for their materiality. Further details can be found in section "Risk identification and assessment".
- Capital demand/risk measurement: Risk measurement methodologies and models are applied to quantify the capital demand which is required to cover all material risks except for those which cannot be adequately limited by capital e.g. liquidity risk. Further details can be found in sections "Risk profile" and "Capital, Leverage Ratio and MREL".
- Capital supply: Capital supply quantification refers to the definition of available capital resources to absorb unexpected losses. Further details can be found in section "Capital, Leverage Ratio and MREL"
- Risk appetite: Deutsche Bank has established Group risk appetite thresholds which express the level of risk that we are willing to assume to achieve our strategic objectives. Threshold breaches are subject to a dedicated governance framework triggering management actions aimed to safeguard capital adequacy. Further details can be found in sections "Risk appetite and capacity" and "Key risk metrics".

- Capital planning: The risk appetite thresholds for capital adequacy metrics constitute boundaries which have to be met to safeguard capital adequacy on a forward-looking basis. Further details can be found in section “Strategic and capital plan”.
- Stress testing: Capital plan figures are also considered under various stress test scenarios to prove resilience and overall viability of the bank. Capital adequacy metrics are also subject to regular stress tests throughout the year to constantly evaluate Deutsche Bank’s capital position in hypothetical stress scenarios and to detect vulnerabilities under stress. Further details can be found in section “Stress testing”.
- Capital adequacy assessment: Although capital adequacy is constantly monitored throughout the year, the ICAAP concludes with a dedicated annual capital adequacy assessment (CAS). The assessment consists of a Management Board statement about Deutsche Bank’s capital adequacy, which is linked to specific conclusions and management actions to be taken to safeguard capital adequacy on a forward-looking basis.

As part of its ICAAP, Deutsche Bank distinguishes between a normative and economic internal perspective. The normative internal perspective refers to the internal process aimed at the fulfilment of all capital-related legal requirements and supervisory demands on an ongoing basis. The economic internal perspective refers to an internal process aimed at capital adequacy using internal economic capital demand models and an internal economic capital supply definition. Both perspectives focus on maintaining the viability of Deutsche Bank on an ongoing basis.

Stress testing

Deutsche Bank is subject to stress test exercises to satisfy both internal as well as externally imposed stress test requirements. The internal stress tests are based on in-house developed methods and inform a variety of risk management use cases such as our risk appetite framework or capital allocation. The regulatory stress tests, e.g. the EBA stress test and the US-based CCAR (Comprehensive Capital Analysis and Review) stress tests are strictly following the processes and methodologies as prescribed by the regulatory authorities.

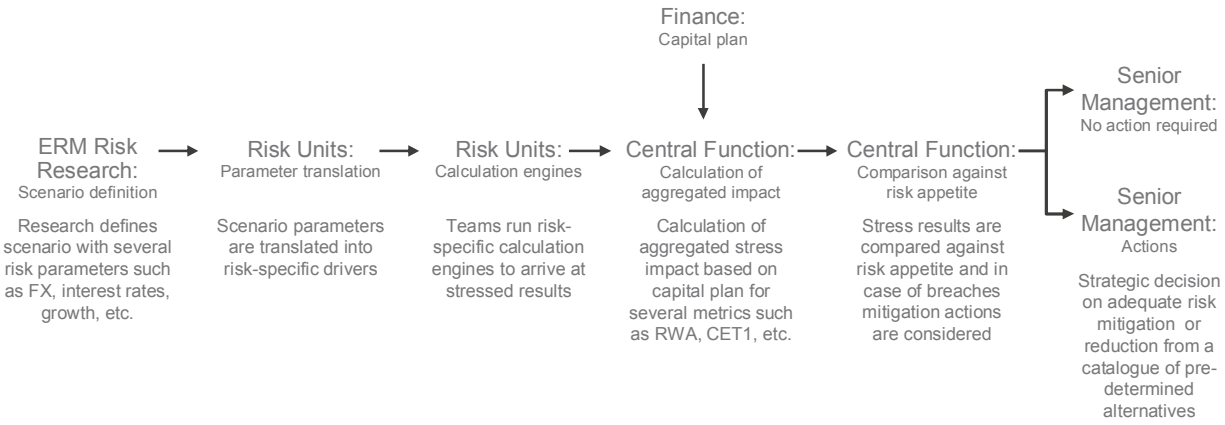
Our internal stress tests are performed on a regular basis in order to assess the impact of a severe economic downturn on our risk profile and financial position. These exercises complement traditional risk measures and represent an integral part of our strategic and capital planning process. Our stress testing framework comprises regular Group-wide stress tests based on internally defined scenarios of different severities and localizations. We include all material risk types into our stress testing exercises. The time-horizon of internal stress tests is generally one year and can be extended to multi-year, if required by the scenario assumptions. Our methodologies undergo regular scrutiny from Deutsche Bank’s internal validation team (Model Risk Management) whether they correctly capture the impact of a given stress scenario. These analyses are complemented by portfolio- and country-specific stress tests as well as regulatory requirements, such as annual reverse stress tests and additional stress tests requested by our regulators on group or legal entity level. Moreover, capital plan stress testing is performed to assess the viability of our capital plan in adverse circumstances and to demonstrate a clear link between risk appetite, business strategy, capital plan and stress testing. An integrated procedure allows us to assess the impact of ad-hoc scenarios that simulate potential imminent financial or geopolitical shocks.

The initial phase of our internal stress tests consists of defining a macroeconomic downturn scenario by ERM Risk Research in cooperation with business specialists. ERM Risk Research monitors the political and economic development around the world and maintains a macro-economic heat map that identifies potentially harmful scenarios. Based on quantitative models and expert judgments, economic parameters such as foreign exchange rates, interest rates, GDP growth or unemployment rates are set accordingly to reflect the impact on our business. The scenario parameters are translated into specific risk drivers by subject matter experts in the risk units. Based on our internal models framework for stress testing, the following major metrics are calculated under stress: risk-weighted assets, impacts on profit and loss and economic capital by risk type. These results are aggregated at the Group level, and key metrics such as the CET 1 ratio, ECA ratio and Leverage Ratio under stress are derived. Stress impacts on the Liquidity Coverage Ratio (LCR) and the Liquidity Reserve are also considered. Prior to the impact assessment the more severe scenarios are discussed and approved by the Enterprise Risk Committee (ERC) which also reviews the final stress results. After comparing these results against our defined risk appetite, the ERC also discusses specific mitigation actions to remediate the stress impact in alignment with the overall strategic and capital plan if certain limits are breached. The results also feed into the recovery planning which is crucial for the recoverability of the Bank in times of crisis. The outcome is presented to senior management up to the Management Board to raise awareness on the highest level as it provides key insights into specific business vulnerabilities and contributes to the overall risk profile assessment of the bank. The group wide stress tests performed in 2018 indicated that the bank’s capitalization together with available mitigation measures allow it to reach the internally set stress exit level, the latter being above regulatory early intervention levels. A reverse stress test is performed annually in order to challenge our business model by determining scenarios which would cause us to become unviable. Such a reverse stress test is based on a hypothetical macroeconomic scenario enriched by idiosyncratic events based on the top risks monitored by each risk type. Comparing the hypothetical scenario resulting in the Bank’s non-viability to the current economic environment, we consider the probability of occurrence of such a hypothetical stress scenario as extremely low. Given this, we do not believe that our business continuity is at risk.

Deutsche Bank also took part in two major regulatory stress tests performed in 2018, i.e. the biannual European EBA stress test as well as the US-based CCAR stress test. In the US, DB USA Corporation received no Federal Reserve (FRB) objections to its quantitative capital plan given its ample capital and liquidity under the stressed scenario. The entity, however, received a qualitative objection to the CCAR 2018 capital plan for weaknesses in governance, model methodology, validation, data and infrastructure.

The EBA stress test exercise 2018 was based on the newly introduced IFRS 9 accounting framework and did not prescribe any pass/fail threshold for the projected CET 1 and Leverage ratios under the macroeconomic base and adverse scenario.

Stress testing framework of Deutsche Bank Group



Risk reporting and measurement systems

Our risk measurement systems support regulatory reporting and external disclosures, as well as internal management reporting across credit, market, liquidity, cross, business, operational and reputational risks. The risk infrastructure incorporates the relevant legal entities and business divisions and provides the basis for reporting on risk positions, capital adequacy and limit, threshold or target utilization to the relevant functions on a regular and ad-hoc basis. Established units within Finance and Risk assume responsibility for measurement, analysis and reporting of risk while promoting sufficient quality and integrity of risk-related data. Our risk management systems are reviewed by Group Audit following a risk-based audit approach.

Deutsche Bank's reporting is an integral part of Deutsche Bank's risk management approach and as such aligns with the organizational setup delivering consistent information on Group level and for material legal entities as well as breakdowns by risk types, business division and material business units.

The following principles guide Deutsche Bank's "risk reporting and monitoring" practices:

- Deutsche Bank monitors risks taken against risk appetite and risk-reward considerations on various levels across the Group, e.g. Group, business divisions, material business units, material legal entities, risk types, portfolio and counterparty levels.
- Risk reporting is required to be accurate, clear, useful and complete and must convey reconciled and validated risk data to communicate information in a concise manner to ensure, across material Financial and Non-Financial Risks, the bank's risk profile is easily and well understood.
- Senior risk committees, such as the Enterprise Risk Committee (ERC) and the Group Risk Committee (GRC), as well as the Management Board who are responsible for risk and capital management receive regular reporting (as well as ad-hoc reporting as required).
- Dedicated teams within Deutsche Bank proactively manage material Financial- and Non-Financial Risks and must ensure that required management information is in place to enable proactive identification and management of risks and avoid undue concentrations within a specific Risk Type and across Risks (Cross-Risk view).

In applying the previously mentioned principles, Deutsche Bank maintains a common basis for all risk reports and aims to minimize individual separate reporting efforts to allow Deutsche Bank to provide consistent information, which only differentiates by granularity and audience focus.

The Bank identifies a large number of metrics within our risk measurement systems which support regulatory reporting and external disclosures, as well as internal management reporting across risks and for material risk types. Deutsche Bank designates a subset of those as "Key Risk Metrics" that represent the most critical ones for which the Bank places an appetite, limit, threshold or target at Group level and / or are reported routinely to senior management for discussion or decision making. The identified Key Risk Metrics include Capital Adequacy and Liquidity metrics; further details can be found in the section "Key risk metrics".

While a large number of reports are used across the Bank, Deutsche Bank designates a subset of these as "Key Risk Reports" that are critical to support Deutsche Bank's Risk Management Framework through the provision of risk information to senior management and therefore enable the relevant governing bodies to monitor, steer and control the Bank's risk taking activities effectively.

The main reports on risk and capital management that are used to provide the central governance bodies with information relating to the Group risk profile are the following:

- The monthly Risk and Capital Profile (RCP) report is a Cross-Risk report, provides a comprehensive view of Deutsche Bank's risk profile and is used to inform the ERC, the GRC as well as the Management Board and subsequently the Risk Committee of the Supervisory Board. The RCP includes Risk Type specific and Business-Aligned overviews and Enterprise-wide risk topics. It also includes updates on Key Group Risk Appetite Metrics and other Key Portfolio Risk Type Control Metrics as well as updates on Key Risk Developments, highlighting areas of particular interest with updates on corresponding risk management strategies.
- An overview of our liquidity and solvency/leverage position is presented to the GRC and the Asset & Liability Committee (ALCO) by Group Capital Management and the Group Treasurer on a monthly basis. It comprises information on key metrics including CRR/CRD 4 Common Equity Tier 1 ratio, the CRR/CRD 4 Leverage Ratio, and MREL as well as an overview of our current funding and liquidity status, the liquidity stress test results and contingency measures.
- Group-wide macroeconomic stress tests are typically performed twice per quarter (or more frequently if required). They are reported to and discussed in the ERC and escalated to the GRC if deemed necessary. The stressed key performance indicators are benchmarked against the Group Risk Appetite thresholds.

While the above reports are used at a Group level to monitor and review the risk profile of Deutsche Bank holistically, there are other, supplementing standard and ad-hoc management reports that Risk Type or Business Aligned Risk Management functions use to monitor and control the risk profile.

Recovery and resolution planning

A number of jurisdictions such as the member states of the European Union, including Germany and the United Kingdom, as well as the United States, have enacted regulations requiring banks or competent regulatory authorities to develop recovery and resolution plans in order to be prepared for the management of a severe crisis up to a potential failure of a bank.

For the purpose of recovery planning, we maintain a Group recovery plan (Recovery Plan) which is updated and submitted to the European Central Bank (ECB) at least annually to reflect changes in the business and the regulatory requirements. The Recovery Plan prepares us to restore our financial strength and viability during an extreme stress situation, laying out a set of defined actions aimed to protect us, our customers and the markets and prevent a potential resolution event. In line with regulatory guidance, the Recovery Plan includes a wide range of countermeasures that are designed to mitigate different types of stress scenarios, originating from both idiosyncratic and market-wide events, that would threaten Deutsche Bank's capital and liquidity position. In addition, the Recovery Plan also outlines clear predefined governance and processes set up to support timely, efficient and effective monitoring, escalation, decision-making and implementation of recovery options if a crisis event occurs.

The Management Board oversees the development of the Recovery Plan and has set up a dedicated contingent governance process to manage financial stress events.

As set out in the Bank Recovery and Resolution Directive (BRRD), the German Recovery and Resolution Act (Sanierungs- und Abwicklungsgesetz, SAG) transforming the BRRD into German national legislation, and the Single Resolution Mechanism Regulation (the SRM Regulation), the Group resolution plan is prepared by the resolution authorities, rather than by the bank itself. We work closely with the Single Resolution Board (SRB) and the Bundesanstalt für Finanzdienstleistungsaufsicht ("BaFin") who establish the Group resolution plan for Deutsche Bank, which is currently based on a single point of entry (SPE) bail-in as the preferred resolution strategy. Under the SPE bail-in strategy, the parent entity Deutsche Bank AG would be recapitalized through a write-down and/or conversion to equity of capital instruments (Common Equity Tier 1, Additional Tier 1, Tier 2) and other eligible liabilities in order to stabilize the Group. Within one month after the application of the bail-in tool to recapitalize an institution, the BRRD (as implemented in the SAG) requires such institution to establish a business reorganization plan addressing the causes of failure and aiming to restore the institution's long-term viability.

The BRRD requires banks in EU member states to maintain minimum requirements for own funds and eligible liabilities (MREL) to make resolution credible by establishing sufficient loss absorption and recapitalization capacity. Apart from MREL-requirements, Deutsche Bank, as a global systemically important bank, will be subject to global minimum standards for Total Loss-Absorbing Capacity (TLAC), which set out strict requirements for the amount and eligibility of instruments to be maintained for bail-in purposes. In particular, TLAC instruments must be subordinated (including so-called senior "non-preferred" debt, but also in the form of regulatory capital instruments) to other senior liabilities. This ensures that a bail-in would be applied first to equity and TLAC instruments, which must be exhausted before a bail-in may affect other senior ("preferred") liabilities such as deposits, derivatives, debt instruments that are "structured" and senior preferred plain vanilla bonds.

In the United States, Deutsche Bank AG is required under Title I of the Dodd-Frank Wall Street Reform and Consumer Protection Act (the "Dodd-Frank Act"), as amended, and the implementing regulations therefor, to prepare and submit periodically to the Federal Reserve Board and the Federal Deposit Insurance Corporation ("FDIC") a plan for the orderly resolution of subsidiaries and operations in the event of future material financial distress or failure (the "U.S. Resolution Plan"). For foreign-based companies subject to these resolution planning requirements such as Deutsche Bank AG, the U.S. Resolution Plan relates only to subsidiaries, branches, agencies and businesses that are domiciled in or whose activities are carried out in whole or in material part in the United States.

Deutsche Bank AG filed its most recent U.S. Resolution Plan in July 2018 and received written regulatory feedback in December 2018. The Federal Reserve and FDIC found that Deutsche Bank's U.S. Resolution Plan had no deficiencies but identified one shortcoming in the plan, associated with governance mechanisms and related escalation triggers. Deutsche Bank is required to submit a response to its December 2018 feedback letter by April 5, 2019. Deutsche Bank's response will discuss the remediation of the shortcoming as well as enhancements of its resolution capabilities. Both the remediation of the shortcoming and enhancements must be completed prior to the submission of our next U.S. Resolution Plan, which is currently expected to be due on July 1, 2020.

Risk and Capital Management

Capital management

Our Treasury function manages solvency, capital adequacy, leverage and bail-in capacity ratios at Group level and locally in each region, as applicable. Treasury implements our capital strategy, which itself is developed by the Group Risk Committee and approved by the Management Board. Treasury, directly or through the Group Asset and Liability Committee, which has been established in the first half of the year 2018, manages, among other things, issuance and repurchase of shares and capital instruments, hedging of capital ratios against foreign exchange swings, setting capacities for key financial resources, design of shareholders' equity allocation, and regional capital planning. We are fully committed to maintaining our sound capitalization both from an economic and regulatory perspective. We continuously monitor and adjust our overall capital demand and supply in an effort to achieve an appropriate balance of the economic and regulatory considerations at all times and from all perspectives. These perspectives include book equity based on IFRS accounting standards, regulatory and economic capital as well as specific capital requirements from rating agencies.

Treasury manages the issuance and repurchase of capital instruments, namely Common Equity Tier 1, Additional Tier 1 and Tier 2 capital instruments as well as TLAC/MREL eligible debt instruments. Treasury constantly monitors the market for liability management trades. Such trades represent a countercyclical opportunity to create Common Equity Tier 1 capital by buying back our issuances below par.

Our core currencies are Euro, US Dollar, Chinese Renminbi and Pound Sterling. Treasury manages the sensitivity of our capital ratios against swings in core currencies. The capital invested into our foreign subsidiaries and branches in the other non-core currencies is largely hedged against foreign exchange swings. Treasury determines which currencies are to be hedged, develops suitable hedging strategies in close cooperation with Risk Management and finally executes these hedges.

Resource limit setting

Usage of key financial resources is influenced through the following governance processes and incentives.

Target resource capacities are reviewed in our annual strategic plan in line with our CET 1 and Leverage Ratio ambitions. In a quarterly process, the Group Asset and Liability Committee, which insofar as it replaced the Group Risk Committee as decision body, approves divisional resource limits for Total Capital Demand and leverage exposure that are based on the strategic plan but adjusted for market conditions and the short-term outlook. Limits are enforced through a close monitoring process and an excess charging mechanism.

Overall regulatory capital requirements are principally driven by either our CET 1 ratio (solvency) or leverage ratio (leverage) requirements, whichever is the more binding constraint. For the internal capital allocation, the combined contribution of each segment to the Group's Common Equity Tier 1 ratio, the Group's Leverage ratio and the Group's Capital Loss under Stress are weighted to reflect their relative importance and level of constraint to the Group. Contributions to the Common Equity Tier 1 ratio and the Leverage ratio are measured through Risk-Weighted Assets (RWA) and Leverage Ratio Exposure (LRE) assuming full implementation of CRR/CRD 4 rules. The Group's Capital Loss under Stress is a measure of the Group's overall economic risk exposure under a defined stress scenario. In our performance measurement, our methodology also applies different rates for the cost of equity for each of the business segments, reflecting in a more differentiated way the earnings volatility of the individual business models. This enables improved performance management and investment decisions.

Regional capital plans covering the capital needs of our branches and subsidiaries across the globe are prepared on an annual basis and presented to the Group Investment Committee. Most of our subsidiaries are subject to legal and regulatory capital requirements. In developing, implementing and testing our capital and liquidity, we fully take such legal and regulatory requirements into account.

Further, Treasury is represented on the Investment Committee of the largest Deutsche Bank pension fund which sets the investment guidelines for this fund. This representation is intended to ensure that pension assets are aligned with pension liabilities, thus protecting our capital base.

Risk Identification and Assessment

Our business activities generate credit risks, market risks, business risks, liquidity risks, cross risks, operational risks and reputational risks. We regularly identify risks to our business' and infrastructure's operations, also under stressed conditions, and assess the materiality of identified risks with respect to their severity and likelihood of materialization. The assessment of current risks is complemented by a view on emerging risks applying a forward-looking perspective. This risk identification and assessment process results in our risk inventory which captures the material risks across relevant businesses and entities. Regular updates to the risk inventory are reported to senior management together with the risk profile and inform our risk management processes.

Throughout 2018 we have strengthened the enterprise risk identification and assessment framework applicable to Deutsche Bank Group and key entities. The enhanced process involves both first line and second line input into risk identification and the assessment of the risks' materiality. This framework provides the basis, on which we can aggregate risks for the Group across businesses and entities. The resulting inventory of risks, after review and challenge by senior management, informs key risk management processes including the development of stress scenarios tailored to Deutsche Bank's risk profile, the calibration of risk appetite and the risk profile monitoring and reporting.

Credit Risk Management

Credit Risk framework

Credit Risk arises from all transactions where actual, contingent or potential claims against any counterparty, borrower, obligor or issuer (which we refer to collectively as "counterparties") exist, including those claims that we plan to distribute. These transactions are typically part of our non-trading lending activities (such as loans and contingent liabilities) as well as our direct trading activity with clients (such as OTC derivatives). These also include traded bonds and debt securities. Carrying values of equity investments are also disclosed in our Credit Risk section. We manage the respective positions within our market risk and credit risk frameworks.

Based on the annual risk identification and materiality assessment, Credit Risk is grouped into five categories, namely default/ migration risk, country risk, transaction/ settlement risk (exposure risk), mitigation (failure) risk and concentration risk.

- Default/Migration Risk is the risk that a counterparty defaults on its payment obligations or experiences material credit quality deterioration increasing the likelihood of a default.
- Country Risk is the risk that otherwise solvent and willing counterparties are unable to meet their obligations due to direct sovereign intervention or policies.
- Transaction/Settlement Risk (Exposure Risk) is the risk that arises from any existing, contingent or potential future positive exposure.
- Mitigation Risk is the risk of higher losses due to risk mitigation measures not performing as anticipated.
- Concentration Risk is the risk of an adverse development in a specific single counterparty, country, industry or product leading to a disproportionate deterioration in the risk profile of Deutsche Bank's credit exposures to that counterparty, country, industry or product.

We measure, manage/mitigate and report/monitor our credit risk using the following philosophy and principles:

- Our Credit Risk Management function is independent from our business divisions and in each of our divisions, credit decision standards, processes and principles are consistently applied.
- A key principle of credit risk management is client credit due diligence. Our client selection is achieved in collaboration with our business division counterparts who stand as a first line of defense.
- We aim to prevent undue concentration and tail-risks (large unexpected losses) by maintaining a diversified credit portfolio. Client, industry, country and product-specific concentrations are assessed and managed against our risk appetite.
- We maintain underwriting standards aiming to avoid large undue credit risk on a counterparty and portfolio level. In this regard we assume unsecured cash positions and actively use hedging for risk mitigation purposes. Additionally, we strive to secure our derivative portfolio through collateral agreements and may additionally hedge concentration risks to further mitigate credit risks from underlying market movements.
- Every new credit facility and every extension or material change of an existing credit facility (such as its tenor, collateral structure or major covenants) to any counterparty requires credit approval at the appropriate authority level. We assign credit approval authorities to individuals according to their qualifications, experience and training, and we review these periodically.

- We measure and consolidate all our credit exposures to each obligor across our consolidated Group on a global basis, in line with regulatory requirements.
- We manage credit exposures on the basis of the "one obligor principle" (as required under CRR Article 4(1)(39)), under which all facilities to a group of borrowers which are linked to each other (for example by one entity holding a majority of the voting rights or capital of another) are consolidated under one group.
- We have established within Credit Risk Management – where appropriate – specialized teams for deriving internal client ratings, analyzing and approving transactions, monitoring the portfolio or covering workout clients.
- Where required, we have established processes to report credit exposures at legal entity level.

Measuring Credit Risk

Credit Risk is measured by credit rating, regulatory and internal capital demand and key credit metrics mentioned below.

The credit rating is an essential part of the Bank's underwriting and credit process and builds the basis for risk appetite determination on a counterparty and portfolio level, credit decision and transaction pricing as well the determination of credit risk regulatory capital. Each counterparty must be rated and each rating has to be reviewed at least annually. Ongoing monitoring of counterparties helps keep ratings up-to-date. There must be no credit limit without a credit rating. For each credit rating the appropriate rating approach has to be applied and the derived credit rating has to be established in the relevant systems. Different rating approaches have been established to best reflect the specific characteristics of exposure classes, including central governments and central banks, institutions, corporates and retail.

Counterparties in our non-homogenous portfolios are rated by our independent Credit Risk Management function. Country risk related ratings are provided by ERM Risk Research.

Our rating analysis is based on a combination of qualitative and quantitative factors. When rating a counterparty we apply in-house assessment methodologies, scorecards and our 21-grade rating scale for evaluating the credit-worthiness of our counterparties.

Changes to existing credit models and introduction of new models are approved by the Regulatory Credit Risk Model Committee (RCRMC) chaired by the Head of CRM, as well as by the Head of Model Risk Management or delegate under a delegated authority, where appropriate, before the methodologies are used for credit decisions and capital calculation for the first time or before they are significantly changed. Proposals with high impact are recommended for approval to the Group Risk Committee. Regulatory approval may also be required. The methodology validation is performed independently of model development by Model Risk Management. The results of the regular validation processes as stipulated by internal policies have to be brought to the attention of the Regulatory Credit Risk Model Forum (RCRMF) and the RCRMC, even if the validation results do not lead to a change. The validation plan for rating methodologies is presented to RCRMF at the beginning of the calendar year.

For Postbank, and since May 2018 for DB PFK AG, responsibility for implementation, validation and monitoring of internal rating systems effectiveness is with Postbank's/DB PFK AG's Group Risk Controlling function and overseen by the model and validation committee, chaired by Postbank's/ DB PFK AG's Head of Group Risk Controlling. An independent model risk and validation function has been established in addition to the model risk development unit. All rating systems are subject to approval by Postbank's/ DB PFK AG's Bank Risk Committee chaired by the Chief Risk Officer. In addition, DB Group's IRBA Governance is extended to all DB PFK AG models as part of the merger and the granted capital waiver. Effectiveness of rating systems and rating results are reported to the Postbank/ DB PFK AG Management Board on a regular basis. Joint governance is ensured via a cross committee membership of Deutsche Bank senior managers joining Postbank/ DB PFK AG committees and vice versa.

We measure risk-weighted assets to determine the regulatory capital demand for credit risk using "advanced", "foundation" and "standard" approaches of which advanced and foundation are approved by our regulator.

The advanced Internal Ratings Based Approach (IRBA) is the most sophisticated approach available under the regulatory framework for credit risk and allows us to make use of our internal credit rating methodologies as well as internal estimates of specific further risk parameters. These methods and parameters represent long-used key components of the internal risk measurement and management process supporting the credit approval process, the economic capital and expected loss calculation and the internal monitoring and reporting of credit risk. The relevant parameters include the probability of default (PD), the loss given default (LGD) and the maturity (M) driving the regulatory risk-weight and the credit conversion factor (CCF) as part of the regulatory exposure at default (EAD) estimation. For the majority of derivative counterparty exposures as well as securities financing transactions (SFT), we make use of the internal model method (IMM) in accordance with CRR and SolvV to calculate EAD. For most of our internal rating systems more than seven years of historical information is available to assess these parameters. Our internal rating methodologies aim at point-in-time rather than a through-the-cycle rating, but in line with regulatory solvency requirements, they are calibrated based on long-term averages of observed default rates.

We apply the foundation IRBA to the majority of our remaining foundation IRBA eligible credit portfolios at Postbank/ DB PFK AG. The foundation IRBA is an approach available under the regulatory framework for credit risk allowing institutions to make use of their internal rating methodologies while using pre-defined regulatory values for all other risk parameters. Parameters subject to internal estimates include the PD while the LGD and the CCF are defined in the regulatory framework.

We apply the standardized approach to a subset of our credit risk exposures. The standardized approach measures credit risk either pursuant to fixed risk weights, which are predefined by the regulator, or through the application of external ratings. We assign certain credit exposures permanently to the standardized approach in accordance with Article 150 CRR. These are predominantly exposures to the Federal Republic of Germany and other German public sector entities as well as exposures to central governments of other European Member States that meet the required conditions. These exposures make up the majority of the exposures carried in the standardized approach and receive predominantly a risk weight of zero percent. For internal purposes, however, these exposures are subject to an internal credit assessment and fully integrated in the risk management and economic capital processes.

In addition to the above described regulatory capital demand, we determine the internal capital demand for credit risk via an economic capital model.

We calculate economic capital for the default risk, country risk and settlement risk as elements of credit risk. In line with our economic capital framework, economic capital for credit risk is set at a level to absorb with a probability of 99.9 % very severe aggregate unexpected losses within one year. Our economic capital for credit risk is derived from the loss distribution of a portfolio via Monte Carlo Simulation of correlated rating migrations. The loss distribution is modeled in two steps. First, individual credit exposures are specified based on parameters for the probability of default, exposure at default and loss given default. In a second step, the probability of joint defaults is modeled through the introduction of economic factors, which correspond to geographic regions and industries. The simulation of portfolio losses is then performed by an internally developed model, which takes rating migration and maturity effects into account. Effects due to wrong-way derivatives risk (i.e., the credit exposure of a derivative in the default case is higher than in non-default scenarios) are modeled by applying our own alpha factor when deriving the exposure at default for derivatives and securities financing transactions under the CRR. We allocate expected losses and economic capital derived from loss distributions down to transaction level to enable management on transaction, customer and business level.

Besides the credit rating which is the key credit risk metric we apply for managing our credit portfolio, including transaction approval and the setting of risk appetite, we establish internal limits and credit exposures under these limits. Credit limits set forth maximum credit exposures we are willing to assume over specified periods. In determining the credit limit for a counterparty, we consider the counterparty's credit quality by reference to our internal credit rating. Credit limits and credit exposures are both measured on a gross and net basis where net is derived by deducting hedges and certain collateral from respective gross figures. For derivatives, we look at current market values and the potential future exposure over the relevant time horizon which is based upon our legal agreements with the counterparty. We generally also take into consideration the risk-return characteristics of individual transactions and portfolios. Risk-Return metrics explain the development of client revenues as well as capital consumption. In this regard we also look at the client revenues in relation to the balance sheet consumption.

IFRS 9 impairment approach

We determine credit loss allowances in accordance with IFRS 9 as follows:

- Stage 1 reflects financial instruments where it is assumed that credit risk has not increased significantly after initial recognition.
- Stage 2 contains all financial assets, that are not defaulted, but have experienced a significant increase in credit risk since initial recognition.
- Stage 3 consists of financial assets of clients which are defaulted in accordance of Capital Requirements Regulation (CRR) under Art. 178. The Group defines these financial assets as impaired.
- Significant increase in Credit Risk is determined using quantitative and qualitative information based on the Group's historical experience, credit risk assessment and forward-looking information.
- POCI are Purchased or Originated Credit-Impaired financial assets in Stage 3 where at the time of initial recognition there is objective evidence of impairment.

The IFRS 9 impairment approach is an integral part of the Group's Credit Risk Management. The estimation of ECL (Expected Credit Loss) which is the basis for the Group's credit loss allowance is either done via the Group's ECL engine or by Credit Officers on a case-by-case basis. In both cases, the calculation takes place for each financial asset individually. The Group ECL engine is used to calculate the credit loss allowance for all financial assets in the homogeneous portfolio as well as for all financial assets in the non-homogenous portfolios in Stage 1 and Stage 2. The credit loss allowance for our financial assets in our non-homogeneous portfolio in Stage 3 is determined by Credit Officers on a case by case basis.

For a more detailed description of these expressions and the approach, please refer to Note 1 - Significant Accounting Policies and Critical Accounting Estimates of the Consolidated Financial Statements and in the following sections.

Stage Determination

At initial recognition, financial assets which are not POCI are reflected in Stage 1. If there is a significant increase in credit risk, the financial asset is transferred to Stage 2. Significant increase in credit risk is determined by using rating-related and process-related indicators. In contrast, the assignment of a financial instrument to Stage 3 is based on the status of the obligor being in default.

Rating-related indicators: Based on a dynamic change in counterparty PDs that is linked to all transactions with the counterparty, the Group compares lifetime PD at the reporting date, with expectations at the date of initial recognition. Based on historically observed migration behavior and available forward-looking information, an expected forward rating distribution is obtained. A quantile of this distribution, which is defined for each counterparty class, is chosen as the threshold. If the remaining lifetime PD of a transaction according to current expectations exceeds the PD of the relevant threshold rating, the financial asset is considered to be significantly increased. The thresholds used to determine Stage 2 indicators are determined using expert judgment and validated annually.

Process-related Indicators: Process-related indicators are derived via usage of existing risk management indicators, which allow the Group to identify whether the credit risk of financial assets has significantly increased. These include obligors being added mandatorily to a credit watchlist, being mandatorily transferred to workout status, payments being 30 days or more overdue or in forbearance.

On an ongoing basis, as long as the condition for one or more of the indicators is fulfilled and the financial asset is not recognized as defaulted, the asset will remain in Stage 2. If none of the indicator conditions is any longer fulfilled and the financial asset is not defaulted, the asset transfers back to Stage 1. In case of a default, the financial asset is allocated to Stage 3. In the case that a previously defaulted financial asset ceases to be classified as defaulted, it transfers back to Stage 1 or Stage 2.

Expected Lifetime

The expected lifetime of a financial asset is a key factor in determining the lifetime expected credit losses (LTECL). Lifetime expected credit losses represent default events over the expected life of a financial asset. The Group measures expected credit losses considering the risk of default over the maximum contractual period (including any borrower's extension options) over which it is exposed to credit risk.

Retail overdrafts, credit card facilities and certain corporate revolving facilities typically include both a loan and an undrawn commitment component. The expected lifetime of such on-demand facilities exceeds their contractual life as they are typically cancelled only when the Group becomes aware of an increase in credit risk. The expected lifetime is estimated by taking into consideration historical information and the Group's Credit Risk Management actions such as credit limit reductions and facility cancellation. Where such facilities are subject to an individual review by Credit Risk Management, the lifetime for calculating expected credit losses is 12 months. For facilities not subject to individual review by Credit Risk Management, Deutsche Bank applies a lifetime for calculating expected credit losses of 24 months.

Forward-looking information

Under IFRS 9, the allowance for credit losses is based on reasonable and supportable forward looking information obtainable without undue cost or effort, which takes into consideration past events, current conditions and forecasts of future economic conditions.

To incorporate forward-looking information into Deutsche Bank's allowance for credit losses, the Group uses two key elements:

– As its base scenario, the Group uses the macroeconomic forecasts provided by its research department dbResearch. These forecasts cover a number of macroeconomic variables (e.g., GDP, unemployment rates and interest rates) and reflect dbResearch's view as to the most likely development of those variables, typically over a two year period and updated quarterly.
– This base scenario is then translated into a multiple scenario analysis by leveraging the Group-wide stress test environment. This environment generates the impact of a multitude of economic scenarios and is used as basis for deriving multi-year PD curves for different rating and counterparty classes, which are applied in the calculation of expected credit losses and in the identification of significant deterioration in credit quality of financial assets as described previously.

The general use of forward-looking information, including macro-economic factors, as well as adjustments taking into account extraordinary factors, are monitored by the Group's Risk and Finance Credit Loss Provision Forum. In certain situations Credit Risk officers and senior management may have additional information in relation to specific portfolios to indicate that the distribution used by the stress testing framework is not appropriate. In such situations the Group would apply a judgmental overlay.

Basis of inputs and assumptions and the estimation techniques

The Group calculates expected credit losses for each financial asset individually. Similarly, the determination of the need to transfer between stages is made on an individual asset basis.

The Group uses three main components to measure ECL. These are PD, Loss Given Default (LGD) and Exposure at Default (EAD). The Group has leveraged existing parameters used for determination of capital demand under the Basel Internal Ratings Based Approach and internal risk management practices as much as possible to calculate ECL. These parameters are adjusted where necessary to comply with IFRS 9 requirements (e.g. use of point in time ratings and removal of downturn elements in the regulatory parameters). Incorporating forecasts of future economic conditions into the measurement of expected credit losses influences the allowance for credit losses for each stage. In order to calculate lifetime expected credit losses, the Group's calculation includes deriving the corresponding lifetime PDs from migration matrices that reflect economic forecasts.

The expected credit loss calculation for Stage 3 distinguishes between transactions in homogeneous and non-homogenous portfolios, and purchased or originated credit-impaired transactions. For transactions that are in Stage 3 and in a homogeneous portfolio, a similar approach as for Stage 1 and 2 transactions is taken. Since a Stage 3 transaction is defaulted, the probability of default is equal to 100 %. To incorporate the currently available information, the LGD parameters are modelled to be time-dependent, thus capture the time dependency of recovery expectation after default.

The estimation techniques for the input factors are described in more detail below.

The one-year PD for counterparties is derived from our internal rating systems. The Group assigns a PD to each relevant counterparty credit exposure based at the 21-grade master rating scale for all of our exposure.

The counterparty ratings assigned are derived based on internally developed rating models which specify consistent and distinct customer-relevant criteria and assign a rating grade based on a specific set of criteria as given for a certain customer. The set of criteria is generated from information sets relevant for the respective customer segments including general customer behavior, financial and external data. The methods in use range from statistical scoring models to expert-based models taking into account the relevant available quantitative and qualitative information. Expert-based models are usually applied for counterparties in the exposure classes "Central governments and central banks", "Institutions" and "Corporates" with the exception of those "Corporates" segments for which sufficient data basis is available for statistical scoring models. For the latter as well as for the retail segment statistical scoring or hybrid models combining both approaches are commonly used. Quantitative rating methodologies are developed based on applicable statistical modelling techniques, such as logistic regression.

One-year PDs are extended to multi-year PD curves using through-the-cycle (TTC) matrices and macroeconomic forecasts provided by Deutsche Bank Research that define a macroeconomic base scenario. Based on these macroeconomic forecasts, TTC matrices are transformed into point-in-time (PIT) rating migration matrices, typically for a two year period. The calculation of the PIT matrices is performed in the Group's stress testing environment, which provides a link between macroeconomic variables and the default and rating behavior of counterparties. The macroeconomic forecasts adjust the distribution of the respective macroeconomic factors and consequently, the rating migration matrices that define migration and default probabilities. The actual calculation is based on a Monte-Carlo simulation of multiple scenarios or on equivalent analytical techniques. Multi-year PDs and rating migration matrices are thus derived and applied to portfolios in scope for IFRS 9 which are categorized according to the following counterparty classes: retail Germany, retail Spain, retail Italy, financial institutions, midcaps, corporates, and sovereigns.

LGD is defined as the likely loss intensity in case of a counterparty default. It provides an estimation of the exposure that cannot be recovered in a default event and therefore captures the severity of a loss. Conceptually, LGD estimates are independent of a customer's probability of default. The LGD models ensure that the main drivers for losses (i.e., different levels and quality of collateralization and customer or product types or seniority of facility) are reflected in specific LGD factors. In our LGD models we assign collateral type specific LGD parameters to the collateralized exposure (collateral value after application of haircuts).

The EAD over the lifetime of a financial asset is modelled taking into account expected repayment profiles. We apply specific Credit Conversion Factors (CCFs) in order to calculate an EAD value. Conceptually, the EAD is defined as the expected amount of the credit exposure to a counterparty at the time of its default. In instances where a transaction involves an unused limit, a percentage share of this unused limit is added to the outstanding amount in order to appropriately reflect the expected outstanding amount in case of a counterparty default. This reflects the assumption that for commitments the utilization at the time of default might be higher than the utilization under IAS 39. When a transaction involves an additional contingent component (i.e., guarantees) a further percentage share is applied as part of the CCF model in order to estimate the amount of guarantees drawn in case of default. The calibrations of such parameters are based on statistical experience as well as internal historical data and consider counterparty and product type specifics.

Consideration of Collateralization in IFRS 9 Expected Credit Loss calculation

The LTECL engine projects the level of collateralization for each point in time in the life of a financial asset. For the reporting date, the engine uses the existing collateral distribution process applied for the DB's Economic Capital model. In this model, the liquidation value of each eligible collateral is allocated to relevant financial assets to distinguish between collateralized and uncollateralized parts of each exposure.

For personal collateral, the LTECL engine assumes that the relative level of collateralization remains stable over time. In that case the absolute exposure and collateral values decrease together over time. For impersonal collateral, the LTECL shall assume that the absolute collateral value remains constant. In that case, the collateralized part of the exposure increases over time and consequently the exposure will be fully collateralized at some point.

Certain financial guarantee contract are integral to the financial assets guaranteed. In such cases, the financial guarantee is considered as collateral for the financial asset and the benefit of the guarantee is used to mitigate the ECL of the guaranteed financial asset.

For further details on how we determine the liquidation value of our collaterals please refer to section "Managing and Mitigation of Credit Risk"

Model sensitivity

There are two main sources of ECL volatility for Stage 1 and 2 assets. Similarly to traditional risk measures like Risk Weighted Assets or Economic Capital, our ECL is sensitive to changes in the portfolio relevant for IFRS 9. Changes to the portfolio composition, the exposure profile or counterparty ratings, which are particularly important due to potential implications on stage determination, influence the level of ECL and thus the level of our Credit Loss Allowance.

In addition to portfolio changes, ECL is also impacted by macroeconomic forecasts. The selection process for the macroeconomic variables combines expert assessment and statistical tests and reflects the characteristics of the individual portfolios. As a consequence, ECL sensitivities to macroeconomic forecasts are portfolio-specific with GDP growth rates and unemployment rates in the Eurozone and the US as dominant factors.

Managing and mitigation of Credit Risk

Managing Credit Risk on counterparty level

Credit-related counterparties are principally allocated to credit officers within credit teams which are aligned to types of counterparty (such as financial institutions, corporates or private individuals) or economic area (e.g., emerging markets) and dedicated rating analyst teams. The individual credit officers have the relevant expertise and experience to manage the credit risks associated with these counterparties and their associated credit related transactions. For retail clients, credit decision making and credit monitoring is highly automated for efficiency reasons. Credit Risk Management has full oversight of the respective processes and tools used in the retail credit process. It is the responsibility of each credit officer to undertake ongoing credit monitoring for their allocated portfolio of counterparties. We also have procedures in place intended to identify at an early stage credit exposures for which there may be an increased risk of loss.

In instances where we have identified counterparties where there is a concern that the credit quality has deteriorated or appears likely to deteriorate to the point where they present a heightened risk of loss in default, the respective exposure is generally placed on a "watchlist". We aim to identify counterparties that, on the basis of the application of our risk management tools, demonstrate the likelihood of problems well in advance in order to effectively manage the credit exposure and maximize the recovery. The objective of this early warning system is to address potential problems while adequate options for action are still available. This early risk detection is a tenet of our credit culture and is intended to ensure that greater attention is paid to such exposures.

Credit limits are established by the Credit Risk Management function via the execution of assigned credit authorities. This also applies to settlement risk that must fall within limits pre-approved by Credit Risk Management considering risk appetite and in a manner that reflects expected settlement patterns for the subject counterparty. Credit approvals are documented by the signing of the credit report by the respective credit authority holders and retained for future reference.

Credit authority is generally assigned to individuals as personal credit authority according to the individual's professional qualification, experience and training. All assigned credit authorities are reviewed on a periodic basis to help ensure that they are commensurate with the individual performance of the authority holder.

Where an individual's personal authority is insufficient to establish required credit limits, the transaction is referred to a higher credit authority holder or where necessary to an appropriate credit committee. Where personal and committee authorities are insufficient to establish appropriate limits, the case is referred to the Management Board for approval.

Mitigation of Credit Risk on counterparty level

In addition to determining counterparty credit quality and our risk appetite, we also use various credit risk mitigation techniques to optimize credit exposure and reduce potential credit losses. Credit risk mitigants are applied in the following forms:

- Comprehensive and enforceable credit documentation with adequate terms and conditions.
- Collateral held as security to reduce losses by increasing the recovery of obligations.
- Risk transfers, which shift the loss arising from the probability of default risk of an obligor to a third party including hedging executed by our Credit Portfolio Strategies Group.
- Netting and collateral arrangements which reduce the credit exposure from derivatives and securities financing transactions (e.g. repo transactions).
- Hedging of derivatives counterparty risk including CVA, using primarily CDS contracts via our Counterparty Portfolio Management desk.

Collateral

We regularly agree on collateral to be received from or to be provided to customers in contracts that are subject to credit risk. Collateral is security in the form of an asset or third-party obligation that serves to mitigate the inherent risk of credit loss in an exposure, by either substituting the counterparty default risk or improving recoveries in the event of a default. While collateral can be an alternative source of repayment, it does not replace the necessity of high quality underwriting standards and a thorough assessment of the debt service ability of the counterparty in line with CRR Article 194 (9).

We segregate collateral received into the following two types:

- Financial and other collateral, which enables us to recover all or part of the outstanding exposure by liquidating the collateral asset provided, in cases where the counterparty is unable or unwilling to fulfill its primary obligations. Cash collateral, securities (equity, bonds), collateral assignments of other claims or inventory, equipment (i.e., plant, machinery and aircraft) and real estate typically fall into this category. All financial collateral is regularly, mostly daily, revalued and measured against the respective credit exposure. The value of other collateral, including real estate, is monitored based upon established processes that includes regular revaluations by internal and/or external experts.
- Guarantee collateral, which complements the counterparty's ability to fulfill its obligation under the legal contract and as such is provided by third parties. Letters of credit, insurance contracts, export credit insurance, guarantees, credit derivatives and risk participations typically fall into this category. Guarantee collateral with a non-investment grade rating of the guarantor is limited.

Our processes seek to ensure that the collateral we accept for risk mitigation purposes is of high quality. This includes seeking to have in place legally effective and enforceable documentation for realizable and measureable collateral assets which are evaluated regularly by dedicated teams. The assessment of the suitability of collateral for a specific transaction is part of the credit decision and must be undertaken in a conservative way, including collateral haircuts that are applied. We have collateral type specific haircuts in place which are regularly reviewed and approved. In this regard, we strive to avoid "wrong-way" risk characteristics where the counterparty's risk is positively correlated with the risk of deterioration in the collateral value. For guarantee collateral, the process for the analysis of the guarantor's creditworthiness is aligned to the credit assessment process for counterparties.

The valuation of collateral is considered under a liquidation scenario. Liquidation value is equal to the expected proceeds of collateral monetization / realization in a base case scenario, wherein a fair price is achieved through careful preparation and orderly liquidation of the collateral. Collateral can either move in value over time (dynamic value) or not (static value). The dynamic liquidation value generally includes a safety margin or haircut over realizable value to address liquidity and marketability aspects.

The Group assigns a liquidation value to eligible collateral, based on, among other things:

- the market value and / or lending value, notional amount or face value of a collateral as a starting point;
- the type of collateral; the currency mismatch, if any, between the secured exposure and the collateral; and a maturity mismatch, if any;
- the applicable legal environment or jurisdiction (onshore versus offshore collateral);
- the market liquidity and volatility in relation to agreed termination clauses;
- the correlation between the performance of the borrower and the value of the collateral, e.g., in the case of the pledge of a borrower's own shares or securities (in this case generally full correlation leads to no liquidation value);
- the quality of physical collateral and potential for litigation or environmental risks; and
- a determined collateral type specific haircut (0 – 100 %) reflecting collection risks (i.e. price risks over the average liquidation period and processing/utilization/sales cost) as specified in the respective policies.

Collateral haircut settings are typically based on available historic internal and/or external recovery data (expert opinions may also be used, where appropriate). They also incorporate a forward-looking component in the form of collection and valuation forecast provided by experts within Risk Management. When data is not sufficiently available or inconclusive, more conservative haircuts than otherwise used must be applied. Haircut settings are reviewed at least annually.

Risk transfers

Risk transfers to third parties form a key part of our overall risk management process and are executed in various forms, including outright sales, single name and portfolio hedging, and securitizations. Risk transfers are conducted by the respective business units and by our Credit Portfolio Strategies Group (CPSG), in accordance with specifically approved mandates.

CPSG manages the residual credit risk of loans and lending-related commitments of the institutional and corporate credit portfolio, the leveraged portfolio and the medium-sized German companies' portfolio within our CIB Division.

Acting as a central pricing reference, CPSG provides the businesses with an observed or derived capital market rate for loan applications; however, the decision of whether or not the business can enter into the credit risk remains exclusively with Credit Risk Management.

CPSG is concentrating on two primary objectives within the credit risk framework to enhance risk management discipline, improve returns and use capital more efficiently:

- to reduce single-name credit risk concentrations within the credit portfolio and
- to manage credit exposures by utilizing techniques including loan sales, securitization via collateralized loan obligations, sub-participations and single-name and portfolio credit default swaps.

Netting and collateral arrangements for derivatives and Securities Financing Transactions

Netting is applicable to both exchange traded derivatives and OTC derivatives. Netting is also applied to securities financing transactions (e.g. repurchase, securities lending and margin lending transactions) as far as documentation, structure and nature of the risk mitigation allow netting with the underlying credit risk.

All exchange traded derivatives are cleared through central counterparties (CCPs), which interpose themselves between the trading entities by becoming the counterparty to each of the entities. Where legally required or where available and to the extent agreed with our counterparties, we also use CCP clearing for our OTC derivative transactions.

The Dodd-Frank Act and related Commodity Futures Trading Commission (CFTC) rules introduced in 2013 mandatory CCP clearing in the United States for certain standardized OTC derivative transactions, including certain interest rate swaps and index credit default swaps. Additionally, the CFTC adopted final rules in 2016 that require additional interest rate swaps to be cleared on a phased implementation schedule that ended in October 2018. The European Regulation (EU) No 648/2012 on OTC Derivatives, Central Counterparties and Trade Repositories (EMIR) and the Commission Delegated Regulations (EU) 2015/2205, (EU) 2015/592 and (EU) 2016/1178 based thereupon introduced mandatory CCP clearing in the EU clearing for certain standardized OTC derivatives transactions. Mandatory CCP clearing in the EU began for certain interest rate derivatives on June 21, 2016 and for certain iTraxx-based credit derivatives and additional interest rate derivatives on February 9, 2017. Article 4 (2) of EMIR authorizes competent authorities to exempt intragroup transactions from mandatory CCP clearing, provided certain requirements, such as full consolidation of the intragroup transactions and the application of an appropriate centralized risk evaluation, measurement and control procedure are met. The Bank successfully applied for the clearing exemption for most of its regulatory-consolidated subsidiaries with intragroup derivatives, including e.g., Deutsche Bank Securities Inc. and Deutsche Bank Luxembourg S.A. As of December 31, 2018, the Bank is allowed to make use of has obtained intragroup exemptions from the EMIR clearing obligation for 68 bilateral intragroup relationships. The extent of the exemptions differs as not all entities enter into relevant transaction types subject to the clearing obligation. Of the 68 intragroup relationships, 17 are relationships where both entities are established in the Union (EU) for which a full exemption has been granted, and 51 are relationships where one is established in a third country ("Third Country Relationship"). Third Country Relationships required repeat applications for each new asset class being subject to the clearing obligation; the process took place in the course of 2017. Such repeat applications have been filed for 39 of the Third Country Relationships, with one of those entities having been liquidated in the meantime. Due to "Brexit", the status of some group entities changes from an EU entity to a third country entity in March 2019. There are two affected UK group entities, but we have not applied for any EMIR clearing exemption for those entities.

The rules and regulations of CCPs typically provide for the bilateral set off of all amounts payable on the same day and in the same currency ("payment netting") thereby reducing our settlement risk. Depending on the business model applied by the CCP, this payment netting applies either to all of our derivatives cleared by the CCP or at least to those that form part of the same class of derivatives. Many CCP rules and regulations also provide for the termination, close-out and netting of all cleared transactions upon the CCP's default ("close-out netting"), which reduced our credit risk. In our risk measurement and risk assessment processes we apply close-out netting only to the extent we have satisfied ourselves of the legal validity and enforceability of the relevant CCP's close-out netting provisions.

In order to reduce the credit risk resulting from OTC derivative transactions, where CCP clearing is not available, we regularly seek the execution of standard master agreements (such as master agreements for derivatives published by the International Swaps and Derivatives Association, Inc. (ISDA) or the German Master Agreement for Financial Derivative Transactions) with our counterparts. A master agreement allows for the close-out netting of rights and obligations arising under derivative transactions that have been entered into under such a master agreement upon the counterparty's default, resulting in a single net claim owed by or to the counterparty. For parts of the derivatives business (e.g., foreign exchange transactions) we also enter into master agreements under which payment netting applies in respect to transactions covered by such master agreements, reducing our settlement risk. In our risk measurement and risk assessment processes we apply close-out netting only to the extent we have satisfied ourselves of the legal validity and enforceability of the master agreement in all relevant jurisdictions.

Also, we enter into credit support annexes (CSA) to master agreements in order to further reduce our derivatives-related credit risk. These annexes generally provide risk mitigation through periodic, usually daily, margining of the covered exposure. The CSAs also provide for the right to terminate the related derivative transactions upon the counterparty's failure to honor a margin call. As with netting, when we believe the annex is enforceable, we reflect this in our exposure measurement.

The Dodd-Frank Act and CFTC rules thereunder, including CFTC rule § 23.504, as well as EMIR and Commission Delegated Regulation based thereupon, namely Commission Delegated Regulation (EU) 2016/2251, introduced the mandatory use of master agreements and related CSAs, which must be executed prior to or contemporaneously with entering into an uncleared OTC derivative transaction. Similar documentation requirements can be found in the U.S. margin rules adopted by U.S. prudential regulators. Under those rules, we are required to post and collect initial margin and variation margin for our derivatives exposures with other derivatives dealers, as well as with our counterparties that (a) are "financial end users," as that term is defined in the U.S. margin rules, and (b) have an average daily aggregate notional amount of uncleared swaps, uncleared security-based swaps, foreign exchange forwards and foreign exchange swaps exceeding U.S.$ 8 billion in June, July and August of the previous calendar year. The U.S. margin rules additionally require us to post and collect variation margin for our derivatives with other financial end user counterparties. These margin requirements are subject to a U.S.$ 50 million threshold for initial margin and a zero threshold for variation margin, with a combined U.S.$ 500,000 minimum transfer amount. The U.S. margin requirements have been in effect for large banks since September 2016, with additional variation margin requirements having come into effect March 1, 2017 and additional initial margin requirements phased in on an annual basis from September 2017 through September 2020.

Under Commission Delegated Regulation (EU) 2016/2251, which implements the EMIR margin requirements, the CSA must provide for daily valuation and daily variation margining based on a zero threshold and a minimum transfer amount of not more than € 500,000. For large derivative exposures exceeding € 8 billion, initial margin has to be posted as well. The variation margin requirements under EMIR apply as of March 1, 2017; the initial margin requirements will be subject to a staged phase-in until September 1, 2020. Under Article 31 of Commission Delegated Regulation (EU) 2016/2251, an EU party may decide to not exchange margin with counterparties in certain non-netting jurisdictions provided certain requirements are met. Pursuant to Article 11 (5) to (10) of EMIR competent authorities are authorized to exempt intragroup transactions from the margining obligation, provided certain requirements are met. While some of those requirements are the same as for the EMIR clearing exemptions (see above), there are additional requirements such as the absence of any current or foreseen practical or legal impediment to the prompt transfer of funds or repayment of liabilities between intragroup counterparties. The Bank plans to make use of this exemption. The Bank has successfully applied for the collateral exemption for some of its regulatory-consolidated subsidiaries with intragroup derivatives, including, e.g., Deutsche Bank Securities Inc. and Deutsche Bank Luxembourg S.A. As of December 31, 2018, the Bank has obtained intragroup exemptions from the EMIR collateral obligation for 14 bilateral intragroup relationships which are published under https://www.db.com/company/en/intra-group-exemptions--margining.htm. For further 10 bilateral intragroup relationships, the EMIR margining exemption may be used based on Article 11 (5) of EMIR, i.e. without the need for any application, because both entities are established in the same EU Member State. Due to "Brexit", the status of two intragroup entities will change from an EU entity to that of a third country entity on March 29, 2019. This may trigger the need for a new application the process of which is currently under discussion with the national competent authority.

Certain CSAs to master agreements provide for rating-dependent triggers, where additional collateral must be pledged if a party's rating is downgraded. We also enter into master agreements that provide for an additional termination event upon a party's rating downgrade. These downgrade provisions in CSAs and master agreements usually apply to both parties but in some agreements may apply to us only. We analyze and monitor our potential contingent payment obligations resulting from a rating downgrade in our stress testing approach for liquidity risk on an ongoing basis. For an assessment of the quantitative impact of a downgrading of our credit rating please refer to table "Stress Testing Results" in the section "Liquidity Risk".

Concentrations within Credit Risk mitigation

Concentrations within credit risk mitigations taken may occur if a number of guarantors and credit derivative providers with similar economic characteristics are engaged in comparable activities with changes in economic or industry conditions affecting their ability to meet contractual obligations. We use a range of tools and metrics to monitor our credit risk mitigating activities.

For more qualitative and quantitative details in relation to the application of credit risk mitigation and potential concentration effects please refer to the section “Maximum Exposure to Credit Risk”.

Managing Credit Risk on portfolio level

On a portfolio level, significant concentrations of credit risk could result from having material exposures to a number of counterparties with similar economic characteristics, or who are engaged in comparable activities, where these similarities may cause their ability to meet contractual obligations to be affected in the same manner by changes in economic or industry conditions.

Our portfolio management framework supports a comprehensive assessment of concentrations within our credit risk portfolio in order to keep concentrations within acceptable levels.

Industry risk management

To manage industry risk, we have grouped our corporate and financial institutions counterparties into various industry sub-portfolios. Portfolios are regularly reviewed with the frequency of review according to portfolio size and risk profile as well as risk developments. Larger / riskier portfolios are reviewed at least on an annual basis. Reviews highlight industry developments and risks to our credit portfolio, review cross-risk concentration risks, analyze the risk/reward profile of the portfolio and incorporate the results of an economic downside stress test. Finally, this analysis is used to define the credit strategies for the portfolio in question.

In our Industry Limit framework, thresholds are established for aggregate credit limits to counterparties within each industry sub-portfolio. Regular overviews are prepared for the Enterprise Risk Committee to discuss recent developments and to agree on actions where necessary

Beyond credit risk, our Industry Risk Framework comprises of Market Risk thresholds for Traded Credit Positions while key non-financial risks are closely monitored.

Country risk management

Avoiding undue concentrations from a regional perspective is also an integral part of our credit risk management framework. In order to achieve this, country risk limits are applied to Emerging Markets as well as selected Developed Markets countries (based on internal country risk ratings). Similar to industry risk, country portfolios are regularly reviewed with the frequency of review according to portfolio size and risk profile as well as risk developments. Larger / riskier portfolios are reviewed at least on an annual basis. These reviews assess key macroeconomic developments and outlook, review portfolio composition and cross-risk concentration risks and analyze the risk/reward profile of the portfolio. Based on this, thresholds and strategies are set for countries and, where relevant, for the region as a whole.

In our Country Limit framework, thresholds are established for counterparty credit risk exposures in a given country to manage the aggregated credit risk subject to country-specific economic and political events. These thresholds include exposures to entities incorporated locally as well as subsidiaries of foreign multinational corporations. Also, gap risk thresholds are set to control the risk of loss due to intra-country wrong-way risk exposure.

Beyond credit risk, our Country Risk Framework comprises Market Risk thresholds for trading positions in emerging markets that are based on the P&L impact of potential stressed market events on these positions. Furthermore we take into consideration treasury risk comprising thresholds for capital positions and intra-group funding exposure of Deutsche Bank entities in above countries given the transfer risk inherent in these cross-border positions. Key non-financial risks are closely monitored.

Our country risk ratings represent a key tool in our management of country risk. They are established by the independent ERM Risk Research function within Deutsche Bank and include:

- Sovereign rating: A measure of the probability of the sovereign defaulting on its foreign or local currency obligations.
- Transfer risk rating: A measure of the probability of a "transfer risk event", i.e., the risk that an otherwise solvent debtor is unable to meet its obligations due to inability to obtain foreign currency or to transfer assets as a result of direct sovereign intervention.
- Event risk rating: A measure of the probability of major disruptions in the market risk factors relating to a country (interest rates, credit spreads, etc.). Event risks are measured as part of our event risk scenarios, as described in the section "Market Risk Measurement" of this report.

All sovereign and transfer risk ratings are reviewed, at least on an annual basis.

Product/Asset class specific risk management

Complementary to our counterparty, industry and country risk approach, we focus on product/asset class specific risk concentrations and selectively set limits, thresholds or indicators where required for risk management purposes. Specific risk limits are set in particular if a concentration of transactions of a specific type might lead to significant losses under certain conditions. In this respect, correlated losses might result from disruptions of the functioning of financial markets, significant moves in market parameters to which the respective product is sensitive, macroeconomic default scenarios or other factors. Specific focus is put on concentrations of transactions with underwriting risks where we underwrite commitments with the intention to sell down or distribute part of the risk to third parties. These commitments include the undertaking to fund bank loans and to provide bridge loans for the issuance of public bonds. The risk is that we may not be successful in the distribution of the facilities, meaning that we would have to hold more of the underlying risk for longer periods of time than originally intended. These underwriting commitments are additionally exposed to market risk in the form of widening credit spreads. We dynamically hedge this credit spread risk to be within the approved market risk limit framework.

A major asset class, in which DB is active in underwriting, is leverage lending, which we mainly execute through our Leveraged Debt Capital Markets (LDCM) business unit. The business model is a fee-based ‚originate to distribute' approach based on the distribution of largely unfunded underwriting commitments into the capital market. The aforementioned risks regarding distribution and credit spread movement apply to this business unit, however, are managed under a range of specific notional as well as market risk limits. The latter require the business to also hedge its underwriting pipeline against market dislocations. The fee-based model of our LDCM business unit includes a restrictive approach to related credit exposures retained on DB's balance sheet, which results in low hold levels for individual clients leading to a diversified overall portfolio without any material concentration risks. The resulting longer-term on-balance sheet portfolio is also subject to a credit limit and hedging framework.

In addition to underwriting risk, we also focus on concentration of transactions with specific risk dynamics (including risk to commercial real estate and risk from securitization positions).

Furthermore, in our PCC businesses, we apply product-specific strategies setting our risk appetite for sufficiently homogeneous portfolios, such as the retail portfolios of mortgages and business and consumer finance products. In Wealth Management, target levels are set for global concentrations along products as well as based on type and liquidity of collateral.

Market Risk Management

Market Risk framework

The vast majority of our businesses are subject to market risk, defined as the potential for change in the market value of our trading and invested positions. Risk can arise from changes in interest rates, credit spreads, foreign exchange rates, equity prices, commodity prices and other relevant parameters, such as market volatility and market implied default probabilities.

One of the primary objectives of Market Risk Management, a part of our independent Risk function, is to ensure that our business units' risk exposure is within the approved appetite commensurate with its defined strategy. To achieve this objective, Market Risk Management works closely together with risk takers ("the business units") and other control and support groups.

We distinguish between three substantially different types of market risk:

- Trading market risk arises primarily through the market-making and client facilitation activities of the Corporate & Investment Bank Corporate Division. This involves taking positions in debt, equity, foreign exchange, other securities and commodities as well as in equivalent derivatives.
- Traded default risk arising from defaults and rating migrations relating to trading instruments.
- Nontrading market risk arises from market movements, primarily outside the activities of our trading units, in our banking book and from off-balance sheet items. This includes interest rate risk, credit spread risk, investment risk and foreign exchange risk as well as market risk arising from our pension schemes, guaranteed funds and equity compensation. Nontrading market risk also includes risk from the modeling of client deposits as well as savings and loan products.

Market Risk Management governance is designed and established to promote oversight of all market risks, effective decision-making and timely escalation to senior management.

Market Risk Management defines and implements a framework to systematically identify, assess, monitor and report our market risk. Market risk managers identify market risks through active portfolio analysis and engagement with the business units.

Market Risk measurement

We aim to accurately measure all types of market risks by a comprehensive set of risk metrics embedding accounting, economic and regulatory considerations.

We measure market risks by several internally developed key risk metrics and regulatory defined market risk approaches.

Trading Market Risk

Our primary mechanism to manage trading market risk is the application of our risk appetite framework of which the limit framework is a key component. Our Management Board, supported by Market Risk Management, sets group-wide value-at-risk, economic capital and portfolio stress testing limits for market risk in the trading book. Market Risk Management allocates this overall appetite to our Corporate Divisions and individual business units within them based on established and agreed business plans. We also have business aligned heads within Market Risk Management who establish business limits, by allocating the limit down to individual portfolios, geographical regions and types of market risks.

Value-at-risk, economic capital and portfolio stress testing limits are used for managing all types of market risk at an overall portfolio level. As an additional and important complementary tool for managing certain portfolios or risk types, Market Risk Management performs risk analysis and business specific stress testing. Limits are also set on sensitivity and concentration/liquidity, exposure, business-level stress testing and event risk scenarios, taking into consideration business plans and the risk vs return assessment.

Business units are responsible for adhering to the limits against which exposures are monitored and reported. The market risk limits set by Market Risk Management are monitored on a daily, weekly and monthly basis, dependent on the risk management tool being used.

Internally developed Market Risk Models

Value-at-Risk (VaR)

VaR is a quantitative measure of the potential loss (in value) of Fair Value positions due to market movements that should not be exceeded in a defined period of time and with a defined confidence level.

Our value-at-risk for the trading businesses is based on our own internal model. In October 1998, the German Banking Supervisory Authority (now the BaFin) approved our internal model for calculating the regulatory market risk capital for our general and specific market risks. Since then the model has been continually refined and approval has been maintained.

We calculate VaR using a 99 % confidence level and a one day holding period. This means we estimate there is a 1 in 100 chance that a mark-to-market loss from our trading positions will be at least as large as the reported VaR. For regulatory purposes, which include the calculation of our risk-weighted assets, the holding period is ten days.

We use one year of historical market data as input to calculate VaR. The calculation employs a Monte Carlo Simulation technique, and we assume that changes in risk factors follow a well-defined distribution, e.g. normal or non-normal (t, skew-t, Skew-Normal). To determine our aggregated VaR, we use observed correlations between the risk factors during this one year period.

Our VaR model is designed to take into account a comprehensive set of risk factors across all asset classes. Key risk factors are swap/government curves, index and issuer-specific credit curves, funding spreads, single equity and index prices, foreign exchange rates, commodity prices as well as their implied volatilities. To help ensure completeness in the risk coverage, second order risk factors, e.g. CDS index vs. constituent basis, money market basis, implied dividends, option-adjusted spreads and precious metals lease rates are considered in the VaR calculation.

For each business unit a separate VaR is calculated for each risk type, e.g. interest rate risk, credit spread risk, equity risk, foreign exchange risk and commodity risk. For each risk type this is achieved by deriving the sensitivities to the relevant risk type and then simulating changes in the associated risk drivers. “Diversification effect” reflects the fact that the total VaR on a given day will be lower than the sum of the VaR relating to the individual risk types. Simply adding the VaR figures of the individual risk types to arrive at an aggregate VaR would imply the assumption that the losses in all risk types occur simultaneously.

The model incorporates both linear and, especially for derivatives, nonlinear effects through a combination of sensitivity-based and revaluation approaches.

The VaR measure enables us to apply a consistent measure across all of our fair value businesses and products. It allows a comparison of risk in different businesses, and also provides a means of aggregating and netting positions within a portfolio to reflect correlations and offsets between different asset classes. Furthermore, it facilitates comparisons of our market risk both over time and against our daily trading results.

When using VaR estimates a number of considerations should be taken into account. These include:

- The use of historical market data may not be a good indicator of potential future events, particularly those that are extreme in nature. This “backward-looking” limitation can cause VaR to understate future potential losses (as in 2008), but can also cause it to be overstated.
- Assumptions concerning the distribution of changes in risk factors, and the correlation between different risk factors, may not hold true, particularly during market events that are extreme in nature. The one day holding period does not fully capture the market risk arising during periods of illiquidity, when positions cannot be closed out or hedged within one day.
- VaR does not indicate the potential loss beyond the 99th quantile.
- Intra-day risk is not reflected in the end of day VaR calculation.
- There may be risks in the trading or banking book that are partially or not captured by the VaR model.

We are committed to the ongoing development of our internal risk models, and we allocate substantial resources to reviewing, validating and improving them. Additionally, we have further developed and improved our process of systematically capturing and evaluating risks currently not captured in our value-at-risk model. An assessment is made to determine the level of materiality of these risks and material risks are prioritized for inclusion in our internal model. Risks not in value-at-risk are monitored and assessed on a regular basis through our Risk Not In VaR (RNIV) framework.

Stressed Value-at-Risk

Stressed Value-at-Risk (SVaR) calculates a stressed value-at-risk measure based on a one year period of significant market stress. We calculate a stressed value-at-risk measure using a 99 % confidence level. The holding period is one day for internal purposes and ten days for regulatory purposes. Our SVaR calculation utilizes the same systems, trade information and processes as those used for the calculation of value-at-risk. The only difference is that historical market data and observed correlations from a period of significant financial stress (i.e., characterized by high volatilities) is used as an input for the Monte Carlo Simulation.

The time window selection process for the stressed value-at-risk calculation is based on the identification of a time window characterized by high levels of volatility in the top value-at-risk contributors. The identified window is then further validated by comparing the SVaR results to neighboring windows using the complete Group portfolio.

Incremental Risk Charge

Incremental Risk Charge captures default and credit rating migration risks for credit-sensitive positions in the trading book. It applies to credit products over a one-year capital horizon at a 99.9 % confidence level, employing a constant position approach. We use a Monte Carlo Simulation for calculating incremental risk charge as the 99.9 % quantile of the portfolio loss distribution and for allocating contributory incremental risk charge to individual positions.

The model captures the default and migration risk in an accurate and consistent quantitative approach for all portfolios. Important parameters for the incremental risk charge calculation are exposures, recovery rates, maturity ratings with corresponding default and migration probabilities and parameters specifying issuer correlations.

Comprehensive Risk Measure

Comprehensive Risk Measure captures incremental risk for the corporate correlation trading portfolio calculated using an internal model subject to qualitative minimum requirements as well as stress testing requirements. The comprehensive risk measure for the correlation trading portfolio is based on our own internal model.

We calculate the comprehensive risk measure based on a Monte Carlo Simulation technique to a 99.9 % confidence level and a capital horizon of one year. Our model is applied to the eligible corporate correlation trading positions where typical products include collateralized debt obligations, nth-to-default credit default swaps, and commonly traded index- and single-name credit default swaps used to risk manage these corporate correlation products.

Trades subject to the comprehensive risk measure have to meet minimum liquidity standards to be eligible. The model incorporates concentrations of the portfolio and nonlinear effects via a full revaluation approach.

For regulatory reporting purposes, the comprehensive risk measure represents the higher of the internal model spot value at the reporting dates, their preceding 12-week average calculation, and the floor, where the floor is equal to 8 % of the equivalent capital charge under the standardized approach securitization framework. Since the first quarter of 2016, the CRM RWA calculations include two regulatory-prescribed add-ons which cater for (a) stressing the implied correlation within nth-to-default baskets and (b) any stress test loss in excess of the internal model spot value.

The internal model comprehensive risk measure was decommissioned in the fourth quarter of 2018 following regulatory approval. The small remaining exposures captured by this model are now covered by the incremental risk charge and the market risk standardized approach.

Market Risk Standardized Approach

Market Risk Management monitors exposures and concentrations for certain exposures under the specific Market Risk Standardized Approach (“MRSA”). We use the MRSA to determine the regulatory capital charge for the specific market risk of trading book securitizations.

We also use the MRSA to determine the regulatory capital charge for longevity risk as set out in CRR/CRD 4 regulations. Longevity risk is the risk of adverse changes in life expectancies resulting in a loss in value on longevity linked policies and transactions. For risk management purposes, stress testing and economic capital allocations are also used to monitor and manage longevity risk. Furthermore, certain types of investment funds require a capital charge under the MRSA. For risk management purposes, these positions are also included in our internal reporting framework.

Market Risk Stress Testing

Stress testing is a key risk management technique, which evaluates the potential effects of extreme market events and movements in individual risk factors. It is one of the core quantitative tools used to assess the market risk of Deutsche Bank's positions and complements VaR and Economic Capital. Market Risk Management performs several types of stress testing to capture the variety of risks (Portfolio Stress Testing, individual specific stress tests and Event Risk Scenarios) and also contributes to Group-wide stress testing. These stress tests cover a wide range of severities designed to test the earnings stability and capital adequacy of the bank.

Trading Market Risk Economic Capital (TMR EC)

Our trading market risk economic capital model-scaled Stressed VaR based EC (SVaR based EC) - comprises two core components, the "common risk" component covering risk drivers across all businesses and the "business-specific risk" component, which enriches the Common Risk via a suite of Business Specific Stress Tests (BSSTs). Both components are calibrated to historically observed severe market shocks. Common risk is calculated using a scaled version of the Regulatory SVaR framework while BSSTs are designed to capture more product/business-related bespoke risks (e.g. complex basis risks) as well as higher order risks not captured in the common risk component.

Traded Default Risk Economic Capital (TDR EC)

TDR EC captures the relevant credit exposures across our trading and fair value banking books. Trading book exposures are monitored by MRM via single name concentration and portfolio thresholds which are set based upon rating, size and liquidity. Single name concentration risk thresholds are set for two key metrics: Default Exposure, i.e., the P&L impact of an instantaneous default at the current recovery rate (RR), and bond equivalent Market Value (MV), i.e. default exposure at 0 % recovery. In order to capture diversification and concentration effects we perform a joint calculation for traded default risk economic capital and credit risk economic capital. Important parameters for the calculation of traded default risk are exposures, recovery rates and default probabilities as well as maturities. The probability of joint rating downgrades and defaults is determined by the default and rating correlations of the portfolio model. These correlations are specified through systematic factors that represent countries, geographical regions and industries.

Trading Market Risk Reporting

Market Risk Management reporting creates transparency on the risk profile and facilitates the understanding of core market risk drivers to all levels of the organization. The Management Board and Senior Governance Committees receive regular reporting, as well as ad hoc reporting as required, on market risk, regulatory capital and stress testing. Senior Risk Committees receive risk information at a number of frequencies, including weekly or monthly.

Additionally, Market Risk Management produces daily and weekly Market Risk specific reports and daily limit utilization reports for each business owner.

Regulatory prudent valuation of assets carried at fair value

Pursuant to Article 34 CRR institutions shall apply the prudent valuation requirements of Article 105 CRR to all assets measured at fair value and shall deduct from CET 1 capital the amount of any additional value adjustments necessary.

We determined the amount of the additional value adjustments based on the methodology defined in the Commission Delegated Regulation (EU) 2016/101.

As of December 31, 2018 the amount of the additional value adjustments was € 1.5 billion. The December 31, 2017 amount was € 1.2 billion. The increase was largely driven by methodology enhancements throughout the year, with remaining impacts from changes in underlying risk exposures and market data moves.

As of December 31, 2018 the reduction of the expected loss from subtracting the additional value adjustments was € 45 million, which partly mitigated the negative impact of the additional value adjustments on our CET 1 capital.

Nontrading Market Risk

Nontrading market risk arises primarily from outside the activities of our trading units, in our banking book and from certain off-balance sheet items. Significant market risk factors the Group is exposed to and are overseen by risk management groups in that area are:

- Interest rate risk (including risk from embedded optionality and changes in behavioral patterns for certain product types), credit spread risk, foreign exchange risk, equity risk (including investments in public and private equity as well as real estate, infrastructure and fund assets).
- Market risks from off-balance sheet items, such as pension schemes and guarantees, as well as structural foreign exchange risk and equity compensation risk.

Interest Rate Risk in the Banking Book

Interest rate risk in the banking book (IRRBB) is the current or prospective risk, to both the Group's capital and earnings, arising from movements in interest rates, which affect the Group's banking book exposures. This includes gap risk, which arises from the term structure of banking book instruments, basis risk, which describes the impact of relative changes in interest rates for financial instruments that are priced using different interest rate curves, as well as option risk, which arises from option derivative positions or from optional elements embedded in financial instruments.

The Group manages its IRRBB exposures using economic value as well as earnings based measures. Our Group Treasury division is mandated to manage the interest rate risk centrally, with Market Risk Management acting as an independent oversight function.

Economic value based measures look at the change in economic value of banking book assets, liabilities and off-balance sheet exposures resulting from interest rate movements, independent of the accounting treatment. Thereby the Group measures the change in Economic Value of Equity (ΔEVE) as the maximum decrease of the banking book economic value under the six standard scenarios defined by Basel Committee on Banking Supervision (BCBS) in addition to internal stress scenarios for risk steering purposes.

Earnings-based measures look at the expected change in Net Interest Income (NII), compared to a defined benchmark scenario, over a defined time horizon resulting from interest rate movements. Thereby the Group measures ΔNII as the maximum reduction in NII under the six standard scenarios defined by Basel Committee on Banking Supervision (BCBS) in addition to internal stress scenarios for risk steering purposes, compared to the Group's official capital planning, over a period of 12 months.

The Group employs mitigation techniques to immunize the interest rate risk arising from nontrading positions. The interest rate risk arising from nontrading asset and liability positions is managed through Treasury Pool Management, with the most notable exception of DB Privat- und Firmenkundenbank AG, where the interest rate risk is managed by a dedicated risk management function. The residual interest rate risk positions are hedged with Deutsche Bank's trading books within the CIB division. The treatment of interest rate risk in our trading portfolios and the application of the value-at-risk model is discussed in the "Trading Market Risk" section of this document.

Positions in our banking books as well as the hedges described in the aforementioned paragraph follow the accounting principles as detailed in the "Notes to the Consolidated Financial Statements" section of this document.

The Model Risk Management group performs independent validation of models used for IRRBB measurement in line with Deutsche Bank's group-wide risk governance framework.

The calculation of VaR and sensitivities of interest rate risk is performed daily, whereas the measurement and reporting of economic value interest rate and earnings risk is performed on a monthly basis. The Group generally uses the same metrics in its internal management systems as it applies for the disclosure in this report. This is applicable to both the methodology as well as the modelling assumptions used when calculating the metrics. The only notable exception is the usage of a steady (i.e. unchanged) rates scenario as benchmark for the ΔNII calculation in the public disclosures, whereas the internal quantitative risk appetite metric will use the Group's official capital planning curve.

Deutsche Bank's key modelling assumptions are applied to the positions in our PCB division and parts of our CIB Division. Those positions are subject to risk of changes in our client's behavior with regard to their deposits as well as loan products.

The Group manages the interest rate risk exposure of its Non-Maturity Deposits (NMDs) through a replicating portfolio approach to determine the average repricing maturity of the portfolio. For the purpose of constructing the replicating portfolio, the portfolio of NMDs is clustered by dimensions such as Business Unit, Currency, Product and Geographical Location. The main dimensions influencing the repricing maturity are elasticity of deposit rates to market interest rates, volatility of deposit balances and observable client behavior. For the reporting period the average repricing maturity assigned across all such replicating portfolio is 1.8 years and Deutsche Bank uses 15 years as the longest repricing maturity.

In the Loan and some of the Term deposit products Deutsche Bank considers early prepayment/withdrawal behavior of its customers. The parameters are based on historical observations, statistical analyses and expert assessments.

Furthermore, the Group generally calculates IRRBB related metrics in contractual currencies and aggregates the resulting metrics for reporting purposes. When calculating economic value based metrics the commercial margin is excluded to material parts.

Credit Spread Risk in the Banking Book

Deutsche Bank is exposed to credit spread risk of bonds held in the banking book, mainly as part of the Treasury Liquidity Reserves portfolio and in DB Privat- und Firmenkundenbank AG. This risk category is closely associated with interest rate risk in the banking book as changes in the perceived credit quality of individual instruments may result in fluctuations in spreads relative to underlying interest rates.

Foreign exchange risk

Foreign exchange risk arises from our nontrading asset and liability positions that are denominated in currencies other than the functional currency of the respective entity. The majority of this foreign exchange risk is transferred through internal hedges to trading books within Corporate & Investment Bank and is therefore reflected and managed via the value-at-risk figures in the trading books. The remaining foreign exchange risks that have not been transferred are mitigated through match funding the investment in the same currency, so that only residual risk remains in the portfolios. Small exceptions to above approach follow the general Market Risk Management monitoring and reporting process, as outlined for the trading portfolio.

The bulk of nontrading foreign exchange risk is related to unhedged structural foreign exchange exposure, mainly in our U.S., U.K. and China entities. Structural foreign exchange exposure arises from local capital (including retained earnings) held in the Group's consolidated subsidiaries and branches and from investments accounted for at equity. Change in foreign exchange rates of the underlying functional currencies are booked as Currency Translation Adjustments (CTA).

The primary objective for managing our structural foreign exchange exposure is to stabilize consolidated capital ratios from the effects of fluctuations in exchange rates. Therefore the exposure remains unhedged for a number of core currencies with considerable amounts of risk-weighted assets denominated in that currency in order to avoid volatility in the capital ratio for the specific entity and the Group as a whole.

Equity and investment risk

Nontrading equity risk arising predominantly from our non-consolidated investment holdings in the banking book and from our equity compensation plans.

Our non-consolidated investment holdings in the banking book are categorized into strategic and alternative investment assets. Strategic investments typically relate to acquisitions made to support our business franchise and are undertaken with a medium to long-term investment horizon. Alternative assets are comprised of principal investments and other non-strategic investment assets. Principal investments are direct investments in private equity (including leveraged buy-out fund commitments and equity bridge commitments), real estate (including mezzanine debt) and venture capital, undertaken for capital appreciation. In addition, principal investments are made in hedge funds and mutual funds in order to establish a track record for sale to external clients. Other non-strategic investment assets comprise assets recovered in the workout of distressed positions or other legacy investment assets in private equity and real estate of a non-strategic nature.

Pension risk

We are exposed to market risk from a number of defined benefit pension schemes for past and current employees. The ability of the pension schemes to meet the projected pension payments is maintained through investments and ongoing plan contributions. Market risk materializes due to a potential decline in the market value of the assets or an increase in the liability of each of the pension plans. Market Risk Management monitors and reports all market risks both on the asset and liability side of our defined benefit pension plans including interest rate risk, inflation risk, credit spread risk, equity risk and longevity risk. Overall, the Group seeks to minimize the impact of adverse market movements to key financial metric, with the primary objective on protecting the overall IFRS funded status, however in selected markets with the aim to balance competing key financial metrics. The investment managers manage the pension assets in line with investment mandates or guidelines as agreed with the pension plans' trustees and investment committees. For key defined benefit plans for which the Bank aims to protect the IFRS funded status, the Group applies a liability driven investment (LDI) approach. Risks from mismatches between fluctuations in the present value of the defined benefit obligations and plan assets due to capital market movements are minimized, subject to balancing relevant trade-offs. For pension plans where the LDI approach may impact other key financial metrics adversely, the Group deviates from this primary investment strategy, most notably for the German main plan where the investment strategy for assets has been adjusted since 2015 by reducing the interest rate & credit spread hedges. The development of the impact of this investment strategy is being closely monitored and regularly reviewed.

For details on our defined benefit pension obligation see Note 35 "Employee Benefits" to the consolidated financial statements.

Other risks

Market risks in our Asset Management business primarily result from principal guaranteed funds or accounts, but also from co-investments in our funds.

Nontrading Market Risk Economic Capital

Nontrading market risk economic capital is calculated either by applying the standard traded market risk EC methodology or through the use of non-traded market risk models that are specific to each risk class and which consider, among other factors, historically observed market moves, the liquidity of each asset class, and changes in client's behavior in relation to products with behavioral optionalities.

Operational risk management

Operational risk management framework

Operational risk means the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events, and includes legal risk. Operational risk excludes business and reputational risk. It forms a subset of the bank's non-financial risks, as does reputational risk.

The governance of our operational risks follows the bank's Three Lines of Defence (3LoD) approach to manage all of its risks, financial and non-financial. The 3LoD approach aims to protect the bank, its customers and shareholders against risk losses and resulting reputational damages. It seeks to ensure that all our operational risks are identified and covered, that accountabilities regarding the management of operational risks are clearly assigned and risks are taken on and managed in the best and long term interest of the bank. The 3LoD approach and its underlying principles, i.e., the full accountability of the First Line of Defence (1st LoD) to manage its own risks and the existence of an independent Second Line of Defence (2nd LoD) to oversee and challenge risk taking and risk management within the bank's defined risk appetite, apply to all levels of the organization including the Group-level, regions, countries, and legal entities.

Deutsche Bank's operational risk appetite sets out the amount of operational risk we are willing to accept as a consequence of doing business. We take on operational risks consciously, both strategically as well as in day-to-day business. While the bank may have no appetite for certain types of operational risk failures (such as serious violations of laws or regulations and misconduct), in other cases a certain amount of operational risk must be accepted if the bank is to achieve its business objectives. In case a residual risk is assessed to be outside our risk appetite, further risk reducing actions must be undertaken, including to further remediate risks, insure risks or cease business.

Non-Financial Risk Management (NFRM) is the risk function for the non-financial risk types of the bank, including operational risk, and owns the overarching Operational Risk Management Framework (ORMF).

The ORMF is a set of interrelated tools and processes that are used to identify, assess, measure, monitor and remediate operational risks. Its components have been designed to operate together to provide a comprehensive approach to managing the bank's most material operational risks. ORMF components include the setup of the 1st and 2nd LoD as well as roles and responsibilities for the operational risk management process and appropriate independent challenge, the Group's approach to setting operational risk appetite and adhering to it, the operational risk type and control taxonomies, the minimum standards for operational risk management processes including tools, independent governance, and the bank's operational risk capital model.

The bank established and follows three OR governance standards including core roles and their respective mandates for the management of operational risks:

Operational risk governance standard I: NFRM owns the ORMF and determines the sufficient level of operational risk capital.

- As the 2nd LoD control function, NFRM defines the bank's approach to operational risk appetite and monitors its adherence, breaches and consequences. It is the independent reviewer and challenger of the 1st LoD's risk and control assessments and risk management activities. NFRM provides the oversight of risk and control mitigation plans to return the bank's operational risk to its risk appetite where required. It also establishes and regularly reports the bank's operational risk profile and top risks.
- As the subject matter expert for operational risk, NFRM provides independent risk views to facilitate forward looking management of operational risks, actively engages with risk owners and facilitates the implementation of risk management and control standards across the bank.
- NFRM is to ensure that sufficient capital is held to underpin the bank's operational risks. NFRM is accountable for the design, implementation and maintenance of the approach to determine the adequate level of capital required for operational risk for recommendation to the Management Board. This includes the calculation and allocation of operational risk capital demand and expected loss under the Advanced Measurement Approach (AMA).

Operational risk governance standard II: Risk owners as the 1st LoD have full accountability for their operational risks and manage these against a defined risk specific appetite.

Risk owners are those roles in the bank that generate risks, whether financial or non-financial. As heads of business divisions and infrastructure functions they must determine the appropriate organizational structure to identify their organizations' operational risk profile, implement risk management and control standards within their organization, take business decisions on the mitigation or acceptance of operational risks within the risk appetite and establish and maintain primary controls.

Operational risk governance standard III: Risk Type Controllers ("RTCs") act as the 2nd LoD control functions for operational risks.

RTCs establish the framework and define risk appetite statements for the specific operational risk type they control. They monitor the risk type's profile against risk appetite and exercise a veto on risk appetite breaches. RTCs define the risk management and control standards and independently oversee and challenge risk owners' implementation of these standards as well as their risk-taking and management activities. RTCs establish independent operational risk governance and prepare aggregated risk type profile reporting. As risk type experts, RTCs define the risk type and its taxonomy and support and facilitate the implementation of risk management standards and processes in the 1st LoD. To maintain their independence, RTC roles are located only in infrastructure functions. Giving advice does not impact the independence of the RTC.

Organizational & governance structure

While the day-to-day management of operational risk is the primary responsibility of our business divisions and infrastructure functions as risk owners, NFRM oversees the Group-wide management of operational risks, identifies and reports risk concentrations, and promotes a consistent application of the ORMF across the bank. NFRM is part of the Group risk function which is headed by the Chief Risk Officer.

The Chief Risk Officer appoints the Head of NFRM who is accountable for the design, implementation and maintenance of an effective, efficient and regulatory compliant ORMF, including the operational risk capital model. The Head of NFRM monitors and challenges the ORMF's implementation and monitors overall risk levels against risk appetite.

The Non-Financial Risk Committee (NFRC), which is co-chaired by the Chief Risk Officer and the Chief Regulatory Officer, is responsible for the oversight, governance and coordination of the management of operational risk in the Group on behalf of the Management Board by establishing a cross-risk and holistic perspective of the key operational risks of the Group. Its decision-making and policy related authorities include the review, advice and management of all operational risk issues which may impact the risk profile of our business divisions and infrastructure functions. Several sub-fora with attendees from both, the 1st and 2nd LoDs support the NFRC to effectively fulfil its mandate. In addition to the Group level NFRC, business divisions have established 1st LoD governance fora for the oversight and management of operational risks on various levels of the organization.

Managing our operational risk

In order to manage the broad range of risk types underlying operational risk, our ORMF provides a set of tools and processes (as described below, e.g. for loss data collection or the risk & control assessment) that apply to all operational risk types. These enable us to determine our operational risk profile in comparison to our risk appetite for operational risk, to systematically identify operational risk themes and concentrations, and to define risk mitigating measures and priorities.

In 2018, we enhanced the ORMF and the management of operational risks by focusing on the further simplification of our risk management processes, and by promoting an active and continuous dialogue between the 1st and 2nd LoDs with the objective to make the management of operational risks more transparent, meaningful and embedded in day-to-day business decisions:

Loss data collection: In a timely manner, we collect, categorize and analyze data on internal (with a P&L impact ≥ €10.000) and relevant external operational risk events. Material events trigger clearly defined lessons learned and read-across analyses, which are performed in close collaboration between business partners, risk and infrastructure functions. Lessons learned reviews analyze the causes of significant operational risk events, identify their root causes, and document appropriate remediation actions to reduce the likelihood of their reoccurrence. Read across reviews take the conclusions of the lessons learned process and seek to analyze whether similar risks and control weaknesses identified in a lessons learned review exist in other areas of the bank, even if they have not yet resulted in problems. This allows preventative actions to be undertaken. The intensity of lessons learned and read across activities, the degree of embeddedness and collaboration between various functions working on these analyses has considerably increased through 2018.

We complement our operational risk profile by using a set of scenarios including relevant external cases provided by a public database and additional internal scenarios. We thereby systematically utilize information on external loss events occurring in the banking industry to prevent similar incidents from happening to us, for example through particular deep dive analyses or risk profile reviews.

The Risk & Control Assessment process (RCA) comprises of a series of bottom-up assessments of the risks generated by businesses and infrastructure functions (1st LoDs), the effectiveness of the controls in place to manage them, and the remediation actions required to bring the outsized risks back into risk appetite. This enables both the 1st and 2nd LoDs to have a clear view of the bank's material operational risks. Through 2018, we finalized the implementation of a workshop based approach that fosters close interaction between various relevant parties and started a pilot to integrate various existing assessment processes in NFRM, Compliance and AFC to simplify the process and enhance efficiency. We further enhanced the bank's control inventory and introduced a NFR consequence management framework with a clear workflow and consequence types. The non-financial risk type taxonomy was updated with clearer definitions and supporting guidance.

We regularly report and perform analyses on our top risks. Top risks are rated in terms of both the likelihood that they could occur and the impact on the bank should they do so. The reporting provides a forward-looking perspective on the impact of planned remediation and control enhancements. It also contains emerging risks and themes that have the potential to evolve as a top risk in future. Top risk reduction programs comprise the most significant risk reduction activities that are key to bringing our operational top risk themes back within risk appetite. In 2018, the reporting of top risks has been enhanced using a strategic reporting tool.

NFR appetite metrics are used to monitor the operational risk profile, including against the bank's defined risk appetite, and to alert the organization to impending problems in a timely fashion. In 2018, a new NFR appetite approach was introduced, comprising enhanced metrics, an updated Group risk appetite monitor and a deeper embedding at divisional and business unit level.

Operational risk type frameworks

The ORMF, which provides the overarching set of standards, tools and processes that apply to the management of all risk types underlying operational risk, is complemented by the operational risk type frameworks, risk management and control standards and tools set up by the respective risk type controllers for the operational risk types they control. These include the following with respect to the following risk types:

- The Compliance department performs an independent 2nd level control function that protects the bank's license to operate by promoting and enforcing compliance with the law and driving a culture of compliance and ethical conduct in the bank. The Compliance department assists the businesses and working with other infrastructure functions and regulators to establish and maintain a risk-based approach to the management of the bank's compliance risks in accordance with the bank's risk appetite and to help the bank detect, mitigate and prevent breaches of laws and regulations. The Compliance department performs the following principal activities: regulatory engagement and management collaborating with government & regulatory affairs; acting as a trusted advisor; and identifying, assessing, mitigating, monitoring and reporting on compliance risk. The results of these assessments are regularly reported to the Management Board and Supervisory Board.
- Financial crime risks are managed by our AFC function via maintenance and development of a dedicated program. The AFC program is based on regulatory and supervisory requirements. AFC has defined roles and responsibilities and established dedicated functions for the identification and management of financial crime risks resulting from money laundering, terrorism financing, non-compliance with sanctions and embargoes as well as other criminal activities including fraud, bribery and corruption and other crimes. AFC assures further update of its strategy on financial crime prevention via regular development of internal policies processes and controls, institution-specific risk assessment and staff training.
- Legal (incl. group governance) is an infrastructure function, mandated to provide legal advice both to the Management Board as well as to the business divisions and infrastructure functions and to support the Management Board in setting up and guarding DB's governance framework and manage the bank's legal and governance risk. This includes in particular but without limitation:
    - Advising the Management Board and Supervisory Board on legal aspects of their activities
    - Advising all Deutsche Bank units on adherence to legal and regulatory requirements in relation to all activities
    - Managing Deutsche Bank Group's legal relations with third parties, or between Group entities
    - Supporting other units in managing Deutsche Bank Group's interactions with regulatory authorities
    - Engaging and managing external lawyers used by Deutsche Bank Group
    - Managing Deutsche Bank Group's litigation and contentious regulatory matters, (incl. contentious HR matters), and managing Deutsche Bank Group's response to external regulatory investigations
    - Advising on legal aspects of internal investigations
    - Setting the global governance framework for Deutsche Bank, facilitate its cross-unit application and assess the implementation
    - Developing and safeguarding efficient corporate governance structures suitable to support efficient decision-making, to align risk and accountability on the basis of clear and consistent roles and responsibilities
    - Maintaining Deutsche Bank Group's framework for policies and procedures and serve as guardian for Group policies and procedures
    - Ensuring appropriate quality assurance around all of the above
- NFRM RTC is risk type controller for a number of operational risks. Its mandate includes controls over transaction processing activities, as well as infrastructure risks to prevent technology or process disruption, maintain the confidentiality, integrity and availability of data, records and information security, and ensure businesses have robust plans in place to recover critical business processes and functions in the event of disruption from technical or building outage, or the effects of cyber-attack or natural disaster as well as any physical security or safety risk. NFRM RTC also manages the risks arising from the bank's internal and external vendor engagements via the provision of a comprehensive vendor risk management framework.

Measuring our operational risks

We calculate and measure the regulatory and economic capital requirements for operational risk using the AMA methodology. Our AMA capital calculation is based upon the loss distribution approach. Gross losses from historical internal and external loss data (Operational Riskdata eXchange Association consortium data) and external scenarios from a public database (IBM OpData) complemented by internal scenario data are used to estimate the risk profile (i.e., a loss frequency and a loss severity distribution). Our loss distribution approach model includes conservatism by recognizing losses on events that arise over multiple years as single events in our historical loss profile.

Within the loss distribution approach model, the frequency and severity distributions are combined in a Monte Carlo simulation to generate potential losses over a one year time horizon. Finally, the risk mitigating benefits of insurance are applied to each loss generated in the Monte Carlo simulation. Correlation and diversification benefits are applied to the net losses in a manner compatible with regulatory requirements to arrive at a net loss distribution at Group level, covering expected and unexpected losses. Capital is then allocated to each of the business divisions after considering qualitative adjustments and expected loss.

The regulatory capital requirement for operational risk is derived from the 99.9 % percentile. Since Q4 2017, the economic capital is also set at 99.9 % percentile, see the section “Internal Capital Adequacy”. Both regulatory and economic capital requirements are calculated for a time horizon of one year.

The regulatory and economic capital demand calculations are performed on a quarterly basis. NFRM aims to ensure that for the approach for capital demand quantification appropriate development, validation and change governance processes are in place, whereby the validation is performed by an independent validation function and in line with the Group’s model risk management process.

Drivers for operational risk capital development

In 2018, our total operational risk losses further decreased but continued to be predominantly driven by losses and provisions arising from civil litigation and regulatory enforcement. Such losses still make up 67 % of operational risk losses and account for the majority of operational risk regulatory and economic capital demand, which is more heavily reliant on our long-term loss history. For a description of our current legal and regulatory proceedings, please see section “Current Individual Proceedings” in Note 29 “Provisions” to the consolidated financial statements. The operational risk losses from civil litigation and regulatory enforcement decreased by € 380 million or 67 % while our non-legal operational risk losses were € 86 million or 48 % lower compared to 2017.

In view of the relevance of legal risks within our operational risk profile, we dedicate specific attention to the management and measurement of our open civil litigation and regulatory enforcement matters where the bank relies both on information from internal as well as external data sources to consider developments in legal matters that affect the bank specifically but also the banking industry as a whole. Reflecting the multi-year nature of legal proceedings the measurement of these risks furthermore takes into account changing levels of certainty by capturing the risks at various stages throughout the lifecycle of a legal matter.

Conceptually, the bank measures operational risk including legal risk by determining the maximum loss that will not be exceeded with a given probability. This maximum loss amount includes a component that due to the IFRS criteria is reflected in our financial statements and a component that is expressed as regulatory or economic capital demand beyond the amount reflected as provisions within our financial statements.

The legal losses which the bank expects with a likelihood of more than 50 % are already reflected in our IFRS group financial statements. These losses include net changes in provisions for existing and new cases in a specific period where the loss is deemed probable and is reliably measurable in accordance with IAS 37. The development of our legal provisions for civil litigations and regulatory enforcement is outlined in detail in Note 29 “Provisions” to the consolidated financial statements.

Uncertain legal losses which are not reflected in our financial statements as provisions because they do not meet the recognition criteria under IAS 37 are expressed as “regulatory or economic capital demand”.

To quantify the litigation losses in the AMA model the bank takes into account historic losses, provisions, contingent liabilities and legal forecasts. Legal forecasts are generally comprised of ranges of potential losses from legal matters that are not deemed probable but are reasonably possible. Reasonably possible losses may result from ongoing and new legal matters which are reviewed at least quarterly by the attorneys handling the legal matters.

We include the legal forecasts in the “relevant loss data” used in our AMA model. Hereby the projection range of the legal forecasts is not restricted to the one year capital time horizon but goes beyond and conservatively assumes early settlement of the underlying losses in the reporting period - thus considering the multi-year nature of legal matters.

Liquidity Risk Management

Liquidity risk is the risk arising from our potential inability to meet all payment obligations when they come due or only being able to meet these obligations at excessive costs. The objective of the Group's liquidity risk management framework is to ensure that the Group can fulfill its payment obligations at all times and can manage liquidity and funding risks within its risk appetite. The framework considers relevant and significant drivers of liquidity risk, whether on-balance sheet or off-balance sheet.

Liquidity Risk Management framework

In accordance with the ECB's Supervisory Review and Evaluation Process (SREP), Deutsche Bank has implemented an annual Internal Liquidity Adequacy Assessment Process (ILAAP), which is reviewed and approved by the Management Board. The ILAAP provides comprehensive documentation of the Bank's Liquidity Risk Management framework, including: identifying the key liquidity and funding risks to which the Group is exposed; describing how these risks are identified, monitored and measured and describing the techniques and resources used to manage and mitigate these risks.

The Management Board defines the liquidity and funding risk strategy for the Bank, as well as the risk appetite, based on recommendations made by the Group Risk Committee (GRC). At least annually the Management Board reviews and approves the risk appetite which is applied to the Group to measure and control liquidity risk as well as our long-term funding and issuance plan.

Treasury is mandated to manage the overall liquidity and funding position of the Bank, with Liquidity Risk Management (LRM) acting as an independent control function, responsible for reviewing the liquidity risk framework, proposing the risk appetite to GRC and the validation of Liquidity Risk models which are developed by Treasury, to measure and manage the Group's liquidity risk profile.

Treasury manages liquidity and funding, in accordance with the Management Board-approved risk appetite across a range of relevant metrics, and implements a number of tools to monitor these and ensure compliance. In addition, Treasury works closely in conjunction with LRM and the business, to analyze and understand the underlying liquidity characteristics of the business portfolios. These parties are engaged in regular and frequent dialogue to understand changes in the Bank's position arising from business activities and market circumstances. Dedicated business targets are allocated to ensure the Group operates within its overall liquidity and funding appetite.

The Management Board is informed of performance against the risk appetite metrics, via a weekly Liquidity Dashboard. As part of the annual strategic planning process, we project the development of the key liquidity and funding metrics based on the underlying business plans to ensure that the plan is in compliance with our risk appetite.

Capital Markets Issuance

Deutsche Bank has a wide range of funding sources, including retail and institutional deposits, unsecured and secured wholesale funding and debt issuance in the capital markets. Debt issuance, encompassing senior unsecured bonds, covered bonds as well as capital securities, is a key source of term funding for the Bank and is managed directly by Treasury. At least once a year Treasury submits an annual long-term Funding Plan to the GRC for recommendation and then to the Management Board for approval. This plan is driven by global and local funding and liquidity requirements based on expected business development. Our capital markets issuance portfolio is dynamically managed through our yearly issuance plans to avoid excessive maturity concentrations.

Short-term liquidity and wholesale funding

Deutsche Bank tracks all contractual cash flows from wholesale funding sources, on a daily basis, over a 12-month horizon. For this purpose, we consider wholesale funding to include unsecured liabilities raised primarily by Treasury Pool Management, as well as secured liabilities raised by our Corporate & Investment Bank Division. Our wholesale funding counterparties typically include corporates, banks and other financial institutions, governments and sovereigns.

The Group has implemented a set of Management Board-approved limits to restrict the Bank's exposure to wholesale counterparties, which have historically shown to be the most susceptible to market stress. The wholesale funding limits are monitored daily, and apply to the total combined currency amount of all wholesale funding currently outstanding, both secured and unsecured with specific tenor limits covering the first 8 weeks. Our Liquidity Reserves are the primary mitigant against potential stress in the short-term.

The tables in section "Liquidity Risk Exposure: Funding Diversification" show the contractual maturity of our short-term wholesale funding and capital markets issuance.

Liquidity stress testing and scenario analysis

Global liquidity stress testing and scenario analysis is one of the key tools for measuring liquidity risk and evaluating the Group's short-term liquidity position within the liquidity framework. It complements the daily operational cash management process. The long-term liquidity strategy based on contractual and behavioral modelled cash flow information is represented by the Funding Matrix.

Our global liquidity stress testing process is managed by Treasury in accordance with the Management Board approved risk appetite. Treasury is responsible for the design of the overall methodology, the choice of liquidity risk drivers and the determination of appropriate assumptions (parameters) to translate input data into model results. Liquidity Risk Management is responsible for the definition of the stress scenarios and the independent validation of liquidity risk models. Liquidity and Treasury Reporting & Analysis (LTRA) is responsible for implementing these methodologies in conjunction with Treasury, LRM and IT as well as for the stress test calculation.

We use stress testing and scenario analysis to evaluate the impact of sudden and severe stress events on our liquidity position. The scenarios we apply are based on systemic historic events, such as the 2008 financial markets crisis as well as idiosyncratic events.

Deutsche Bank has selected four scenarios to calculate the Group's stressed Net Liquidity Position ("sNLP"). These scenarios capture the historical experience of Deutsche Bank during periods of idiosyncratic and/or market-wide stress and are assumed to be both plausible and sufficiently severe as to materially impact the Group's liquidity position. A global market crisis, for example, is covered by a specific stress scenario (systemic market risk) that models the potential consequences observed during the financial crisis of 2008. Additionally, we have introduced regional market stress scenarios. Under each of the scenarios we assume a high degree of maturing loans to non-wholesale customers is rolled-over, to support our business franchise. Wholesale funding, from the most risk sensitive counterparties (including banks and money-market mutual funds) is assumed to roll-off at contractual maturity or even be bought back, in the acute phase of the stress.

In addition, we include the potential funding requirements from contingent liquidity risks which might arise, including credit facilities, increased collateral requirements under derivative agreements, and outflows from deposits with a contractual rating linked trigger.

We then model the actions we would take to counterbalance the outflows incurred. Countermeasures include utilizing the Liquidity Reserve and generating liquidity from unencumbered, marketable assets.

Stress testing is conducted at a global level and for defined individual legal entities. In addition to the consolidated currency stress test, stress tests for material currencies (EUR, USD and GBP) are performed. We review our stress-testing assumptions on a regular basis and have made further enhancements to the methodology and severity of certain parameters through the course of 2018.

On a daily basis, we run the liquidity stress test over an eight-week horizon, which we consider the most critical time span in a liquidity crisis, and apply the relevant stress assumptions to risk drivers from on-balance sheet and off-balance sheet products. Beyond the eight week time horizon, we analyze the impact of a more prolonged stress period, extending to twelve months. This stress testing analysis is performed on a daily basis.

The risk appetite to maintain a surplus of at least € 10 billion throughout the 8 week stress horizon under all scenarios for our daily consolidated currency stress test remained at this level also for 2018.

The tables in section "Liquidity Risk Exposure: Stress Testing and Scenario Analysis" show the results of our internal global liquidity stress test under the various different scenarios.

Liquidity Coverage Ratio

In addition to our internal stress test result, the Group has a Management Board-approved risk appetite for the Liquidity Coverage Ratio (LCR). The LCR is intended to promote the short-term resilience of a bank's liquidity risk profile over a 30 day stress scenario. The ratio is defined as the amount of High Quality Liquid Assets (HQLA) that could be used to raise liquidity in a stressed scenario, measured against the total volume of net cash outflows, arising from both contractual and modelled exposures.

This requirement has been implemented into European law, via the Commission Delegated Regulation (EU) 2015/61, adopted in October 2014. Compliance with the LCR was required in the EU from October 1, 2015.

The LCR complements the internal stress testing framework. By maintaining a ratio in excess of minimum regulatory requirements, the LCR seeks to ensure that the Group holds adequate liquidity resources to mitigate a short-term liquidity stress.

In November 2018, the Bank has set its internal risk appetite more conservative by 3% in order to maintain a LCR ratio of at least 113%, effective from 1st of January 2019 onwards.

Key differences between the internal liquidity stress test and LCR include the time horizon (eight weeks versus 30 days), classification and haircut differences between Liquidity Reserves and the LCR HQLA, outflow rates for various categories of funding, and inflow assumption for various assets (for example, loan repayments). Our liquidity stress test also includes outflows related to intraday liquidity assumptions, which are not explicitly captured in the LCR.

Funding Risk Management

Structural funding

Deutsche Bank's primary tool for monitoring and managing longer term funding risk is the Funding Matrix. The Funding Matrix assesses the Group's structural funding profile for the greater than one year time horizon. To produce the Funding Matrix, all funding-relevant assets and liabilities are mapped into time buckets corresponding to their contractual or modeled maturities. This allows the Group to identify expected excesses and shortfalls in term liabilities over assets in each time bucket, facilitating the management of potential liquidity exposures.

The liquidity profile is based on contractual cash flow information. If the contractual maturity profile of a product does not adequately reflect the liquidity profile, it is replaced by modeling assumptions. Short-term balance sheet items (<1yr) or matched funded structures (asset and liabilities directly matched with no liquidity risk) can be excluded from the term analysis.

The bottom-up assessment by individual business line is combined with a top-down reconciliation against the Group's IFRS balance sheet. From the cumulative term profile of assets and liabilities beyond 1 year, long-funded surpluses or short-funded gaps in the Group's maturity structure can be identified. The cumulative profile is thereby built up starting from the greater than 10 year bucket down to the greater than 1 year bucket.

The strategic liquidity planning process, which incorporates the development of funding supply and demand across business units, together with the bank's targeted key liquidity and funding metrics, provides the key input parameter for our annual capital markets issuance plan. Upon approval by the Management Board the capital markets issuance plan establishes issuance targets for securities by tenor, volume, currency and instrument. We also maintain a stand-alone U.S. dollar and GBP funding matrix which limits the maximum short position in any time bucket (more than 1 year to more than 10 years) to € 10 billion and € 5 billion respectively. This supplements the risk appetite for our global funding matrix which requires us to maintain a positive funding position in any time bucket (more than 1 year to more than 10 years).

Net Stable Funding Ratio

The Net Stable Funding Ratio (NSFR) was proposed as part of Basel 3, as the regulatory metric for assessing a bank's structural funding profile. The NSFR is intended to reduce medium to long-term funding risks by requiring banks to maintain a stable funding profile in relation to their on- and off-balance sheet activities. The ratio is defined as the amount of Available Stable Funding (the portion of capital and liabilities expected to be a stable source of funding), relative to the amount of Required Stable Funding (a function of the liquidity characteristics of various assets held).

In the EU, the Commission published a legislative proposal to amend the CRR. The proposal defines, inter alia, a mandatory quantitative NSFR requirement which would apply two years after the proposal comes into force. The proposal remains subject to change in the EU legislative process. Therefore, for banks domiciled in the EU, the final definition of the ratio and associated implementation timeframe has not yet been confirmed.

We are currently in the process of assessing the impacts of the NSFR, and would expect to formally embed this metric within our overall liquidity risk management framework, once the relevant rules and timing within the EU have been finally determined.

Funding Diversification

Diversification of our funding profile in terms of investor types, regions, products and instruments is an important element of our liquidity risk management framework. Our most stable funding sources come from capital markets and equity, retail, and transaction banking clients. Other customer deposits and secured funding and short positions are additional sources of funding. Unsecured wholesale funding represents unsecured wholesale liabilities sourced primarily by our Treasury Pool Management. Given the relatively short-term nature of these liabilities, they are primarily used to fund liquid trading assets.

To promote the additional diversification of our refinancing activities, we hold a license allowing us to issue mortgage Pfandbriefe. In addition, we have established a program for the purpose of issuing Covered Bonds under Spanish law (Cedulas).

Unsecured wholesale funding comprises a range of unsecured products, such as Certificates of Deposit (CDs), Commercial Papers (CPs) as well as term, call and overnight deposits across tenors primarily up to one year.

To avoid any unwanted reliance on these short-term funding sources, and to promote a sound funding profile, which complies with the defined risk appetite, we have implemented limits (across tenors) on these funding sources, which are derived from our daily stress testing analysis. In addition, we limit the total volume of unsecured wholesale funding to manage the reliance on this funding source as part of the overall funding diversification.

The chart "Liquidity Risk Exposure: Funding Diversification" shows the composition of our external funding sources that contribute to the liquidity risk position, both in EUR billion and as a percentage of our total external funding sources.

Funds Transfer Pricing

The funds transfer pricing framework applies to all businesses/regions and promotes pricing of (i) assets in accordance with their underlying liquidity risk, (ii) liabilities in accordance with their liquidity value and funding maturity and (iii) contingent liquidity exposures in accordance with the cost of providing for commensurate liquidity reserves to fund unexpected cash requirements.

Within this framework all funding and liquidity risk costs and benefits are allocated to the firm's business units based on market rates. Those market rates reflect the economic costs of liquidity for Deutsche Bank. Treasury might set further financial incentives in line with the Bank's liquidity risk guidelines. While the framework promotes a diligent group-wide allocation of the Bank's funding costs to the liquidity users, it also provides an incentive-based framework for businesses generating stable long-term and stress compliant funding. Funding relevant transactions are subject to liquidity (term) premiums and/or other funds transfer pricing mechanisms depending on market conditions. Liquidity premiums are set by Treasury and reflected in a segregated Treasury liquidity account which is the aggregator of liquidity costs and benefits. The management and allocation of the liquidity account cost base is the key variable for funds transfer pricing within Deutsche Bank.

Liquidity reserves

Liquidity reserves comprise available cash and cash equivalents, highly liquid securities (includes government, agency and government guaranteed) as well as other unencumbered central bank eligible assets.

The volume of our liquidity reserves is a function of our expected daily stress result, both at an aggregate level as well as at an individual currency level. To the extent we receive incremental short-term wholesale liabilities which attract a high stress roll-off, we will largely keep the proceeds of such liabilities in cash or highly liquid securities as a stress mitigant. Accordingly, the total volume of our liquidity reserves will fluctuate as a function of the level of short-term wholesale liabilities held, although this has no material impact on our overall liquidity position under stress. Our liquidity reserves include only assets that are freely transferable or that can be utilized after taking into consideration local liquidity demands within the Group, including local limits on free transferability within the Group, or that can be applied against local entity stress outflows. As a result our liquidity reserves exclude surplus liquidity held in DBTCA due to requirements pursuant to Section 23A of the U.S. Federal Reserve Act. Certain intraday requirements are directly deducted in the calculation of the Liquidity Reserves while others are represented as outflows in our internal liquidity model. We hold the vast majority of our liquidity reserves centrally across the major currencies, at our parent and our foreign branches with further reserves held at key locations in which we are active.

Asset Encumbrance

Encumbered assets primarily comprise those on- and off-balance sheet assets that are pledged as collateral against secured funding, collateral swaps, and other collateralized obligations. We generally encumber loans to support long-term capital markets secured issuance such as covered bonds or other self-securitization structures, while financing debt and equity inventory on a secured basis is a regular activity for our Corporate & Investment Bank business. Additionally, in line with the EBA technical standards on regulatory asset encumbrance reporting, we consider as encumbered assets pledged with settlement systems, including default funds and initial margins, as well as other assets pledged which cannot be freely withdrawn such as mandatory minimum reserves at central banks. We also include derivative margin receivable assets as encumbered under these EBA guidelines.

Business (Strategic) Risk Management

Strategic Risk is the risk of suffering an operating income shortfall due to lower than expected performance in revenues not compensated by a reduction in costs. Strategic Risk may arise from changes to the competitive landscape or regulatory framework or ineffective positioning in the macroeconomic environment. Strategic Risk could also arise due to a failure to execute strategy and/ or failure to effectively take actions to address underperformance.

A Strategic and Capital plan is developed annually and presented to the Management Board for discussion and approval. The final plan is then presented to the Supervisory Board. During the year, execution of business strategies is regularly monitored to assess the performance against strategic objectives and to seek to ensure we remain on track to achieve targets. A more comprehensive description of this process is detailed in the section ‘Strategic and Capital Plan’.

Model Risk Management

Model risk is the potential for adverse consequences from incorrect or misused model outputs and reports using these outputs. Model risk can lead to financial loss, poor business or strategic decision making, or damage our reputation. The term 'model' refers to a quantitative method, system, or approach that applies statistical, economic, financial, or mathematical theories, techniques, and assumptions to process input data into quantitative estimates.

Model risk is managed across Pricing models, Risk & Capital models, and Other models:

- Pricing models are used to generate asset and liability fair value measurements reported in official books and records and/or risk sensitivities which feed Market Risk Management (MRM) processes;
- Risk & Capital models are related to risks used for regulatory or internal capital requirements, e.g. VaR, IMM, Stress tests etc.;
- Other models are those outside of the Bank's Pricing and Risk & Capital models.

Model risk appetite is aligned to the Group's qualitative statements, ensuring that model risk management is embedded in a strong risk culture and that risks are minimized to the extent possible.

The management of model risk includes:

- Performing robust independent model validation that provides effective challenge to the model development process and includes identification of conditions for use, methodological limitations that may require adjustments or overlays, and validation findings that require remediation;
- Establishing a strong model risk management and governance framework, including senior forums for monitoring and escalation of model risk related topics;
- Creating Bank-wide model risk related policies, aligned to regulatory requirements with clear roles and responsibilities for key stakeholders across the model life cycle; and
- Providing an assessment of the model risk control environment and reporting to the Management Board on a periodic basis.

We have been implementing improvements in our model risk management framework, and significant progress has been achieved in 2018 across the three underlying model categories, including:

- Continued progress in improving the control environment for Pricing Models over 2018, as reflected in significant reductions in model usage exceptions and control of trades on non-strategic platforms within tolerance
- Identification and inclusion of 'Other Models' within a Model Inventory that completed a transparent baseline of all Model categories, from which model risk can be measured, managed and monitored at Group level in 2019 and beyond
- Key controls continue to operate across Risk & Capital Models, with introduction of compensating control framework for validation issues and prioritized focus on remediation of certain issues.

Management has determined to instil a robust and consistent model risk management framework in order to ensure that the framework effectively identifies, monitors and measures risk. The effort focuses on board oversight, model identification and model inventory, single coherent policy and governance framework, model development practices, and effective and rigorous model validation.

Reputational Risk Management

Within our risk management process, we define reputational risk as the risk of possible damage to our brand and reputation, and the associated risk to earnings, capital or liquidity, arising from any association, action or inaction which could be perceived by stakeholders to be inappropriate, unethical or inconsistent with Deutsche Bank's values and beliefs.

The Reputational Risk Framework (the Framework) is in place to manage primary reputational risk. It covers the process through which active decisions are taken on matters which may pose a reputational risk, ex ante, and, in doing so, prevent damage to Deutsche Bank's reputation wherever possible. Reputational risks which may arise from a failure with another risk type, control or process (secondary reputational risk) are addressed separately via the associated risk type framework. The Framework is established to provide consistent standards for the identification, assessment and management of reputational risk issues. While every employee has a responsibility to protect our reputation, the primary responsibility for the identification, assessment, management, monitoring and, if necessary, referring or reporting, of reputational risk matters lies with our business divisions. Each employee is under an obligation, within the scope of his or her activities, to be alert to any potential causes of reputational risk and to address them according to the Framework. Reputational Risk Management has designed and implemented a look back and lessons learned process in order to assess and control the effectiveness of the Framework, including in relation to reputational risk identification and referral.

If a matter is identified that is considered to pose, at a minimum, a moderate reputational risk then it is required to be referred for further consideration within the business division through its Unit Reputational Risk Assessment Process (Unit RRAP). In the event that a matter is deemed to pose a material reputational risk then it must be referred through to one of the four Regional Reputational Risk Committees (RRRCs) for further review. In addition to the materiality assessment, there are also certain criteria, known as mandatory referral criteria, which are considered inherently higher risk from a reputational perspective and therefore require mandatory referral to defined Subject Matter Experts (SMEs), e.g. Industry Reputational Risk or Group Sustainability, and/or referral to a Unit RRAP or RRRC.

The RRRCs are sub-committees of the Group Reputational Risk Committee (GRRC), which is itself a sub-committee of the Group Risk Committee (GRC), and are responsible for the oversight, governance and coordination of the management of reputational risk in their respective regions of Deutsche Bank on behalf of the Management Board. In exceptional circumstances, matters can also be referred by the RRRCs to the GRRC.

The modelling and quantitative measurement of reputational risk internal capital is implicitly covered in our economic capital framework primarily within operational and strategic risk.

Risk Concentration and Risk Diversification

Risk Concentrations

Risk concentrations refer to clusters of the same or similar risk drivers within specific risk types (intra-risk concentrations in credit, market, operational, liquidity and business risks) as well as across different risk types (inter-risk concentrations). They occur within and across counterparties, businesses, regions/countries, industries and products. The management and monitoring of risk concentrations is achieved through a quantitative and qualitative approach, as follows:

- Intra-risk concentrations are assessed, monitored and mitigated by the individual risk functions (credit, market, operational, liquidity and strategic risk management). This is supported by limit setting on different levels and/or management according to risk type.
- Inter-risk concentrations are managed through quantitative top-down stress-testing and qualitative bottom-up reviews, identifying and assessing risk themes independent of any risk type and providing a holistic view across the bank.

The most senior governance body for the oversight of risk concentrations throughout 2018 was the Enterprise Risk Committee (ERC), which is a subcommittee of the Group Risk Committee (GRC).

Risk Type Diversification Benefit

The risk type diversification benefit quantifies diversification effects between credit, market, operational and strategic risk in the economic capital calculation. To the extent correlations between these risk types fall below 1.0, a risk type diversification benefit results. The calculation of the risk type diversification benefit is intended to ensure that the standalone economic capital figures for the individual risk types are aggregated in an economically meaningful way.

Risk and capital performance

Capital, Leverage Ratio and MREL

Regulatory capital

The calculation of our regulatory capital incorporates the capital requirements following the "Regulation (EU) No 575/2013 on prudential requirements for credit institutions and investment firms" (Capital Requirements Regulation or "CRR") and the "Directive 2013/36/EU on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms" (Capital Requirements Directive 4 or "CRD 4") as implemented into German law. The information in this section as well as in the section "Development of risk-weighted Assets" is based on the regulatory principles of consolidation.

This section refers to the capital adequacy of the group of entities consolidated for banking regulatory purposes pursuant to the CRR and the German Banking Act ("Kreditwesengesetz" or "KWG"). Therein not included are insurance companies or companies outside the finance sector.

The total regulatory capital pursuant to the effective regulations as of year-end 2018 comprises Tier 1 and Tier 2 (T2) capital. Tier 1 capital is subdivided into Common Equity Tier 1 (CET 1) capital and Additional Tier 1 (AT1) capital.

Common Equity Tier 1 (CET 1) capital consists primarily of common share capital (reduced by own holdings) including related share premium accounts, retained earnings (including losses for the financial year, if any) and accumulated other comprehensive income, subject to regulatory adjustments (i.e. prudential filters and deductions). Prudential filters for CET 1 capital, according to Articles 32 to 35 CRR, include (i) securitization gains on sale, (ii) cash flow hedges and changes in the value of own liabilities, and (iii) additional value adjustments. CET 1 capital deductions comprise (i) intangible assets, (ii) deferred tax assets that rely on future profitability, (iii) negative amounts resulting from the calculation of expected loss amounts, (iv) net defined benefit pension fund assets, (v) reciprocal cross holdings in the capital of financial sector entities and, (vi) significant and non-significant investments in the capital (CET 1, AT1, T2) of financial sector entities above certain thresholds. All items not deducted (i.e., amounts below the threshold) are subject to risk-weighting.

Additional Tier 1 (AT1) capital consists of AT1 capital instruments and related share premium accounts as well as noncontrolling interests qualifying for inclusion in consolidated AT1 capital, and during the transitional period grandfathered instruments eligible under earlier frameworks. To qualify as AT1 capital under CRR/CRD 4, instruments must have principal loss absorption through a conversion to common shares or a write-down mechanism allocating losses at a trigger point and must also meet further requirements (perpetual with no incentive to redeem; institution must have full dividend/coupon discretion at all times, etc.).

Tier 2 (T2) capital comprises eligible capital instruments, the related share premium accounts and subordinated long-term debt, certain loan loss provisions and noncontrolling interests that qualify for inclusion in consolidated T2 capital. To qualify as T2 capital, capital instruments or subordinated debt must have an original maturity of at least five years. Moreover, eligible capital instruments may inter alia not contain an incentive to redeem, a right of investors to accelerate repayment, or a credit sensitive dividend feature.

Capital instruments that no longer qualify as AT1 or T2 capital under the CRR/CRD 4 fully loaded rules are subject to grandfathering rules during the transitional period and are phased out from 2013 to 2022 with their recognition capped at 40 % in 2018 and the cap decreasing by 10 % every year.

Capital instruments

Our Management Board received approval from the 2017 Annual General Meeting to buy back up to 206.7 million shares before the end of April 2022. Thereof 103.3 million shares can be purchased by using derivatives, this includes 41.3 million derivatives with a maturity exceeding 18 months. During the period from the 2017 Annual General Meeting until the 2018 Annual General Meeting (May 24, 2018), 22.8 million shares have been purchased, of which 4.4 million shares through exercise of call options. The shares purchased were used for equity compensation purposes in the same period or are to be used in the upcoming period so that the number of shares held in Treasury from buybacks was 1.3 million as of the 2018 Annual General Meeting.

The 2018 Annual General Meeting granted our Management Board the approval to buy back up to 206.7 million shares before the end of April 2023. Thereof 103.3 million shares can be purchased by using derivatives, this includes 41.3 million derivatives with a maturity exceeding 18 months. These authorizations substitute the authorizations of the previous year. During the period from the 2018 Annual General Meeting until December 31, 2018, 9.3 million shares were purchased. The shares purchased are to be used in the upcoming period so that the number of shares held in Treasury from buybacks was 1.2 million as of December 31, 2018.

Since the 2017 Annual General Meeting, and as of December 31, 2018, authorized capital available to the Management Board is € 2,560 million (1,000 million shares). As of December 31, 2018, the conditional capital against cash stands at € 512 million (200 million shares). Additional conditional capital for equity compensation amounts to € 51.2 million (20 million shares). Further the 2018 Annual General Meeting authorized the issuance of participatory notes and other Hybrid Debt Securities that fulfill the regulatory requirements to qualify as Additional Tier 1 capital with an equivalent value of € 8.0 billion.

Our legacy Hybrid Tier 1 capital instruments (substantially all noncumulative trust preferred securities) are not recognized under fully loaded CRR/CRD 4 rules as Additional Tier 1 capital, mainly because they have no write-down or equity conversion feature. However, they are recognized as Additional Tier 1 capital under CRR/CRD 4 transitional provisions and can still be recognized as Tier 2 capital under the fully loaded CRR/CRD 4 rules. During the transitional phase-out period the maximum recognizable amount of Additional Tier 1 instruments from Basel 2.5 compliant issuances as of December 31, 2012 will be reduced at the beginning of each financial year by 10 % or € 1.3 billion, through 2022. For December 31, 2018, this resulted in eligible Additional Tier 1 instruments of € 7.6 billion (i.e. € 4.6 billion newly issued AT1 Notes plus € 3.0 billion of legacy Hybrid Tier 1 instruments recognizable during the transition period). € 3.0 billion of the legacy Hybrid Tier 1 instruments can still be recognized as Tier 2 capital under the fully loaded CRR/CRD 4 rules. Additional Tier 1 instruments recognized under fully loaded CRR/CRD 4 rules amounted to € 4.6 billion as of December 31, 2018. In 2018, the bank has redeemed one legacy Hybrid Tier 1 instrument with a notional of U.S. $ 2.0 billion and an eligible equivalent amount of € 1.6 billion and another legacy Hybrid Tier 1 instrument with a notional of € 1.0 billion and an eligible equivalent amount of € 1.0 billion. The first redemption was already derecognized from regulatory Additional Tier 1 capital in 2017 with the effective date of the call-permission by the ECB.

The total of our Tier 2 capital instruments as of December 31, 2018 recognized during the transition period under CRR/CRD 4 was € 6.2 billion. As of December 31, 2018, there were no legacy Hybrid Tier 1 instruments that are counted as Tier 2 capital under transitional rules. The gross notional value of the Tier 2 capital instruments was € 7.5 billion. Tier 2 instruments recognized under fully loaded CRR/CRD 4 rules amounted to € 9.2 billion as of December 31, 2018 (including the € 3.0 billion legacy Hybrid Tier 1 capital instruments only recognizable as Additional Tier 1 capital during the transitional period). In 2018, the bank has redeemed one Tier 2 capital instrument with a notional of JPY 21.0 billion and an eligible equivalent amount of € 0.1 billion and another Tier 2 capital instrument with a notional of JPY 3.0 billion and an eligible equivalent amount of € 0.0 billion. These redemptions were already derecognized from regulatory Tier 2 capital in 2017 with the effective date of the call-permission by the ECB.

Minimum capital requirements and additional capital buffers

The Pillar 1 CET 1 minimum capital requirement applicable to the Group is 4.50 % of risk-weighted assets (RWA). The Pillar 1 total capital requirement of 8.00 % demands further resources that may be met with up to 1.50 % Additional Tier 1 capital and up to 2.00 % Tier 2 capital.

Failure to meet minimum capital requirements can result in supervisory measures such as restrictions of profit distributions or limitations on certain businesses such as lending. We complied with the regulatory capital adequacy requirements in 2018.

In addition to these minimum capital requirements, the following combined capital buffer requirements have been phased in since 2016 (other than the systemic risk buffer, if any, which is not subject to any phase-in) and will become fully effective from 2019 onwards. The buffer requirements must be met in addition to the Pillar 1 minimum capital requirements, but can be drawn down in times of economic stress.

Deutsche Bank continues to be designated as a global systemically important institution (G-SII) by the German Federal Financial Supervisory Authority (BaFin) in agreement with the Deutsche Bundesbank, resulting in a G-SII buffer requirement of 2.00 % CET 1 capital of RWA in 2019 and was phased in with 0.5 % in 2016, 1.00 % in 2017 and 1.50 % in 2018. This is in line with the FSB assessment of systemic importance based on the indicators as published in 2018. We will continue to publish our indicators on our website.

The capital conservation buffer is implemented in Section 10c German Banking Act based on Article 129 CRD 4 and equals a requirement of 2.50 % CET 1 capital of RWA in 2019 and was phased in with 0.625 % in 2016, 1.25 % in 2017 and 1.875 % in 2018.

The countercyclical capital buffer is deployed in a jurisdiction when excess credit growth is associated with an increase in system-wide risk. It may vary between 0 % and 2.50 % CET 1 capital of RWA by 2019. In exceptional cases, it could also be higher than 2.50 %. The institution specific countercyclical buffer that applies to Deutsche Bank is the weighted average of the countercyclical capital buffers that apply in the jurisdictions where our relevant credit exposures are located. As per December 31, 2018, the institution-specific countercyclical capital buffer was at 0.07 %.

In addition to the aforementioned buffers, national authorities, such as the BaFin, may require a systemic risk buffer to prevent and mitigate long-term non-cyclical systemic or macro-prudential risks that are not covered by the CRR. They can require an additional buffer of up to 5.00 % CET 1 capital of RWA. As of the year-end 2018, no systemic risk buffer applied to Deutsche Bank.

Additionally, Deutsche Bank AG has been classified by BaFin as an other systemically important institution (O-SII) with an additional buffer requirement of 2.00 % that has to be met on a consolidated level. For Deutsche Bank, the O-SII buffer was introduced in first steps of 0.66 % in 2017, 1.32 % in 2018 and 2.00 % in 2019. Unless certain exceptions apply, only the higher of the systemic risk buffer (as of December 31, 2018, not applicable), G-SII buffer and O-SII buffer must be applied. Accordingly, the O-SII buffer is not applicable as of December 31, 2018.

In addition, pursuant to the Pillar 2 Supervisory Review and Evaluation Process (SREP), the European Central Bank (ECB) may impose capital requirements on individual banks which are more stringent than statutory requirements (so-called Pillar 2 requirement). On December 19, 2017, Deutsche Bank was informed by the ECB of its decision regarding prudential minimum capital requirements for 2018, following the results of the 2017 SREP. Beginning from January 1, 2018, the decision requires Deutsche Bank to maintain a phase-in CET 1 ratio, which as of December 31, 2018 is at least 10.69 % on a consolidated basis. This requirement on CET 1 capital comprises the Pillar 1 minimum capital requirement of 4.50 %, the Pillar 2 requirement (SREP Add-on) of 2.75 %, the phase-in capital conservation buffer of 1.875 %, the countercyclical buffer of 0.07 % (as per December 31, 2018) and the phase-in G-SII capital buffer of 1.50 %. Correspondingly the requirements for Deutsche Bank's Tier 1 capital ratio were at 12.19 % and total capital ratio at 14.19 % as of December 31, 2018.

Beginning from January 1, 2019, Deutsche Bank must maintain a CET 1 ratio of at least 11.82 % on a consolidated basis as the transition period for the capital conservation buffer and the G-SII capital buffer requirements ended and the full buffer levels of 2.50 % and 2.00 %, respectively, need to be covered with CET 1 capital. To summarize, the CET 1 capital requirement comprises the Pillar 1 minimum capital requirement of 4.50 %, the unchanged Pillar 2 requirement (SREP Add-on) of 2.75 %, the capital conservation buffer of 2.50 %, the countercyclical buffer (0.07 % per year end 2018) and the G-SII buffer of 2.00 %. Correspondingly, 2019 requirements for Deutsche Bank's Tier 1 capital ratio are at 13.32 % and for its total capital ratio at 15.32 %. On February 8, 2019, Deutsche Bank was informed by the ECB of its decision regarding prudential minimum capital requirements for 2019, following the results of the 2018 SREP. The decision left Deutsche Bank’s Pillar 2 requirement and thus the CET 1 capital requirements unchanged at 2.75 % beginning from March 1, 2019. Also, the ECB communicated to us an individual expectation to hold a further Pillar 2 CET 1 capital add-on, commonly referred to as the Pillar 2 guidance. The capital add-on pursuant to the Pillar 2 guidance is separate from and in addition to the Pillar 2 requirement. The ECB has stated that it expects banks to meet the Pillar 2 guidance although it is not legally binding, and failure to meet the Pillar 2 guidance does not lead to automatic restrictions of capital distributions.

The following table gives an overview of the different Pillar 1 and Pillar 2 minimum capital requirements (but excluding the Pillar 2 guidance) as well as capital buffer requirements applicable to Deutsche Bank in the years 2018 and 2019 (articulated on a phase-in basis):

Overview total capital requirements and capital buffers

	2018	2019
Pillar 1		
Minimum CET 1 requirement	4.50 %	4.50 %
Combined buffer requirement	3.44 %	4.57 %
Capital Conservation Buffer	1.875 %	2.50 %
Countercyclical Buffer	0.07 %[1]	0.07 %[1]
Maximum of:	1.50 %	2.00 %
G-SII Buffer	1.50 %	2.00 %
O-SII Buffer	1.32 %	2.00 %
Systemic Risk Buffer	0.00 %	0.00 %[2]
Pillar 2		
Pillar 2 SREP Add-on of CET 1 capital (excluding the "Pillar 2" guidance)	2.75 %	2.75 %
Total CET 1 requirement from Pillar 1 and 2[3]	**10.69 %**	11.82 %
Total Tier 1 requirement from Pillar 1 and 2	**12.19 %**	13.32 %
Total capital requirement from Pillar 1 and 2	**14.19 %**	15.32 %

[1] Deutsche Bank's countercyclical buffer requirement is subject to country-specific buffer rates decreed by EBA and the Basel Committee of Banking Supervision (BCBS) as well as Deutsche Bank's relevant credit exposures as per respective reporting date. The countercyclical buffer rate for 2018 is as of December 31, 2018. The countercyclical buffer rate for 2019 has been assumed to be 0.07 % due to unavailability of 2019 data.
[2] The systemic risk buffer has been assumed to remain at 0 % for the projected year 2019, subject to changes based on further directives.
[3] The total Pillar 1 and Pillar 2 CET 1 requirement (excluding the "Pillar 2" guidance) is calculated as the sum of the SREP requirement, the higher of the G-SII, O-SII and systemic risk buffer requirement as well as the countercyclical buffer requirement.

Development of regulatory capital

Our CRR/CRD 4 Tier 1 capital amounted to € 55.1 billion as of December 31, 2018, consisting of CET 1 capital of € 47.5 billion and AT1 capital of € 7.6 billion. The CRR/CRD 4 Tier 1 capital was € 2.5 billion lower than at the end of 2017, primarily driven by a decrease in CET 1 capital of € 3.3 billion since year end 2017 while AT1 capital increased by € 0.8 billion in the same period.

The € 3.3 billion decrease of CRR/CRD 4 CET 1 capital was largely the result of increased regulatory adjustments due to a phase-in rate of 100 % in 2018 compared to a phase-in rate of 80 % in 2017. Based on ECB guidance and following the EBA Guidelines on payment commitments, effective January 1, 2018, Deutsche Bank treats irrevocable payment commitments related to the Single Resolution Fund and the Deposit Guarantee Scheme as an additional CET 1 capital deduction instead of risk-weighting them. This capital deduction as of December 31, 2018 was at € 0.6 billion. The adoption of IFRS 9, effective January 1, 2018, decreased capital by € 0.4 billion. Furthermore our CET 1 capital was reduced by € 0.5 billion in the second quarter of 2018 due to the payment of our common share dividends for the financial year 2017 (11 cts/share following the Annual General Meeting) and the yearly AT1 coupon payment which was not accrued in CET 1 capital as a consequence of the negative net income for the financial year 2017 following Article 26(2) of Regulation (EU) No 575/2013 (ECB/2015/4). As of December 31, 2018 our positive net income of € 0.3 billion was completely offset by our common share dividend and AT1 coupon accrual of € 0.3 billion for the year-end 2018 which is in line with the ECB Decision (EU) (2015/656) on the recognition of interim or year-end profits in CET 1 capital in accordance with the Article 26(2) of Regulation (EU) No 575/2013 (ECB/2015/4). The negative effects on CET 1 capital were partially offset by a positive impact of € 0.9 billion from our Initial Public Offering (IPO) of DWS Group GmbH & Co. KGaA (DWS).

The € 0.8 billion increase in CRR/CRD 4 AT1 capital was the result of positive effects from reduced regulatory adjustments of € 1.7 billion that were phased out from AT1 capital and a negative counter-effect from the call and redemption of one legacy Hybrid AT1 instrument with a notional amount of € 1 billion in the second quarter of 2018. The regulatory adjustments from AT1 capital reflect the residual amount of certain CET 1 deductions that are subtracted from CET 1 capital under fully loaded rules, but are allowed to reduce AT1 capital during the transitional period. The phase-in rate for these deductions on the level of CET 1 capital increased to 100 % in 2018 (80 % in 2017) and decreased correspondingly on the level of AT1 capital to 0 % in 2018 (20 % in 2017).

Our fully loaded CRR/CRD 4 Tier 1 capital as of December 31, 2018 was € 52.1 billion, compared to € 52.9 billion at the end of 2017. Our fully loaded CRR/CRD 4 CET 1 capital amounted to € 47.5 billion as of December 31, 2018, compared to € 48.3 billion as of December 31, 2017. Our fully loaded CRR/CRD 4 Additional Tier 1 capital amounted to € 4.6 billion as per end of December 2018, unchanged compared to year end 2017.

The decrease of our fully loaded CET 1 capital of € 0.8 billion compared to year end 2017 capital was mainly the result of the deduction of irrevocable payment commitments to the Single Resolution Fund and the Deposit Guarantee Schemes amounting to € 0.6 billion, the IFRS 9 adoption impact of € 0.4 billion, the payment of 11 cts/share common share dividend totaling to € 0.2 billion and the AT1 coupons of € 0.3 billion in the second quarter of 2018 and negative effects of € 0.3 billion from regulatory adjustments from prudential filters (Additional valuation adjustments). These negative effects were reduced by a positive CET 1 contribution of € 0.9 billion from our IPO of DWS.

Own Funds Template (incl. RWA and capital ratios)

	Dec 31, 2018		Dec 31, 2017	
in € m.	CRR/CRD 4 fully loaded	CRR/CRD 4[1]	CRR/CRD 4 fully loaded	CRR/CRD 4
Common Equity Tier 1 (CET 1) capital: instruments and reserves				
Capital instruments, related share premium accounts and other reserves[2]	45,515	45,515	45,195	45,195
Retained earnings	16,297	16,297	17,977	17,977
Accumulated other comprehensive income (loss), net of tax	382	382	696	660
Independently reviewed interim profits net of any foreseeable charge or dividend[3]	0	0	(751)	(751)
Other[2]	846	846	0	33
Common Equity Tier 1 (CET 1) capital before regulatory adjustments	**63,041**	**63,041**	63,116	63,114
Common Equity Tier 1 (CET 1) capital: regulatory adjustments				
Additional value adjustments (negative amount)	(1,504)	(1,504)	(1,204)	(1,204)
Other prudential filters (other than additional value adjustments)	(329)	(329)	(102)	(74)
Goodwill and other intangible assets (net of related tax liabilities) (negative amount)	(8,566)	(8,566)	(8,394)	(6,715)
Deferred tax assets that rely on future profitability excluding those arising from temporary differences (net of related tax liabilities where the conditions in Art. 38 (3) CRR are met) (negative amount)	(2,758)	(2,758)	(3,004)	(2,403)
Negative amounts resulting from the calculation of expected loss amounts[4]	(367)	(367)	(502)	(408)
Defined benefit pension fund assets (negative amount)	(1,111)	(1,111)	(1,125)	(900)
Direct, indirect and synthetic holdings by an institution of own CET 1 instruments (negative amount)	(25)	(25)	(144)	(117)
Direct, indirect and synthetic holdings by the institution of the CET 1 instruments of financial sector entities where the institution has a significant investment in those entities (amount above the 10 % / 15 % thresholds and net of eligible short positions) (negative amount)	0	0	0	0
Deferred tax assets arising from temporary differences (net of related tax liabilities where the conditions in Art. 38 (3) CRR are met) (amount above the 10 % / 15 % thresholds) (negative amount)	0	0	0	0
Other regulatory adjustments[5]	(895)	(895)	(341)	(485)
Total regulatory adjustments to Common Equity Tier 1 (CET 1) capital	**(15,555)**	**(15,555)**	(14,816)	(12,306)
Common Equity Tier 1 (CET 1) capital	**47,486**	**47,486**	48,300	50,808
Additional Tier 1 (AT1) capital: instruments				
Capital instruments and the related share premium accounts	4,676	4,676	4,676	4,676
Amount of qualifying items referred to in Art. 484 (4) CRR and the related share premium accounts subject to phase out from AT1	N/M	3,009	N/M	3,904
Additional Tier 1 (AT1) capital before regulatory adjustments	**4,676**	**7,685**	4,676	8,579
Additional Tier 1 (AT1) capital: regulatory adjustments				
Direct, indirect and synthetic holdings by an institution of own AT1 instruments (negative amount)	(80)	(80)	(55)	(26)
Residual amounts deducted from AT1 capital with regard to deduction from CET 1 capital during the transitional period pursuant to Art. 472 CRR	N/M	N/M	N/M	(1,730)
Other regulatory adjustments	0	0	0	0
Total regulatory adjustments to Additional Tier 1 (AT1) capital	**(80)**	**(80)**	(55)	(1,756)
Additional Tier 1 (AT1) capital	**4,595**	**7,604**	4,621	6,823
Tier 1 capital (T1 = CET 1 + AT1)	**52,082**	**55,091**	52,921	57,631
Tier 2 (T2) capital	**9,211**	**6,202**	10,329	6,384
Total capital (TC = T1 + T2)	**61,292**	**61,292**	63,250	64,016
Total risk-weighted assets	**350,432**	**350,432**	344,212	343,316
Capital ratios				
Common Equity Tier 1 capital ratio (as a percentage of risk-weighted assets)	13.6	13.6	14.0	14.8
Tier 1 capital ratio (as a percentage of risk-weighted assets)	14.9	15.7	15.4	16.8
Total capital ratio (as a percentage of risk-weighted assets)	17.5	17.5	18.4	18.6

N/M – Not meaningful

[1] With effect from January 1, 2018, the CRR/CRD 4 "transitional" (or "phase-in") rules under which CET 1 regulatory adjustments were phased in have reached a rate of 100 %, together with the 100 % phase-out rate of minority interest only recognizable under the transitional rules.

[2] Our IPO of DWS led to a € 0.9 billion CET 1 contribution which is reflected in 'Capital instruments, related share premium accounts and other reserves' at € 0.1 billion and minority interest in 'Other' at € 0.8 billion.

[3] No interim profits to be recognized as per ECB Decision (EU) 2015/656 in accordance with the Article 26(2) of Regulation (EU) No 575/2013 (ECB/2015/4).

[4] Based on Article 159 CRR and recent guidance provided by EBA (Q&A 2017_3426) published on January 18, 2019 only unearned credit spread additional value adjustments are used as specific credit risk adjustments.

[5] Includes € 0.6 billion capital deduction effective from January 2018 onwards, based on ECB guidance and following the EBA Guidelines on irrevocable payment commitments related to the Single Resolution Fund and the Deposit Guarantee Scheme. Further includes capital deduction of € 0.3 billion that was imposed on Deutsche Bank effective from October 2016 onwards based on a notification by the ECB pursuant to Article 16(1)(c) and 16(2)(d) of Regulation (EU) No 1024/2013.

Reconciliation of shareholders' equity to regulatory capital

in € m.	CRR/CRD 4 Dec 31, 2018	CRR/CRD 4 Dec 31, 2017
Total shareholders' equity per accounting balance sheet[1]	**62,495**	63,174
Deconsolidation/Consolidation of entities	(33)	(58)
Of which:		
Additional paid-in capital	(12)	(6)
Retained earnings	(150)	(228)
Accumulated other comprehensive income (loss), net of tax	130	176
Total shareholders' equity per regulatory balance sheet	**62,462**	63,116
Minority Interests (amount allowed in consolidated CET 1)[1]	846	33
Accrual for dividend and AT1 coupons[2]	(267)	0
Reversal of deconsolidation/consolidation of the position Accumulated other comprehensive income (loss), net of tax, during transitional period	0	(35)
Common Equity Tier 1 (CET 1) capital before regulatory adjustments	**63,041**	63,114
Additional value adjustments	(1,504)	(1,204)
Other prudential filters (other than additional value adjustments)	(329)	(74)
Regulatory adjustments relating to unrealized gains and losses pursuant to Art. 467 and 468 CRR	0	(144)
Goodwill and other intangible assets (net of related tax liabilities)	(8,566)	(6,715)
Deferred tax assets that rely on future profitability	(2,758)	(2,403)
Defined benefit pension fund assets	(1,111)	(900)
Direct, indirect and synthetic holdings by the institution of the CET 1 instruments of financial sector entities where the institution has a significant investment in those entities	0	0
Other regulatory adjustments	(1,287)	(866)
Common Equity Tier 1 capital	**47,486**	50,808

[1] Our IPO of DWS led to a € 0.9 billion CET 1 contribution which is reflected in the 'Total shareholders' equity per accounting balance sheet' at € 0.1 billion and 'Minority interests' at € 0.8 billion.
[2] No interim profits to be recognized as per ECB Decision (EU) 2015/656 in accordance with the Article 26(2) of Regulation (EU) No 575/2013 (ECB/2015/4).

Development of regulatory capital

in € m.	CRR/CRD 4 twelve months ended Dec 31, 2018	CRR/CRD 4 twelve months ended Dec 31, 2017
Common Equity Tier 1 (CET 1) capital - opening amount	**50,808**	47,782
Common shares, net effect	0	1,760
Additional paid-in capital	327	6,153
Retained earnings	(662)	(795)
Common shares in treasury, net effect/(+) sales (–) purchase	(6)	(9)
Movements in accumulated other comprehensive income	(134)	(2,748)
Accrual for dividend and Additional Tier 1 (AT1) coupons [1]	(267)	0
Additional value adjustments	(299)	194
Goodwill and other intangible assets (net of related tax liabilities)	(1,850)	(1,653)
Deferred tax assets that rely on future profitability (excluding those arising from temporary differences)	(355)	(91)
Negative amounts resulting from the calculation of expected loss amounts	41	(219)
Defined benefit pension fund assets	(211)	(333)
Direct, indirect and synthetic holdings by the institution of the CET 1 instruments of financial sector entities where the institution has a significant investment in those entities	0	0
Securitization positions not included in risk-weighted assets	0	0
Deferred tax assets arising from temporary differences (amount above 10 % and 15 % threshold, net of related tax liabilities where the conditions in Art. 38 (3) CRR are met)	0	354
Other, including regulatory adjustments	95	413
Common Equity Tier 1 (CET 1) capital - closing amount	**47,486**	50,808
Additional Tier 1 (AT1) Capital – opening amount	**6,823**	7,703
New Additional Tier 1 eligible capital issues	0	0
Matured and called instruments	(1,008)	(2,376)
Transitional arrangements	1,730	1,708
Of which:		
Goodwill and other intangible assets (net of related tax liabilities)	1,679	1,696
Other, including regulatory adjustments	59	(212)
Additional Tier 1 (AT1) Capital – closing amount	**7,604**	6,823
Tier 1 capital	**55,091**	57,631
Tier 2 (T2) capital – closing amount	**6,202**	6,384
Total regulatory capital	**61,292**	64,016

[1] No interim profits to be recognized as per ECB Decision (EU) 2015/656 in accordance with the Article 26(2) of Regulation (EU) No 575/2013 (ECB/2015/4).

Development of risk-weighted assets

The table below provides an overview of RWA broken down by risk type and business division. They include the aggregated effects of the segmental reallocation of infrastructure related positions, if applicable, as well as reallocations between the segments.

Risk-weighted assets by risk type and business division according to transitional rules

					Dec 31, 2018
in € m.	Corporate & Investment Bank	Private & Commercial Bank	Asset Management	Corporate & Other	Total
Credit Risk	115,035	76,592	5,236	15,964	212,827
Settlement Risk	39	0	0	47	86
Credit Valuation Adjustment (CVA)	7,642	202	112	42	7,997
Market Risk	37,446	89	0	0	37,535
Operational Risk	76,145	10,827	5,017	0	91,989
Total	236,307	87,709	10,365	16,053	350,432

					Dec 31, 2017
in € m.	Corporate & Investment Bank	Private & Commercial Bank	Asset Management	Corporate & Other	Total
Credit Risk	118,940	75,377	3,273	16,552	214,142
Settlement Risk	142	0	0	5	147
Credit Valuation Adjustment (CVA)	6,189	171	84	7	6,451
Market Risk	30,896	70	0	0	30,966
Operational Risk	74,936	11,654	5,020	0	91,610
Total	231,103	87,272	8,378	16,564	343,316

The RWA according to CRR/CRD 4 were € 350.4 billion as of December 31, 2018, compared to € 343.3 billion at the end of 2017, which were still subject to transitional arrangements. The increase by € 7.1 billion was primarily driven by Market Risk and CVA RWA. The latter is driven by several methodology and policy-related changes. The Market Risk RWA increase of € 6.6 billion is driven by higher Stressed VaR and temporary increases in concentration risk. Credit Risk RWA decreased by € 1.3 billion mainly resulting from parameter recalibrations as well as model and methodology changes in addition to lower RWA due to the improved capturing of pending settlements for syndicated loans, which was partly offset by higher RWA due to business growth in our CIB and PCB segments.

Since January 1, 2018 the RWA under transitional rules is equal to the fully loaded measure as all transitional arrangements expired. For December 31, 2017 the RWA on transitional rules still recognized a small subset of equity positions according to grandfathering rules resulting in transitional RWA of € 343.3 billion, slightly below the fully loaded RWA of € 344.2 billion.

The tables below provide an analysis of key drivers for risk-weighted asset movements observed for credit risk, credit valuation adjustments as well as market and operational risk in the reporting period. They also show the corresponding movements in capital requirements, derived from the RWA by an 8% capital ratio.

Development of risk-weighted assets for Credit Risk including Counterparty Credit Risk

	Dec 31, 2018		Dec 31, 2017	
in € m.	Credit risk RWA	Capital requirements	Credit risk RWA	Capital requirements
Credit risk RWA balance, beginning of year	**214,142**	**17,131**	220,345	17,628
Book size	4,086	327	3,523	282
Book quality	(3,314)	(265)	506	40
Model updates	(1,357)	(109)	1,272	102
Methodology and policy	(976)	(78)	0	0
Acquisition and disposals	(1,653)	(132)	0	0
Foreign exchange movements	2,536	203	(10,162)	(813)
Other	(637)	(51)	(1,342)	(107)
Credit risk RWA balance, end of year	**212,827**	**17,026**	214,142	17,131

Of which: Development of risk-weighted assets for Counterparty Credit Risk

	Dec 31, 2018		Dec 31, 2017	
in € m.	Counterparty credit risk RWA	Capital requirements	Counterparty credit risk RWA	Capital requirements
Counterparty credit risk RWA balance, beginning of year	**33,924**	**2,714**	35,614	2,849
Book size	(8,235)	(659)	(4,628)	(370)
Book quality	104	8	3,715	297
Model updates	(850)	(68)	1,272	102
Methodology and policy	0	0	0	0
Acquisition and disposals	0	0	0	0
Foreign exchange movements	339	27	(2,048)	(164)
Other	0	0	0	0
Counterparty credit risk RWA balance, end of year	**25,282**	**2,023**	33,924	2,714

The classifications of key drivers for the RWA credit risk development table are fully aligned with the recommendations of the Enhanced Disclosure Task Force (EDTF). Organic changes in our portfolio size and composition are considered in the category “Book size”. The category “Book quality” mainly represents the effects from portfolio rating migrations, loss given default, model parameter recalibrations as well as collateral and netting coverage activities. “Model updates” include model refinements and advanced model roll out. RWA movements resulting from externally, regulatory-driven changes, e.g. applying new regulations, are considered in the “Methodology and policy” section. “Acquisition and disposals” is reserved to show significant exposure movements which can be clearly assigned to new businesses or disposal-related activities. Changes that cannot be attributed to the above categories are reflected in the category “Other”.

The decrease in RWA for credit risk by 0.6 % or € 1.3 billion since December 31, 2017 is driven by book quality and model- and methodology-related changes. The category “Book quality” includes reductions resulting from parameter recalibrations and data enhancements. The category “Model updates” provides further reductions mainly stemming from refinements in our internal model method for derivatives. Furthermore the category “Methodology and policy” reflects the derecognition of irrevocable payment commitments to the Single Resolution Fund and the Deposit Guarantee Scheme which are deducted from CET 1 since the beginning of the year. “Other” principally reflects the net impact from lower RWA due to the improved capturing of pending settlements for syndicated loans and higher RWA for equity positions following the phase-out of the respective grandfathering provision under CRR/CRD 4 transitional rules. “Acquisition and disposals” provides the reduction in credit risk RWA, which is related to the partial sale of our Poland retail business. These reductions were partly offset by increase in the category “Book size” representing business growth in our CIB and PCB segments in addition to an increase resulting from foreign exchange movements.

The decrease in counterparty credit risk is mainly driven by trade terminations as well as data and collateral enhancements across the businesses. In addition the category “Model updates” contributed to the overall decrease which includes the impact from refinements in our internal model method for derivatives.

Based on the CRR/CRD 4 regulatory framework, we are required to calculate RWA using the CVA which takes into account the credit quality of our counterparties. RWA for CVA covers the risk of mark-to-market losses on the expected counterparty risk in connection with OTC derivative exposures. We calculate the majority of the CVA based on our own internal model as approved by the BaFin.

Development of risk-weighted assets for Credit Valuation Adjustment

	Dec 31, 2018		Dec 31, 2017	
in € m.	CVA RWA	Capital requirements	CVA RWA	Capital requirements
CVA RWA balance, beginning of year	**6,451**	**516**	9,416	753
Movement in risk levels	(770)	(62)	(3,228)	(258)
Market data changes and recalibrations	0	0	0	0
Model updates	0	0	0	0
Methodology and policy	2,028	162	870	70
Acquisitions and disposals	0	0	0	0
Foreign exchange movements	288	23	(607)	(49)
CVA RWA balance, end of year	**7,997**	**640**	6,451	516

The development of CVA RWA is broken down into a number of categories: “Movement in risk levels”, which includes changes to the portfolio size and composition; “Market data changes and calibrations”, which includes changes in market data levels and volatilities as well as recalibrations; “Model updates” refers to changes to either the IMM credit exposure models or the value-at-risk models that are used for CVA RWA; “Methodology and policy” relates to changes to the regulation. Any significant business acquisitions or disposals would be presented in the category with that name.

As of December 31, 2018, the RWA for CVA amounted to € 8.0 billion, representing an increase of € 1.5 billion (19 %) compared with € 6.5 billion for December 31, 2017. The overall increase was driven by "Methodology and policy" changes, with some offset from de-risking of the portfolio and currency effects; the most notable policy change was the inclusion of securities financing transactions following a change of regulatory guidance.

Development of risk-weighted assets for Market Risk

							Dec 31, 2018
in € m.	VaR	SVaR	IRC	CRM	Other	Total RWA	Total capital requirements
Market risk RWA balance, beginning of year	**4,380**	**10,896**	**9,871**	**56**	**5,763**	**30,966**	**2,477**
Movement in risk levels	799	4,562	1,174	(3)	903	7,435	595
Market data changes and recalibrations	(51)	0	0	0	(165)	(215)	(17)
Model updates/changes	108	431	80	0	(200)	420	34
Methodology and policy	131	537	(1,057)	(53)	(500)	(941)	(75)
Acquisitions and disposals	0	0	0	0	(223)	(223)	(18)
Foreign exchange movements	0	0	0	0	94	94	8
Other	0	0	0	0	0	0	0
Market risk RWA balance, end of year	**5,368**	**16,426**	**10,068**	**0**	**5,673**	**37,535**	**3,003**

							Dec 31, 2017
in € m.	VaR	SVaR	IRC	CRM	Other	Total RWA	Total capital requirements
Market risk RWA balance, beginning of year	**5,957**	**14,271**	**8,662**	**273**	**4,599**	**33,762**	**2,701**
Movement in risk levels	(1,658)	(3,375)	2,598	(217)	922	(1,729)	(138)
Market data changes and recalibrations	81	0	0	0	581	661	53
Model updates/changes	0	0	(1,390)	0	(38)	(1,428)	(114)
Methodology and policy	0	0	0	0	0	0	0
Acquisitions and disposals	0	0	0	0	0	0	0
Foreign exchange movements	0	0	0	0	(301)	(301)	(24)
Other	0	0	0	0	0	0	0
Market risk RWA balance, end of year	**4,380**	**10,896**	**9,871**	**56**	**5,763**	**30,966**	**2,477**

The analysis for market risk covers movements in our internal models for value-at-risk (VaR), stressed value-at-risk (SvaR), incremental risk charge (IRC) and comprehensive risk measure (CRM) as well as results from the market risk standardized approach, which are captured in the table under the category "Other". The market risk standardized approach covers trading securitizations and nth-to-default derivatives, longevity exposures, relevant Collective Investment Undertakings and market risk RWA from Postbank.

The market risk RWA movements due to changes in market data levels, volatilities, correlations, liquidity and ratings are included under the "Market data changes and recalibrations" category. Changes to our market risk RWA internal models, such as methodology enhancements or risk scope extensions, are included in the category of "Model updates". In the "Methodology and policy" category we reflect regulatory driven changes to our market risk RWA models and calculations. Significant new businesses and disposals would be assigned to the line item "Acquisition and disposals". The impacts of "Foreign exchange movements" are only calculated for the CRM and Standardized approach methods.

As of December 31, 2018 the RWA for market risk was € 37.5 billion which has increased by € 6.6 billion (21 %) since December 31, 2017. The increase was primarily driven by stressed value-at-risk coming from the "Movement in risk levels" category from a reduction in diversification benefit due to changes in the composition of interest rate and equity related exposures.

Development of risk-weighted assets for operational risk

	Dec 31, 2018		Dec 31, 2017	
in € m.	Operational risk RWA	Capital requirements	Operational risk RWA	Capital requirements
Operational risk RWA balance, beginning of year	**91,610**	**7,329**	92,675	7,414
Loss profile changes (internal and external)	(2,847)	(228)	(2,815)	(225)
Expected loss development	5,407	433	1,104	88
Forward looking risk component	484	39	(3,265)	(261)
Model updates	(2,666)	(213)	3,912	313
Methodology and policy	0	0	0	0
Acquisitions and disposals	0	0	0	0
Operational risk RWA balance, end of year	**91,989**	**7,359**	91,610	7,329

Changes of internal and external loss events are reflected in the category “Loss profile changes”. The category “Expected loss development” is based on divisional business plans as well as historical losses and is deducted from the AMA capital figure within certain constraints. The category “Forward looking risk component” reflects qualitative adjustments and as such the effectiveness and performance of the day-to-day operational risk management activities via NFR appetite metrics and RCA scores, focusing on the business environment and internal control factors. The category “Model updates” covers model refinements such as the implementation of model changes. The category “Methodology and policy” represents externally driven changes such as regulatory add-ons. The category “Acquisition and disposals” represents significant exposure movements which can be clearly assigned to new or disposed businesses.

The overall RWA increase of € 0.4 billion was driven by several, largely offsetting effects. A reduced litigation intensity throughout the industry as well as decreasing provision and legal forecast levels for Deutsche Bank led to a lighter loss profile feeding into our capital model. These loss profile changes (internal and external) reduced our RWA for Operational Risk by € 2.8 billion. Moreover, a number of model updates resulted in an overall RWA decrease of € 2.7 billion. These improvements mostly related to the alignment of weights for internal and external loss data, but also to the implementation of our enhanced RCA process. The resulting decrease has been partly compensated by changes in the forward looking risk component, where weaker risk appetite metrics and RCA results led to an RWA increase of € 0.5 billion. The most prominent impact, however, originated from the development of our expected loss deductible. We derive our capital requirements as the difference between the total losses simulated in our AMA model and an expected loss deductible. The deductible is given by the minimum of the average total loss projected by the model and our operational risk loss forecasts. In 2018, the expected loss deductible was dominated by the latter, which declined strongly due to our positive outlook on the development of our operational risk profile. Our simulated total loss estimate, which predominantly relies on historical information, was less reactive to this trend, so that the difference between the two quantities caused an RWA increase of € 5.4 billion.

Economic Capital

Internal Capital Adequacy

Our internal capital adequacy assessment process (ICAAP) is aimed at maintaining the viability of Deutsche Bank on an ongoing basis. We assess our internal capital adequacy from an economic perspective as the ratio of our internal capital supply divided by our internal economic capital demand as shown in the table below.

Total capital supply and demand

in € m. (unless stated otherwise)	Dec 31, 2018	Dec 31, 2017
Capital supply		
Shareholders' equity	62,495	63,174
Noncontrolling interests[1]	900	0
AT1 coupons accruals	(218)	(213)
Gain on sale of securitizations, cash flow hedges	(26)	(29)
Fair value gains on own debt and debt valuation adjustments, subject to own credit risk	(304)	(73)
Additional valuation adjustments	(1,504)	(1,204)
Intangible assets	(9,141)	(8,839)
IFRS deferred tax assets excl. temporary differences	(3,090)	(3,341)
Expected loss shortfall	(367)	(502)
Defined benefit pension fund assets[2]	(1,111)	(1,125)
Holdings of own common equity tier 1 capital instruments	(11)	(131)
Home loans and savings protection ("Fonds zur bauspartechnischen Absicherung")	0	(19)
Other adjustments[3]	(1,122)	(322)
Additional tier 1 equity instruments	4,675	4,675
Capital supply	**51,176**	52,051
Total economic capital requirement		
Credit risk	10,610	10,769
Market risk	10,341	10,428
Operational risk	7,359	7,329
Business risk	4,758	5,677
Diversification benefit	(6,960)	(7,074)
Capital demand	**26,108**	27,129
Internal capital adequacy ratio	**196 %**	192 %

[1] Includes noncontrolling interest up to the economic capital requirement for each subsidiary.
[2] Reported as net assets (assets minus liabilities) of a defined pension fund, i.e. applicable for overfunded pension plans.
[3] Includes € 0.6 billion capital deduction of irrevocable payment commitments related to the Single Resolution Fund and Deposit Guarantee Scheme, since January 1, 2018.

A ratio of more than 100 % signifies that the total capital supply is sufficient to cover the capital demand determined by the risk positions. This ratio was 196 % as of December 31, 2018, compared with 192 % as of December 31, 2017. The change of the ratio was mainly due to a decrease in capital demand partially offset by decrease in capital supply. The capital supply decreased by € 0.9 billion mainly driven by negative effects from deduction of irrevocable payment commitments to the Single Resolution Fund and the Deposit Guarantee Schemes of € 0.6 billion, IFRS 9 adoption of € 0.4 billion, unrealized losses of € 0.3 billion from interest rate changes, additional value adjustment deduction of € 0.3 billion and payment of common share dividend of € 0.2 billion. These negative effects were partially reduced by a positive contribution of € 1.0 billion from our initial public offering (IPO) of DWS Group GmbH & Co. KGaA ("DWS"). The decrease in capital demand was driven by lower economic capital usage as explained in the section "Risk Profile".

The above capital adequacy measures apply to the consolidated Deutsche Bank Group as a whole and form an integral part of our risk and capital management framework.

Leverage Ratio

We manage our balance sheet on a Group level and, where applicable, locally in each region. In the allocation of financial resources we favor business portfolios with the highest positive impact on our profitability and shareholder value. We monitor and analyze balance sheet developments and track certain market-observed balance sheet ratios. Based on this we trigger discussion and management action by the Group Risk Committee (GRC). Following the publication of the CRR/CRD 4 framework, we established a leverage ratio calculation according to that framework.

Leverage Ratio according to revised CRR/CRD 4 framework

The CRR/CRD 4 framework introduced a non-risk based leverage ratio that is intended to act as a supplementary measure to the risk based capital requirements. Its objectives are to constrain the build-up of leverage in the banking sector, helping avoid destabilizing deleveraging processes which can damage the broader financial system and the economy, and to reinforce the risk based requirements with a simple, non-risk based "backstop" measure. While the CRR/CRD 4 framework currently does not provide for a mandatory minimum leverage ratio to be complied with, the legislative proposals as part of the European Trilogue include a 3 % minimum requirement but the proposed implementation dates are different. The final Basel rules that have been published in December 2017 also include an additional leverage ratio buffer requirement for banks identified as global systemically important institutions ("G-SII") of 50 % of the G-SII buffer. Details of the implementation and the timing of the application of this additional leverage ratio buffer remain subject to finalization of the legislative process.

We calculate our leverage ratio exposure on a fully loaded basis in accordance with Article 429 of the CRR as per Delegated Regulation (EU) 2015/62 of October 10, 2014 published in the Official Journal of the European Union on January 17, 2015 amending Regulation (EU) No 575/2013. In addition, we provide the leverage ratio on a phase-in basis as displayed below in the tables.

Our total leverage ratio exposure includes derivatives, securities financing transactions (SFTs), off-balance sheet exposure and other on-balance sheet exposure (excluding derivatives and SFTs).

The leverage exposure for derivatives is calculated by using the regulatory mark-to-market method for derivatives comprising the current replacement cost plus a regulatory defined add-on for the potential future exposure. Variation margin received in cash from counterparties is deducted from the current replacement cost portion of the leverage ratio exposure measure and variation margin paid to counterparties is deducted from the leverage ratio exposure measure related to receivables recognized as an asset on the balance sheet, provided certain conditions are met. Deductions of receivables for cash variation margin provided in derivatives transactions are shown under derivative exposure in the table "Leverage ratio common disclosure" below. The effective notional amount of written credit derivatives, i.e., the notional reduced by any negative fair value changes that have been incorporated in Tier 1 capital is included in the leverage ratio exposure measure; the resulting exposure measure is further reduced by the effective notional amount of purchased credit derivative protection on the same reference name provided certain conditions are met.

The securities financing transaction (SFT) component includes the gross receivables for SFTs, which are netted with SFT payables if specific conditions are met. In addition to the gross exposure a regulatory add-on for the counterparty credit risk is included.

The off-balance sheet exposure component follows the credit risk conversion factors (CCF) of the standardized approach for credit risk (0 %, 20 %, 50 %, or 100 %), which depend on the risk category subject to a floor of 10 %.

The other on-balance sheet exposure component (excluding derivatives and SFTs) reflects the accounting values of the assets (excluding derivatives and SFTs) as well as regulatory adjustments for asset amounts deducted in determining Tier 1 capital.

The following tables show the leverage ratio exposure and the leverage ratio, both on a fully loaded basis, in accordance with the disclosure tables of the implementing technical standards (ITS) which were adopted by the European Commission via Commission Implementing Regulation (EU) 2016/200 published in the Official Journal of the European Union on February 16, 2016. For additional information, they also contain the phase-in figures.

Summary reconciliation of accounting assets and leverage ratio exposures

in € bn.	Dec 31, 2018	Dec 31, 2017
Total assets as per published financial statements	**1,348**	1,475
Adjustment for entities which are consolidated for accounting purposes but are outside the scope of regulatory consolidation	0	5
Adjustments for derivative financial instruments	(140)	(172)
Adjustment for securities financing transactions (SFTs)	14	41
Adjustment for off-balance sheet items (i.e. conversion to credit equivalent amounts of off-balance sheet exposures)	99	95
Other adjustments	(49)	(50)
Leverage ratio total exposure measure (fully loaded)	**1,273**	1,395
Leverage ratio total exposure measure (phase-in)	**1,273**	1,396

Leverage ratio common disclosure

in € bn. (unless stated otherwise)	Dec 31, 2018	Dec 31, 2017
Total derivative exposures	159	166
Total securities financing transaction exposures	103	158
Total off-balance sheet exposures	99	95
Other Assets	925	990
Asset amounts deducted in determining Tier 1 capital[1]	(13)	(14)
Tier 1 capital (fully loaded)	52.1	52.9
Leverage ratio total exposure measure (fully loaded)	1,273	1,395
Leverage ratio (fully loaded, in %)	4.1	3.8
Tier 1 capital (phase-in)	55.1	57.6
Leverage ratio total exposure measure (phase-in)	1,273	1,396
Leverage ratio (phase-in, in %)	4.3	4.1

[1] Using a fully loaded definition of Tier 1 capital. The amount using a transitional definition of Tier 1 capital is € (13) billion and € (13) billion as of December 31, 2018 and December 31, 2017, respectively.

Description of the factors that had an impact on the leverage ratio in 2018

As of December 31, 2018, our fully loaded CRR/CRD 4 leverage ratio was 4.1 % compared to 3.8 % as of December 31, 2017, taking into account as of December 31, 2018 a fully loaded Tier 1 capital of € 52.1 billion over an applicable exposure measure of € 1,273 billion (€ 52.9 billion and € 1,395 billion as of December 31, 2017, respectively).

Our CRR/CRD 4 leverage ratio according to transitional provisions was 4.3 % as of December 31, 2018 (4.1 % as of December 31, 2017), calculated as Tier 1 capital according to transitional rules of € 55.1 billion over an applicable exposure measure of € 1,273 billion (€ 57.6 billion and € 1,396 billion as of December 31, 2017, respectively). Starting with January 1, 2018, the exposure measure under transitional rules is equal to the fully loaded exposure measure while it was € 1 billion higher as of December 31, 2017 as the asset amounts deducted in determining Tier 1 capital were lower under transitional rules.

Over the year 2018, our leverage ratio exposure decreased by € 122 billion to € 1,273 billion. This is primarily driven by the reduction of € 55 billion in SFT exposures reflecting a decrease on the balance sheet in the SFT related items (securities purchased under resale agreements, securities borrowed and receivables from prime brokerage) and lower add-ons for counterparty credit risk due to extended collateral recognition. The € 65 billion reduction in Other Assets reflects the development on our balance sheet, in particular for cash and central bank / interbank balances which decreased by € 37 billion and non-derivative trading assets which decreased by € 33 billion. Derivatives decreased by € 7 billion from lower add-ons for the potential future exposure. Off-balance sheet exposures slightly increased by € 4 billion corresponding to higher notional amounts for irrevocable lending commitments.

The decrease of the leverage ratio exposure in 2018 includes a positive foreign exchange impact of € 26 billion mainly due to the depreciation of the Euro against the U.S. dollar.

Our leverage ratio calculated as the ratio of total assets under IFRS to total equity under IFRS was 20 as of December 31, 2018 compared to 22 as of December 31, 2017.

For main drivers of the Tier 1 capital development please refer to section “Regulatory Capital” in this report.

Minimum Requirement of Own Funds and Eligible Liabilities (“MREL”)

MREL Requirements

The minimum requirement for own funds and eligible liabilities (“MREL”) requirement was introduced by the European Union’s regulation establishing uniform rules and a uniform procedure for the resolution of credit institutions (Single Resolution Mechanism Regulation or “SRM Regulation”) and the European Union’s Directive establishing a framework for the recovery and resolution of credit institutions (Bank Recovery and Resolution Directive or “BRRD”) as implemented into German law by the German Recovery and Resolution Act.

The currently required level of MREL is determined by the competent resolution authorities for each supervised bank individually on a case-by-case basis, depending on the respective preferred resolution strategy. In the case of Deutsche Bank AG, MREL is determined by the Single Resolution Board (“SRB”). While there is no statutory minimum level of MREL, the BRRD and a delegated regulation set out criteria which the resolution authority must consider when determining the relevant required level of MREL. Guidance is provided through a policy published annually by the SRB.

In the second quarter of 2018, the SRB has set a binding MREL ratio for Deutsche Bank which was communicated via the German Federal Financial Supervisory Authority (Bundesanstalt für Finanzdienstleistungsaufsicht, “BaFin”). The MREL ratio on a consolidated basis has been set at 9.14 % of Total Liabilities and Own Funds (“TLOF”) and applied immediately. TLOF principally consists of IFRS total liabilities, reflecting the regulatory scope of consolidation, after consideration of derivatives netting and of own funds, i.e. regulatory capital. MREL will be reviewed annually by the SRB.

Deutsche Bank AG, as a global systemically important bank, will also become subject to global minimum standards for its Total Loss-Absorbing Capacity (“TLAC”). The TLAC requirement will be implemented by the November 2016 banking reform package, on which the European Parliament and the Council of the European Union reached a provisional political agreement in December 2018. We expect that the TLAC requirements will be effective immediately when the provisions of the banking reform package enter into force, which is currently expected to occur in the first half of 2019.

The banking reform package implements TLAC by introducing a new “Pillar 1” MREL requirement for global systemically important institutions, such as Deutsche Bank. This new requirement is based on both risk-based and non-risk-based denominators and is expected to be set at the higher of 18 % of total risk exposure and 6.75 % of the leverage ratio exposure measure following a transition period. In addition, the competent authorities will have the ability to impose an MREL add-on requirement on global systemically important institutions. TLAC and MREL requirements are specifically designed to require banks to maintain a sufficient amount of instruments which are eligible to absorb losses in resolution with the aim of ensuring that failing banks can be resolved without recourse to taxpayers’ money.

MREL ratio development

As of December 31, 2018 TLOF were € 1,058 billion and available MREL were € 118 billion, corresponding to a ratio of 11.14 %. This means that Deutsche Bank has a comfortable buffer of own funds and eligible liabilities which is € 21 billion above our MREL of € 97 billion (i.e. 9.14 % of TLOF).

MREL disclosure

in € m. (unless stated otherwise)	Dec 31, 2018
Regulatory capital elements of MREL	
Common Equity Tier 1 capital (CET 1)	47,486
Additional Tier 1 (AT1) capital instruments eligible under MREL	7,604
Tier 2 (T2) capital instruments eligible under MREL	
Tier 2 (T2) capital instruments before MREL adjustments	6,202
Tier 2 (T2) capital instruments adjustments for MREL	745
Tier 2 (T2) capital instruments eligible under MREL	6,947
Total regulatory capital elements of MREL	**62,037**
Other elements of MREL	
Senior non-preferred plain vanilla	54,852
Senior preferred plain vanilla	1,020
Total other elements of MREL	**55,872**
Total liabilities and own funds after prudential netting (TLOF)	1,058,484
MREL ratio	
MREL ratio (as percentage of TLOF)	11.14%

Own Funds and Eligible Liabilities

In order to meet the MREL requirement, Deutsche Bank needs to ensure that a sufficient amount of eligible instruments is maintained. Instruments eligible for MREL are regulatory capital instruments (“own funds”) and liabilities that meet certain criteria, which are referred to as eligible liabilities.

Own funds used for MREL excludes Tier 2 capital instruments with a remaining maturity of less than 1 year and includes the full amount of T2 capital instruments with a remaining maturity of greater than 1 year and less than 5 years which are excluded from regulatory capital

Eligible liabilities are liabilities that meet eligibility criteria which are supposed to ensure that they are structurally suited as loss-absorbing capital. As a result, eligible liabilities exclude deposits which are covered by an insurance deposit protection scheme or which are preferred under German insolvency law (e.g., deposits from private clients as well as small and medium-size enterprises). Among other things, secured liabilities, derivatives liabilities and structured notes are generally excluded as well. In addition, eligible liabilities must have a remaining time to maturity of at least one year and must either be issued under the law of a Member State of the European Union or must include a bail-in clause in their contractual terms to make write-down or conversion effective.

The banking reform package will introduce additional eligibility criteria that global systemically important institutions will have to meet with respect to TLAC and any MREL-add on requirement, most notably a subordination requirement. Effective January 1, 2017, the German Banking Act provided for a new class of statutorily subordinated debt securities that rank as “senior non-preferred” below the bank’s other senior liabilities (but in priority to the bank’s contractually subordinated liabilities, such as those qualifying as Tier 2 instruments). Following a harmonization effort by the European Union implemented in Germany effective July 21, 2018, banks are permitted to decide if a specific issuance of eligible senior debt will be in the non-preferred or in the preferred category. Any such “senior non-preferred” debt instruments issued by Deutsche Bank AG under such new rules rank on parity with its then outstanding debt instruments that were classified as “senior non-preferred” under the prior rules. Deutsche Bank predominantly relies on Deutsche Bank AG’s “senior non-preferred” debt instruments as eligible liabilities for MREL.

Credit Risk Exposure

For 2018, we provide information following the IFRS 9 accounting standard, while 2017 numbers are based on the IAS 39 accounting rules and are presented in the old format. Since the accounting requirements have changed significantly, numbers are not comparable. For further information please refer to chapter “IFRS 9 Transition Impact Analysis” in Note 2 “Recently Adopted and New Accounting Pronouncements” to the consolidated financial statement.

Counterparty credit exposure arises from our traditional non-trading lending activities which include elements such as loans and contingent liabilities, as well as from our direct trading activity with clients in certain instruments including OTC derivatives like foreign exchange forwards and Forward Rate Agreements. Default risk also arises from our positions in equity products and traded credit products such as bonds.

We define our credit exposure by taking into account all transactions where losses might occur due to the fact that counterparties may not fulfill their contractual payment obligations.

Maximum Exposure to Credit Risk

The maximum exposure to credit risk table shows the direct exposure before consideration of associated collateral held and other credit enhancements (netting and hedges) that do not qualify for offset in our financial statements for the periods specified. The table also presents exposures which are subject to impairment in accordance with IFRS 9. The netting credit enhancement component includes the effects of legally enforceable netting agreements as well as the offset of negative mark-to-markets from derivatives against pledged cash collateral. The collateral credit enhancement component mainly includes real estate, collateral in the form of cash as well as securities-related collateral. In relation to collateral we apply internally determined haircuts and additionally cap all collateral values at the level of the respective collateralized exposure.

Maximum Exposure to Credit Risk

in € m.	Maximum exposure to credit risk[1]	Subject to impairment	Dec 31, 2018 Credit Enhancements: Netting	Collateral	Guarantees and Credit derivatives[2]	Total credit enhancements
Financial assets at amortized cost[3]						
Cash and central bank balances	188,736	188,736	–	0	–	0
Interbank balances (w/o central banks)	8,885	8,885	–	4	0	4
Central bank funds sold and securities purchased under resale agreements	8,222	8,222	–	7,734	–	7,734
Securities borrowed	3,396	3,396	–	0	–	0
Loans	404,537	404,537	–	224,353	16,582	240,934
Other assets subject to credit risk[4,5]	71,899	65,010	29,073	3,199	79	32,352
Securities held to maturity	N/M	N/M	N/M	N/M	N/M	N/M
Total financial assets at amortized cost[3]	685,676	678,787	29,073	235,290	16,661	281,024
Financial assets at fair value through profit or loss[6]						
Trading assets	96,966	–	–	677	155	831
Positive market values from derivative financial instruments	320,058	–	250,231	48,548	82	298,861
Non-trading financial assets mandatory at fair value through profit or loss	97,771	–	245	67,385	0	67,630
Of which:						
Securities purchased under resale agreement	44,543	–	245	43,258	0	43,503
Securities borrowed	24,210	–	–	24,003	0	24,003
Loans	12,741	–	–	125	0	125
Financial assets designated at fair value through profit or loss	104	–	–	0	0	0
Financial assets available for sale	N/M	N/M	N/M	N/M	N/M	N/M
Total financial assets at fair value through profit or loss	514,899	–	250,476	116,610	237	367,323
Financial assets at fair value through OCI	51,182	51,182	0	1,488	520	2,008
Of which:						
Securities purchased under resale agreement	1,097	1,097	–	621	0	621
Securities borrowed	0	0	–	0	0	0
Loans	5,092	5,092	–	450	104	554
Total financial assets at fair value through OCI	51,182	51,182	–	1,488	520	2,008
Financial guarantees and other credit related contingent liabilities[7]	51,605	51,605	–	3,375	5,291	8,666
Revocable and irrevocable lending commitments and other credit related commitments[7]	212,049	211,055	–	16,418	4,734	21,152
Total off-balance sheet	263,654	262,659	–	19,793	10,025	29,818
Maximum exposure to credit risk	1,515,410	992,628	279,550	373,181	27,443	680,173

[1] Does not include credit derivative notional sold (€ 415,967 million) and credit derivative notional bought protection.
[2] Bought Credit protection is reflected with the notional of the underlying.
[3] All amounts at gross value before deductions of allowance for credit losses.
[4] All amounts at amortized cost (gross) except for qualifying hedge derivatives, which are reflected at Fair value through P&L.
[5] Includes Asset Held for Sale regardless of accounting classification.
[6] Excludes equities, other equity interests and commodities.
[7] Figures are reflected at notional amounts.

in € m.[1]	Maximum exposure to credit risk[2]	Dec 31, 2017 Credit Enhancements: Netting	Collateral	Guarantees and Credit derivatives[3]	Total credit enhancements
Cash and central bank balances	225,655	–	0	–	0
Interbank balances (w/o central banks)	9,265	–	0	7	7
Central bank funds sold and securities purchased under resale agreements	9,971	–	9,914	–	9,914
Securities borrowed	16,732	–	15,755	–	15,755
Financial assets at fair value through profit or loss[4]	550,313	286,149	136,650	265	423,065
Trading assets	98,730	–	2,635	146	2,781
Positive market values from derivative financial instruments	361,032	285,421	52,797	119	338,338
Financial assets designated at fair value through profit or loss	90,551	728	81,218	0	81,946
Of which:					
Securities purchased under resale agreement	57,843	728	56,566	0	57,294
Securities borrowed	20,254	–	20,034	0	20,034
Financial assets available for sale[4]	47,766	–	559	0	559
Loans[5]	405,621	–	211,578	20,063	231,641
Securities held to maturity	3,170	–	–	–	–
Other assets subject to credit risk	66,900	29,854	1,514	56	31,424
Financial guarantees and other credit related contingent liabilities[6]	48,212	–	4,024	6,579	10,604
Irrevocable lending commitments and other credit related commitments[6]	158,253	–	7,544	1,759	9,303
Maximum exposure to credit risk	1,541,858	316,003	387,538	28,730	732,271

[1] All amounts at carrying value unless otherwise indicated.
[2] Does not include credit derivative notional sold (€ 828,804 million) and credit derivative notional bought protection.
[3] Bought credit protection is reflected with the notional of the underlying.
[4] Excludes equities, other equity interests and commodities.
[5] Gross loans less deferred expense/unearned income before deductions of allowance for loan losses.
[6] Figures are reflected at notional amounts. Revocable commitments not included in the year were € 45.1 billion.

The overall decrease in maximum exposure to credit risk for December 31, 2018 is € 26.4 billion, mainly driven by a € 41.0 billion decrease in positive market values from derivative financial instruments and Cash and central bank balances decreased by € 36.9 billion, offset by an increase due to first time inclusion of revocable lending commitments of € 44.3 billion.

Included in the category of trading assets as of December 31, 2018, were traded bonds of € 85.2 billion (€ 87.3 billion as of December 31, 2017) of which over 79 % were investment-grade (over 82 % as of December 31, 2017).

Credit Enhancements are split into three categories: netting, collateral and guarantees / credit derivatives. Haircuts, parameter setting for regular margin calls as well as expert judgments for collateral valuation are employed to prevent market developments from leading to a build-up of uncollateralized exposures. All categories are monitored and reviewed regularly. Overall credit enhancements received are diversified and of adequate quality being largely cash, highly rated government bonds and third-party guarantees mostly from well rated banks and insurance companies. These financial institutions are domiciled mainly in European countries and the United States. Furthermore we have collateral pools of highly liquid assets and mortgages (principally consisting of residential properties mainly in Germany) for the homogeneous retail portfolio.

Main Credit Exposure Categories

The tables in this section show details about several of our main credit exposure categories, namely loans, revocable and irrevocable lending commitments, contingent liabilities over-the-counter (“OTC”) derivatives, debt securities and repo and repo-style transactions:

- “Loans” are gross loans as reported on our balance sheet at amortized cost and loans at fair value through other comprehensive income before deduction of allowance for credit losses, it also includes loans at fair value through profit and loss. This includes “Traded loans” that are bought and held for the purpose of selling them in the near term, or the material risks of which have all been hedged or sold. From a regulatory perspective the latter category principally covers trading book positions.
- “Revocable and irrevocable lending commitments” consist of the undrawn portion of revocable and irrevocable lending-related commitments.
- “Contingent liabilities” consist of financial and performance guarantees, standby letters of credit and other similar arrangements (mainly indemnity agreements).
- “OTC derivatives” are our credit exposures from over-the-counter derivative transactions that we have entered into, after netting and cash collateral received. On our balance sheet, these are included in financial assets at fair value through profit or loss or, for derivatives qualifying for hedge accounting, in other assets, in either case, before netting and cash collateral received.

– "Debt securities" include debentures, bonds, deposits, notes or commercial paper, which are issued for a fixed term and redeemable by the issuer, as reported on our balance sheet within accounting categories at amortized cost and at fair value through other comprehensive income before deduction of allowance for credit losses, it also includes category at fair value through profit and loss. This includes "Traded bonds", which are bonds, deposits, notes or commercial paper that are bought and held for the purpose of selling them in the near term. From a regulatory perspective the latter category principally covers trading book positions.
– "Repo and repo-style transactions" consist of reverse repurchase transactions, as well as securities or commodities borrowing transactions before application of netting and collateral received.

Although considered in the monitoring of maximum credit exposures, the following are not included in the details of our main credit exposure: brokerage and securities related receivables, cash and central bank balances, interbank balances (without central banks), assets held for sale, accrued interest receivables, traditional securitization positions.

Main Credit Exposure Categories by Business Divisions

Dec 31, 2018

	Loans				Off-balance sheet		OTC derivatives
in € m.	at amortized cost[1]	trading - at fair value through P&L	Designated / mandatory at fair value through P&L	at fair value through OCI[2]	Revocable and irrevocable lending commitments[3]	Contingent liabilities	at fair value through P&L[4]
Corporate & Investment Bank	135,078	11,462	12,532	5,092	168,332	48,871	27,028
Private & Commercial Bank	269,175	0	209	0	43,331	2,638	353
Asset Management	68	0	0	0	117	14	0
Corporate & Other	216	0	0	0	269	81	37
Total	404,537	11,462	12,741	5,092	212,049	51,605	27,417

Dec 31, 2018

	Debt Securities			Repo and repo-style transactions[7]			Total
in € m.	at amortized cost[5]	at fair value through P&L	at fair value through OCI[6]	at amortized cost[8]	at fair value through P&L	at fair value through OCI[9]	
Corporate & Investment Bank	579	88,451	1,032	11,348	64,684	0	574,488
Private & Commercial Bank	4,569	19	7,799	260	0	0	328,353
Asset Management	0	419	0	0	0	0	618
Corporate & Other	51	3,776	36,162	11	4,068	1,097	45,768
Total	5,199	92,664	44,993	11,618	68,752	1,097	949,227

[1] Includes stage 3 and stage 3 POCI loans at amortized cost amounting to € 9.1 billion as of December 31, 2018.
[2] Includes stage 3 and stage 3 POCI loans at fair value through OCI amounting to € 1 million as of December 31, 2018
[3] Includes stage 3 and stage 3 POCI off-balance sheet exposure amounting to € 599 million as of December 31, 2018.
[4] Includes the effect of netting agreements and cash collateral received where applicable. Excludes derivatives qualifying for hedge accounting.
[5] Includes stage 3 and stage 3 POCI debt securities at amortized cost amounting to € 73 million as of December 31, 2018.
[6] Includes stage 3 and stage 3 POCI debt securities at fair value through OCI amounting to € 2 million as of December 31, 2018.
[7] Before reflection of collateral and limited to securities purchased under resale agreements and securities borrowed.
[8] Includes stage 3 and stage 3 POCI repo and repo-style transactions at amortized cost amounting to € 0 as of December 31, 2018.
[9] Includes stage 3 and stage 3 POCI repo and repo-style transactions at fair value through OCI amounting to € 0 as of December 31, 2018.

Dec 31, 2017

	Loans		Off-balance sheet		OTC derivatives[3]	Debt securities		Repo and repo-style transactions	Total
in € m.	Loans[1]	Traded Loans	Irrevocable lending commit-ments[2]	Contingent liabilities	OTC derivatives[3]	Debt securities	Traded Bonds	Repo and repo-style transactions	Total
Corporate & Investment Bank	137,954	10,875	141,892	45,342	30,993	2,667	83,067	99,335	552,125
Private & Commercial Bank	267,554	1	16,201	2,802	422	14,421	0	835	302,235
Asset Management	87	0	53	16	0	39	67	0	262
Corporate & Other	26	0	107	52	15	31,124	4,130	4,630	40,084
Total	405,621	10,876	158,253	48,212	31,430	48,251	87,264	104,800	894,707

[1] Includes impaired loans amounting to € 6.2 billion as of December 31, 2017.
[2] Includes irrevocable lending commitments related to consumer credit exposure of € 10.1 billion as of December 31, 2017.
[3] Includes the effect of netting agreements and cash collateral received where applicable. Excludes derivatives qualifying for hedge accounting.
[4] Includes debt securities on financial assets available for sale and securities held to maturity.
[5] Before reflection of collateral and limited to securities purchased under resale agreements and securities borrowed.

For 2018, we provide information following the IFRS 9 accounting standard, while 2017 numbers are based on the IAS 39 accounting rules and are presented in the old format. Since the accounting requirements have changed significantly, numbers are not comparable. For further information please refer to chapter “IFRS 9 Transition Impact Analysis” in Note 2 “Recently Adopted and New Accounting Pronouncements” to the consolidated financial statement.

Our main credit exposure increased by € 54.5 billion.

- From a divisional perspective, increases in exposure are observed across all divisions. Details in respect of Corporate & Investment Bank and Private & Commercial Bank credit exposures are provided in subsequent sections. Corporate & Other primarily comprises of Treasury exposures.
- From a product perspective, significant increases in exposure have been observed on account of first time inclusion of Revocable commitments and inclusion of all Loan categories both part of the IFRS 9 introduction. This Increase has been partially offset by decrease on repos due to managed reduction.

Main Credit Exposure Categories by Industry Sectors

							Dec 31, 2018
				Loans		Off-balance sheet	OTC derivatives
in € m.	at amortized cost[1]	trading - at fair value through P&L	Designated / mandatory at fair value through P&L	at fair value through OCI[2]	Revocable and irrevocable lending commitments[3]	Contingent liabilities	at fair value through P&L[4]
Agriculture, forestry and fishing	640	15	0	0	541	40	5
Mining and quarrying	2,995	563	0	141	6,094	1,505	210
Manufacturing	28,342	786	7	1,831	45,296	11,985	1,378
Electricity, gas, steam and air conditioning supply	3,210	284	57	3	4,908	1,563	452
Water supply, sewerage, waste management and remediation activities	867	28	0	0	399	155	181
Construction	3,902	495	0	25	3,638	2,089	338
Wholesale and retail trade, repair of motor vehicles and motorcycles	20,293	488	215	875	14,380	5,058	317
Transport and storage	5,774	647	48	79	5,059	920	1,017
Accommodation and food service activities	2,026	40	0	28	1,761	195	158
Information and communication	4,372	505	29	374	17,277	2,061	793
Financial and insurance activities	77,628	3,530	11,845	882	62,739	22,191	17,415
Real estate activities	33,432	1,538	88	95	5,375	221	1,084
Professional, scientific and technical activities	6,590	239	0	190	4,172	1,708	47
Administrative and support service activities	7,381	338	169	34	4,835	451	628
Public administration and defense, compulsory social security	8,917	1,160	203	472	978	48	2,088
Education	698	1	0	0	76	18	362
Human health services and social work activities	3,483	104	0	31	1,862	124	239
Arts, entertainment and recreation	859	71	0	21	873	38	13
Other service activities	4,720	520	77	10	2,406	708	157
Activities of households as employers, undifferentiated goods- and services-producing activities of households for own use	188,407	85	2	0	29,372	522	347
Activities of extraterritorial organizations and bodies	1	25	0	0	7	6	188
Total	404,537	11,462	12,741	5,092	212,049	51,605	27,417

Dec 31, 2018

	Debt Securities			Repo and repo-style transactions[7]			Total
in € m.	at amortized cost[5]	at fair value through P&L	at fair value through OCI[6]	at amortized cost[8]	at fair value through P&L	at fair value through OCI[9]	
Agriculture, forestry and fishing	0	9	0	0	0	0	1,251
Mining and quarrying	119	481	5	0	0	0	12,113
Manufacturing	472	1,245	47	0	0	0	91,389
Electricity, gas, steam and air conditioning supply	374	631	45	0	0	0	11,527
Water supply, sewerage, waste management and remediation activities	5	36	0	0	0	0	1,670
Construction	35	585	59	0	0	0	11,165
Wholesale and retail trade, repair of motor vehicles and motorcycles	87	224	1	0	0	0	41,938
Transport and storage	100	608	55	0	0	0	14,308
Accommodation and food service activities	21	25	0	0	0	0	4,254
Information and communication	168	724	505	0	0	0	26,810
Financial and insurance activities	2,771	18,102	16,219	10,668	66,949	1,097	312,035
Real estate activities	84	1,928	23	6	28	0	43,903
Professional, scientific and technical activities	23	306	0	0	0	0	13,275
Administrative and support service activities	38	160	0	434	131	0	14,599
Public administration and defense, compulsory social security	797	63,468	27,892	510	1,631	0	108,165
Education	0	121	0	0	0	0	1,275
Human health services and social work activities	0	474	63	0	0	0	6,381
Arts, entertainment and recreation	0	398	0	0	0	0	2,273
Other service activities	43	2,691	26	0	13	0	11,371
Activities of households as employers, undifferentiated goods- and services-producing activities of households for own use	0	0	0	0	0	0	218,735
Activities of extraterritorial organizations and bodies	62	448	54	0	0	0	790
Total	5,199	92,664	44,993	11,618	68,752	1,097	949,227

[1] Includes stage 3 and stage 3 POCI loans at amortized cost amounting to € 9.1 billion as of December 31, 2018.
[2] Includes stage 3 and stage 3 POCI loans at fair value through OCI amounting to € 1 million as of December 31, 2018
[3] Includes stage 3 and stage 3 POCI off-balance sheet exposure amounting to € 599 million as of December 31, 2018.
[4] Includes the effect of netting agreements and cash collateral received where applicable. Excludes derivatives qualifying for hedge accounting.
[5] Includes stage 3 and stage 3 POCI debt securities at amortized cost amounting to € 73 million as of December 31, 2018.
[6] Includes stage 3 and stage 3 POCI debt securities at fair value through OCI amounting to € 2 million as of December 31, 2018.
[7] Before reflection of collateral and limited to securities purchased under resale agreements and securities borrowed.
[8] Includes stage 3 and stage 3 POCI repo and repo-style transactions at amortized cost amounting to € 0 as of December 31, 2018.
[9] Includes stage 3 and stage 3 POCI repo and repo-style transactions at fair value through OCI amounting to € 0 as of December 31, 2018.

Dec 31, 2017

	Loans		Off-balance sheet		OTC derivatives[3]	Debt securities		Repo and repo-style transactions	Total
in € m.	Loans[1]	Traded Loans	Irrevocable lending commit-ments[2]	Contingent liabilities	OTC derivatives[3]	Debt securities[4]	Traded Bonds	Repo and repo-style transactions[5]	Total
Financial intermediation	52,087	1,635	31,839	9,407	17,991	15,590	16,982	100,006	245,536
Fund management activities	18,668	306	6,213	173	1,232	53	737	44	27,426
Manufacturing	27,569	628	38,450	14,893	1,347	294	1,991	0	85,172
Wholesale and retail trade	19,246	388	10,684	5,623	413	50	501	0	36,905
Households	186,687	74	9,975	671	398	0	0	0	197,805
Commercial real estate activities	29,180	2,080	4,343	508	1,185	1	1,468	41	38,806
Public sector	13,510	611	844	138	3,510	30,301	54,989	4,694	108,597
Other[6]	58,674	5,154	55,904	16,799	5,353	1,963	10,596	16	154,459
Total	405,621	10,876	158,253	48,212	31,430	48,251	87,264	104,800	894,707

[1] Includes impaired loans amounting to € 6.2 billion as of December 31, 2017.
[2] Includes irrevocable lending commitments related to consumer credit exposure of € 10.1 billion as of December 31, 2017.
[3] Includes the effect of netting agreements and cash collateral received where applicable. Excludes derivatives qualifying for hedge accounting.
[4] Includes debt securities on financial assets available for sale and securities held to maturity.
[5] Before reflection of collateral and limited to securities purchased under resale agreements and securities borrowed.
[6] Major industries within Other were: Real estate other than commercial (€ 63.4 billion), Transport; storage and communication (€ 28.2 billion), Other community and personal social services (€ 14.1 billion), Electricity; gas and water supply (€ 12.8 billion), Construction (€ 11.7 billion) and Mining and quarrying (€ 10.0 billion).

The above tables give an overview of our credit exposure by industry, allocated based on the NACE code of the counterparty. NACE (Nomenclature des Activités Économiques dans la Communauté Européenne) is a standard European industry classification system. The 2018 table provides further breakdown on industry to increase the transparency.

The portfolio is subject to the same credit underwriting requirements stipulated in our “Principles for Managing Credit Risk”, including various controls according to single name, country, industry and product-specific concentration.

Material transactions, such as loans underwritten with the intention to syndicate, are subject to review by senior credit risk management professionals and (depending upon size) an underwriting credit committee and/or the Management Board. High emphasis is placed on structuring such transactions so that de-risking is achieved in a timely and cost-effective manner. Exposures within these categories are mostly to good quality borrowers and also subject to further risk mitigation as outlined in the description of our Credit Portfolio Strategies Group’s activities.

Our household loans exposure is principally associated with our Private & Commercial Bank portfolios.

Our commercial real estate loans, primarily in the U.S. and Europe, are generally secured by first mortgages on the underlying real estate property. Credit underwriting policy guidelines provide that LTV ratios of generally less than 75 % are maintained. Additionally, given the significance of the underlying collateral independent external appraisals are commissioned for all secured loans by a valuation team (part of the independent Credit Risk Management function) which is also responsible for reviewing and challenging the reported real estate values regularly.

The Commercial Real Estate Group only in exceptional cases retains mezzanine or other junior tranches of debt (although we do underwrite mezzanine loans). Loans originated for distribution are carefully monitored under a pipeline limit. Securitized loan positions are entirely sold (except where regulation requires retention of economic risk), while we frequently retain a portion of syndicated bank loans. This hold portfolio is also subject to the aforementioned principles and policy guidelines. We also participate in conservatively underwritten unsecured lines of credit to well-capitalized real estate investment trusts and other public companies, which are generally investment-grade. We provide both fixed rate (generally securitized product) and floating rate loans, with interest rate exposure subject to hedging arrangements. In addition, sub-performing and non-performing loans and pools of loans are acquired from other financial institutions at generally substantial discounts to both the notional amounts and current collateral values. The underwriting process for these is stringent and the exposure is managed under separate portfolio limits. Commercial real estate property valuations and rental incomes can be significantly impacted by macro-economic conditions and underlying properties to idiosyncratic events. Accordingly, the portfolio is categorized as higher risk and hence subject to the aforementioned tight restrictions on concentration.

Our credit exposure to our ten largest counterparties accounted for 8 % of our aggregated total credit exposure in these categories as of December 31, 2018 compared with 8 % as of December 31, 2017. Our top ten counterparty exposures were with well-rated counterparties or otherwise related to structured trades which show high levels of risk mitigation.

Overall credit exposure to the industry sector Financial and Insurance Activities comprise predominantly investment-grade exposures.

Total Loans across all applicable measurement categories amounting to € 93.9 billion, Total Repo and Repo Style transaction across all applicable measurement categories amounting to €78.7 billion and Commitment activities amounting to € 62.7 billion as of December 31, 2018 within Financial and Insurance activities is principally associated with Corporate & Investment Bank Portfolios and are majorly held in North America and Europe region.

The statement on focus industries below follows the Credit Risk Management view on industries, which can differ from the allocation on the basis of NACE codes.

As of December 31, 2018 our loan and contingent liabilities exposure to the focus industry “Shipping & other maritime” has been significantly reduced from € 4.8 billion to € 3.3 billion. Besides the classic ship lending this includes € 0.6 billion for port facilities and yards, € 0.2 billion for traded loan positions and € 0.3 billion for shipping securitizations, an area which was expanded over the year and which accounts for € 0.7 billion of the additional € 1 billion irrevocable undrawn lending commitments. In line with our strategy, the long-term classic ship lending exposure has been significantly de-risked by circa € 1.5 billion to € 2.2 billion as a result of various single ship or loan sales and a portfolio loan sale transaction involving € 0.8 billion of underlying loans. Even though the transaction was successfully executed and settled in July 2018, we expect to realize € 0.3 billion loan of reductions from this transaction only in 2019 due to a delayed loan transfer process. The remaining ship lending portfolio shows improved credit metrics resulting in a reduction of risk weighted assets by circa € 1 billion, and continues to benefit from a satisfactory diversification across sectors and client groups. Driven by improving bulker and container markets as well as favorable sales prices, there were overall credit loss provision releases in 2018 and the portfolio will no longer be reported as a focus portfolio.

Main credit exposure categories by geographical region

Dec 31, 2018

	Loans				Off-balance sheet		OTC derivatives
in € m.	at amortized cost[1]	trading - at fair value through P&L	Designated / mandatory at fair value through P&L	at fair value through OCI[2]	Revocable and irrevocable lending commitments[3]	Contingent liabilities	at fair value through P&L[4]
Europe	293,979	3,829	9,905	1,785	111,675	31,174	16,390
Of which:							
Germany	207,429	497	304	390	61,587	12,193	1,403
United Kingdom	5,553	671	1,331	278	7,304	3,127	5,766
France	2,415	123	212	81	5,025	2,460	826
Luxembourg	7,543	533	6,920	41	6,682	875	933
Italy	21,363	373	99	0	3,417	3,416	1,174
Netherlands	7,968	125	41	384	9,384	1,470	1,984
Spain	16,729	320	57	67	2,507	3,167	931
Ireland	5,792	230	324	166	3,430	153	772
Switzerland	5,960	31	127	208	3,996	2,419	251
Poland	3,135	0	5	0	301	132	53
Belgium	988	2	53	84	1,986	395	264
Other Europe	9,104	924	431	85	6,057	1,366	2,033
North America	65,716	4,383	2,365	2,311	91,672	9,274	8,011
Of which:							
U.S.	53,195	4,036	2,358	2,209	85,445	8,797	6,196
Cayman Islands	2,562	55	7	0	2,151	17	756
Canada	2,181	48	0	102	2,649	76	828
Other North America	7,778	244	0	0	1,427	384	232
Asia/Pacific	38,176	1,794	471	863	7,052	9,591	2,391
Of which:							
Japan	1,682	37	0	123	334	236	362
Australia	1,224	177	417	11	2,016	135	358
India	7,355	188	18	3	782	2,061	115
China	4,530	60	0	18	346	1,101	399
Singapore	6,136	238	0	109	1,063	992	192
Hong Kong	4,026	203	0	17	1,023	586	138
Other Asia/Pacific	13,223	893	37	582	1,489	4,480	827
Other geographical areas	6,667	1,456	0	132	1,651	1,566	625
Total	404,537	11,462	12,741	5,092	212,049	51,605	27,417

Dec 31, 2018

in € m.	Debt Securities			Repo and repo-style transactions[7]			Total
	at amortized cost[5]	at fair value through P&L	at fair value through OCI[6]	at amortized cost[8]	at fair value through P&L	at fair value through OCI[9]	
Europe	4,467	36,459	24,922	4,394	14,342	316	553,638
Of which:							
Germany	1,443	6,685	9,597	925	899	2	303,352
United Kingdom	182	14,552	2,499	966	4,379	0	46,608
France	714	3,061	1,559	0	3,681	0	20,157
Luxembourg	167	1,332	3,474	89	1,206	0	29,796
Italy	249	2,707	1,146	578	1,040	0	35,563
Netherlands	592	1,785	1,219	0	179	0	25,130
Spain	168	2,146	504	379	529	0	27,504
Ireland	91	920	215	0	1,277	0	13,370
Switzerland	40	560	119	112	316	0	14,139
Poland	0	130	2,387	0	0	0	6,144
Belgium	139	542	481	0	0	0	4,935
Other Europe	682	2,038	1,724	1,344	836	315	26,938
North America	237	34,356	14,491	1,942	45,548	0	280,306
Of which:							
U.S.	220	33,112	13,915	1,275	30,428	0	241,186
Cayman Islands	0	631	9	655	14,094	0	20,937
Canada	0	419	556	0	847	0	7,707
Other North America	17	194	10	12	178	0	10,476
Asia/Pacific	495	19,343	5,037	4,567	8,625	226	98,632
Of which:							
Japan	63	3,142	8	2,752	5,808	0	14,545
Australia	0	3,977	510	19	523	0	9,366
India	267	2,172	1,849	0	79	61	14,948
China	0	2,124	0	0	614	0	9,192
Singapore	114	1,403	671	0	325	0	11,242
Hong Kong	0	520	222	0	11	0	6,746
Other Asia/Pacific	51	6,006	1,777	1,797	1,266	165	32,594
Other geographical areas	0	2,506	543	714	237	555	16,651
Total	5,199	92,664	44,993	11,618	68,752	1,097	949,227

[1] Includes stage 3 and stage 3 POCI loans at amortized cost amounting to € 9.1 billion as of December 31, 2018.
[2] Includes stage 3 and stage 3 POCI loans at fair value through OCI amounting to € 1 million as of December 31, 2018.
[3] Includes stage 3 and stage 3 POCI off-balance sheet exposure amounting to € 599 million as of December 31, 2018.
[4] Includes the effect of netting agreements and cash collateral received where applicable. Excludes derivatives qualifying for hedge accounting.
[5] Includes stage 3 and stage 3 POCI debt securities at amortized cost amounting to € 73 million as of December 31, 2018.
[6] Includes stage 3 and stage 3 POCI debt securities at fair value through OCI amounting to € 2 million as of December 31, 2018.
[7] Before reflection of collateral and limited to securities purchased under resale agreements and securities borrowed.
[8] Includes stage 3 and stage 3 POCI repo and repo-style transactions at amortized cost amounting to € 0 as of December 31, 2018.
[9] Includes stage 3 and stage 3 POCI repo and repo-style transactions at fair value through OCI amounting to € 0 as of December 31, 2018.

	Dec 31, 2017								
	Loans		Off-balance sheet		OTC derivatives[3]	Debt securities		Repo and repo-style transactions[5]	Total
in € m.	Loans[1]	Traded Loans	Irrevocable lending commit-ments[2]	Contingent liabilities	OTC derivatives[3]	Debt securities[4]	Traded Bonds	Repo and repo-style transactions[5]	Total
Europe	299,937	3,149	65,739	27,574	18,353	35,304	33,120	26,648	509,825
Of which:									
Germany	199,867	146	27,483	10,739	1,661	12,414	4,912	3,421	260,644
United Kingdom	6,895	190	5,748	1,514	5,849	864	9,668	10,123	40,851
France	2,651	242	8,265	1,266	1,231	3,597	3,096	3,442	23,788
Luxembourg	15,983	247	2,858	484	1,102	6,142	1,017	711	28,544
Italy	21,836	497	1,642	3,657	1,750	642	4,167	820	35,012
Netherlands	8,304	493	6,498	1,627	2,292	2,793	2,022	82	24,112
Spain	13,250	227	1,866	3,046	704	946	2,188	987	23,213
Ireland	4,415	272	1,843	481	972	655	1,022	2,673	12,333
Switzerland	6,922	65	2,324	2,488	313	163	644	416	13,336
Poland	7,871	36	807	234	26	1,820	296	0	11,089
Belgium	1,177	12	1,280	405	352	1,574	601	0	5,401
Other Europe	10,765	723	5,124	1,633	2,099	3,696	3,486	3,975	31,500
North America	64,086	5,129	85,358	10,031	10,015	10,986	31,636	56,776	274,017
Of which:									
U.S.	53,795	4,750	80,776	9,489	8,036	10,623	29,972	44,659	242,101
Cayman Islands	2,312	103	1,951	52	700	17	1,041	9,162	15,336
Canada	838	87	1,564	110	1,092	346	272	1,688	5,996
Other North America	7,141	190	1,068	380	187	0	351	1,267	10,584
Asia/Pacific	34,469	1,735	4,447	8,967	2,254	1,025	20,319	19,909	93,126
Of which:									
Japan	1,093	66	276	349	366	15	4,760	10,354	17,278
Australia	1,477	310	1,076	128	277	588	3,716	1,453	9,026
India	7,034	86	717	1,645	219	0	3,973	1,517	15,191
China	4,393	2	378	1,195	263	0	836	3,130	10,198
Singapore	4,946	75	419	794	177	0	927	220	7,559
Hong Kong	4,224	551	385	598	144	2	399	45	6,348
Other Asia/Pacific	11,300	644	1,197	4,259	808	419	5,707	3,190	27,526
Other geographical areas	7,130	862	2,708	1,639	808	936	2,190	1,466	17,739
Total	405,621	10,876	158,253	48,212	31,430	48,251	87,264	104,800	894,707

[1] Includes impaired loans amounting to € 6.2 billion as of December 31, 2017.
[2] Includes irrevocable lending commitments related to consumer credit exposure of € 10.1 billion as of December 31, 2017.
[3] Includes the effect of netting agreements and cash collateral received where applicable. Excludes derivatives qualifying for hedge accounting.
[4] Includes debt securities on financial assets available for sale and securities held to maturity.
[5] Before reflection of collateral and limited to securities purchased under resale agreements and securities borrowed.

The above tables give an overview of our credit exposure by geographical region, allocated based on the counterparty's country of domicile, see also section "Credit Exposure to Certain Eurozone Countries" of this report for a detailed discussion of the "country of domicile view".

Our largest concentration of credit risk within loans from a regional perspective is in our home market Germany, with a significant share in households, which includes the majority of our mortgage lending business.

Within OTC derivatives, tradable assets as well as repo and repo-style transactions, our largest concentrations from a regional perspective were in Europe and North America.

Credit Exposure to Certain Eurozone Countries

Certain Eurozone countries are presented within the table below due to concerns relating to sovereign risk.

In our "country of domicile view" we aggregate credit risk exposures to counterparties by allocating them to the domicile of the primary counterparty, irrespective of any link to other counterparties, or in relation to credit default swaps underlying reference assets from, these Eurozone countries. Hence we also include counterparties whose group parent is located outside of these countries and exposures to special purpose entities whose underlying assets are from entities domiciled in other countries.

The following table, which is based on the country of domicile view, presents our gross position, the included amount thereof of undrawn / contingent exposure and our net exposure to these Eurozone countries. The gross exposure reflects our net credit risk exposure grossed up for net credit derivative protection purchased with underlying reference assets domiciled in one of these countries, guarantees received and collateral. Such collateral is particularly held with respect to the retail portfolio, but also for financial institutions predominantly based on derivative margining arrangements, as well as for corporates. In addition, the amounts also reflect the allowance for credit losses. In some cases, our counterparties' ability to draw on undrawn commitments is limited by terms included in the specific contractual documentation. Net credit exposures are presented after effects of collateral held, guarantees received and further risk mitigation, including net notional amounts of credit derivatives for protection sold/bought. The provided gross and net exposures to certain European countries do not include credit derivative tranches and credit derivatives in relation to our correlation business which, by design, is structured to be credit risk neutral. Additionally, the tranche and correlated nature of these positions does not allow a meaningful disaggregated notional presentation by country, e.g., as identical notional exposures represent different levels of risk for different tranche levels.

Gross position, included undrawn exposure and net exposure to certain Eurozone countries – Country of Domicile View

	Sovereign		Financial Institutions		Corporates		Individuals		Other		Total	
in € m.	Dec 31, 2018	Dec 31, 2017	Dec 31, 2018	Dec 31, 2017	Dec 31, 2018	Dec 31, 2017	Dec 31, 2018	Dec 31, 2017	Dec 31, 2018	Dec 31, 2017	Dec 31, 2018[1]	Dec 31, 2017
Greece												
Gross	53	55	821	734	406	526	5	5	1	0	1,286	1,320
Undrawn / contingent	0	0	35	30	4	5	1	0	0	0	41	36
Net	35	38	277	270	(5)	8	2	1	1	0	311	317
Ireland												
Gross	418	865	662	927	9,016	7,556	26	31	3,875[2]	2,275[2]	13,998	11,654
Undrawn / contingent	0	0	23	4	3,279	2,005	1	0	802[2]	316[2]	4,105	2,326
Net	339	717	198	477	6,186	4,420	6	6	3,777[2]	2,275[2]	10,506	7,895
Italy												
Gross	3,628	2,875	3,188	3,338	11,893	12,050	18,449	16,489	264	147	37,422	34,898
Undrawn / contingent	1	13	34	28	5,211	5,162	1,790	96	0	0	7,035	5,300
Net	2,538	1,015	634	672	7,864	8,202	9,997	7,633	264	146	21,296	17,669
Portugal												
Gross	(204)	(227)	64	185	888	1,329	14	1,757	27	80	789	3,123
Undrawn / contingent	0	0	32	75	382	374	5	24	0	0	419	474
Net	(122)	(223)	61	115	832	893	7	134	27	80	805	998
Spain												
Gross	1,779	1,672	1,575	1,301	12,597	9,106	9,990	9,570	167	128	26,108	21,777
Undrawn / contingent	0	0	184	225	4,890	4,583	533	259	18	0	5,625	5,068
Net	1,766	1,554	910	552	10,257	7,113	2,668	2,117	256	128	15,857	11,464
Total gross	**5,674**	5,240	**6,310**	6,485	**34,800**	30,566	**28,484**	27,851	**4,335**	2,629	**79,603**	72,771
Total Undrawn / contingent	**1**	14	**307**	364	**13,767**	12,130	**2,331**	380	**819**	316	**17,225**	13,203
Total net[3]	**4,555**	3,102	**2,080**	2,086	**25,134**	20,637	**12,680**	9,891	**4,325**	2,629	**48,775**	38,344

[1] Approximately 75 % of the overall exposure as per December 31, 2018 will mature within the next 5 years.
[2] Other exposures to Ireland include exposures to counterparties where the domicile of the group parent is located outside of Ireland as well as exposures to special purpose entities whose underlying assets are from entities domiciled in other countries.
[3] Total net exposure excludes credit valuation reserves for derivatives amounting to € 86.3 million as of December 31, 2018 and € 64.6 million as of December 31, 2017.
[4] Revocable commitments not included in the year were € 2.5 billion.

Net exposure to the above selected Eurozone countries increased by € 10.4 billion in 2018 driven by increased exposure in Spain, Italy and Ireland. Further, movement of € 2.5 billion in net exposure is due to first time inclusion of revocable loan commitments as part of the IFRS 9 introduction.

Sovereign Credit Risk Exposure to Certain Eurozone Countries

The amounts below reflect a net "country of domicile view" of our sovereign exposure.

Sovereign credit risk exposure to certain Eurozone countries

	Dec 31, 2018				Dec 31, 2017			
in € m.	Direct Sovereign exposure[1]	Net Notional of CDS referencing sovereign debt	Net sovereign exposure	Memo Item: Net fair value of CDS referencing sovereign debt[2]	Direct Sovereign exposure[1]	Net Notional of CDS referencing sovereign debt	Net sovereign exposure	Memo Item: Net fair value of CDS referencing sovereign debt[2]
Greece	53	(18)	35	0	55	(17)	38	0
Ireland	334	5	339	(0)	709	9	717	0
Italy	3,627	(1,089)	2,538	58	2,834	(1,818)	1,016	49
Portugal	(204)	82	(122)	5	(227)	3	(223)	0
Spain	1,773	(8)	1,766	27	1,669	(115)	1,554	35
Total	**5,583**	**(1,028)**	**4,555**	**90**	5,040	(1,938)	3,102	84

[1] Includes sovereign debt classified as financial assets/liabilities at fair value through profit or loss, available for sale (December 2017) and loans carried at amortized cost. Direct Sovereign exposure is net of guarantees received and collateral.
[2] The amounts reflect the net fair value in relation to credit default swaps referencing sovereign debt of the respective country representing the counterparty credit risk.

The increase of € 1.5 billion in net sovereign exposure compared with year-end 2017 mainly reflects increases in debt securities in Italy.

Credit Exposure Classification

We also classify our credit exposure along our business divisions, which is in line with the Business Aligned Risk Management split within the Risk function: Corporate & Investment Bank (CIB) credit exposure and Private & Commercial Bank (PCB) credit exposure.

- Our CIB credit exposure consists of all credit exposure arising from loan, off-balance sheet, derivatives, debt securities or repo transactions in our Corporate & Investment Bank division.
- Our PCB credit exposure consists of all credit exposure in our Private & Commercial Bank division, predominantly from loans and off-balance sheet exposures.

For 2018, we provide updated information following the split along business divisions, while numbers for 2017 are based on the historically applied split of the portfolio into Consumer credit exposure (consisting of smaller-balance standardized homogeneous loans) and Corporate credit exposure (all remaining exposures). Furthermore, we have enhanced our reporting by now including all exposures in our Main Credit Exposure Categories in this section. Numbers are therefore not comparable.

CIB Credit Exposure

The tables below show our CIB Credit Exposure by product types and internal rating bands. Please refer to section "Measuring Credit Risk" for more details about our internal ratings.

Main CIB credit exposure categories according to our internal creditworthiness categories of our counterparties – gross

in € m. (unless stated otherwise)		Dec 31, 2018						
					Loans	Off-balance sheet		OTC derivatives
Ratingband	Probability of default in %[1]	at amortized cost	trading - at fair value through P&L	Designated / mandatory at fair value through P&L	at fair value through OCI	Revocable and irrevocable lending commitments	Contingent liabilities	at fair value through P&L[2]
iAAA–iAA	> 0.00 ≤ 0.04	12,632	25	7,879	164	20,043	4,398	9,926
iA	> 0.04 ≤ 0.11	29,455	266	518	775	44,927	10,104	7,113
iBBB	> 0.11 ≤ 0.5	29,761	1,061	519	2,734	54,477	23,743	5,789
iBB	> 0.5 ≤ 2.27	31,393	5,384	1,587	1,333	27,754	5,888	3,006
iB	> 2.27 ≤ 10.22	19,828	3,522	1,665	84	16,263	3,504	996
iCCC and below	> 10.22 ≤ 100	12,009	1,204	364	1	4,868	1,234	197
Total		135,078	11,462	12,532	5,092	168,332	48,871	27,028

in € m. (unless stated otherwise)		Dec 31, 2018						
				Debt Securities		Repo and repo-style transactions		
Ratingband	Probability of default in %[1]	at amortized cost	at fair value through P&L	at fair value through OCI	at amortized cost	at fair value through P&L	at fair value through OCI	Total
iAAA–iAA	> 0.00 ≤ 0.04	87	54,365	8	2,929	33,339	0	145,795
iA	> 0.04 ≤ 0.11	38	6,885	122	1,279	9,967	0	111,448
iBBB	> 0.11 ≤ 0.5	112	8,686	114	275	6,190	0	133,459
iBB	> 0.5 ≤ 2.27	189	16,657	639	3,775	14,236	0	111,841
iB	> 2.27 ≤ 10.22	105	1,365	149	2,704	891	0	51,078
iCCC and below	> 10.22 ≤ 100	49	492	0	387	61	0	20,867
Total		579	88,451	1,032	11,348	64,684	0	574,488

[1] Reflects the probability of default for a one year time horizon.
[2] Includes the effect of netting agreements and cash collateral received where applicable.

Main CIB credit exposure categories according to our internal creditworthiness categories of our counterparties – net

in € m. (unless stated otherwise)		Dec 31, 2018[1]						
					Loans	Off-balance sheet		OTC derivatives
Ratingband	Probability of default in %[2]	at amortized cost	trading - at fair value through P&L	Designated / mandatory at fair value through P&L	at fair value through OCI	Revocable and irrevocable lending commitments	Contingent liabilities	at fair value through P&L
iAAA–iAA	> 0.00 ≤ 0.04	10,064	25	7,755	164	18,804	3,872	3,890
iA	> 0.04 ≤ 0.11	25,535	266	518	775	43,491	8,444	3,292
iBBB	> 0.11 ≤ 0.5	22,151	729	518	2,641	52,159	21,321	3,637
iBB	> 0.5 ≤ 2.27	18,076	4,066	1,018	1,302	26,568	4,630	2,351
iB	> 2.27 ≤ 10.22	6,434	2,880	655	9	15,083	2,262	776
iCCC and below	> 10.22 ≤ 100	3,571	1,049	364	1	4,172	701	69
Total		85,831	9,014	10,828	4,892	160,277	41,229	14,015

in € m. (unless stated otherwise)		Debt Securities			Repo and repo-style transactions			Dec 31, 2018[1]
Ratingband	Probability of default in %[2]	at amortized cost	at fair value through P&L	at fair value through OCI	at amortized cost	at fair value through P&L	at fair value through OCI	Total
iAAA–iAA	> 0.00 ≤ 0.04	87	54,365	8	1,863	359	0	101,256
iA	> 0.04 ≤ 0.11	38	6,885	122	51	269	0	89,686
iBBB	> 0.11 ≤ 0.5	112	8,686	114	115	112	0	112,294
iBB	> 0.5 ≤ 2.27	132	16,519	640	1,331	602	0	77,236
iB	> 2.27 ≤ 10.22	105	1,365	150	0	25	0	29,742
iCCC and below	> 10.22 ≤ 100	49	492	0	367	0	0	10,837
Total		523	88,313	1,033	3,728	1,367	0	421,050

[1] Net of eligible collateral, guarantees and hedges based on IFRS requirements.
[2] Reflects the probability of default for a one year time horizon.

Corporate Credit Exposure

The tables below show our Corporate Credit Exposure for 2017 by product types and internal rating bands.

Main corporate credit exposure categories according to our internal creditworthiness categories of our counterparties – gross

in € m. (unless stated otherwise)							Dec 31, 2017
Ratingband	Probability of default in %[1]	Loans	Irrevocable lending commitments[2]	Contingent liabilities	OTC derivatives[3]	Debt securities[4]	Total
iAAA–iAA	> 0.00 ≤ 0.04	38,743	18,643	5,108	13,025	39,405	114,924
iA	> 0.04 ≤ 0.11	39,428	44,388	13,899	8,416	6,277	112,407
iBBB	> 0.11 ≤ 0.5	56,245	51,021	16,165	5,204	2,174	130,809
iBB	> 0.5 ≤ 2.27	41,888	25,652	7,882	3,390	371	79,183
iB	> 2.27 ≤ 10.22	23,556	15,286	3,434	1,174	5	43,456
iCCC and below	> 10.22 ≤ 100	13,688	3,264	1,723	220	19	18,913
Total		213,547	158,253	48,212	31,430	48,251	499,693

[1] Reflects the probability of default for a one year time horizon.
[2] Includes irrevocable lending commitments related to consumer credit exposure of € 10.1 billion as of December 31, 2017.
[3] Includes the effect of netting agreements and cash collateral received where applicable.
[4] Includes debt securities on financial assets available for sale and securities held to maturity.

Main corporate credit exposure categories according to our internal creditworthiness categories of our counterparties – net

in € m. (unless stated otherwise)							Dec 31, 2017[1]
Rating band	Probability of default in %[2]	Loans	Irrevocable lending commitments	Contingent liabilities	OTC derivatives	Debt securities	Total
iAAA–iAA	> 0.00 ≤ 0.04	27,580	18,281	4,272	7,370	39,405	96,907
iA	> 0.04 ≤ 0.11	25,355	42,104	11,882	6,528	6,277	92,146
iBBB	> 0.11 ≤ 0.5	32,131	49,095	13,461	4,490	2,174	101,351
iBB	> 0.5 ≤ 2.27	18,845	24,056	5,267	2,506	371	51,046
iB	> 2.27 ≤ 10.22	8,306	14,130	2,097	1,106	5	25,645
iCCC and below	> 10.22 ≤ 100	4,157	2,540	629	216	15	7,557
Total		116,374	150,206	37,608	22,216	48,247	374,652

[1] Net of eligible collateral, guarantees and hedges based on IFRS requirements.
[2] Reflects the probability of default for a one year time horizon.

CPSG Risk Mitigation for the CIB Credit Exposure

Our Credit Portfolio Strategies Group ("CPSG") helps mitigate the risk of our corporate credit exposures. The notional amount of CPSG's risk reduction activities decreased from € 32.7 billion as of December 31, 2017, to € 31.1 billion as of December 31, 2018.

As of year-end 2018, CPSG mitigated the credit risk of € 30.9 billion of loans and lending-related commitments, through synthetic collateralized loan obligations supported predominantly by financial guarantees. This position totaled € 32 billion as of December 31, 2017.

CPSG also held credit derivatives with an underlying notional amount of € 0.2 billion as of December 31, 2018. The position totaled € 0.7 billion as of December 31, 2017. The credit derivatives used for our portfolio management activities are accounted for at fair value.

PCB credit exposure

PCB credit exposure, credit exposure stage 3 and net credit costs

	Total exposure in € m.	of which loan book in € m.	Credit exposure stage 3 in € m.	Net credit costs as a % of total exposure[1]
	Dec 31, 2018	Dec 31, 2018	Dec 31, 2018	Dec 31, 2018
PCB Germany (excl. WM)	242,277	195,435	2,737	0.09%
Consumer Finance	33,392	16,029	905	0.66%
Mortgage	153,040	143,985	1,397	(0.01%)
Business Finance	28,039	20,582	357	0.14%
Commercial Mortgage	10,102	9,660	67	(0.09%)
Financial Markets	17,099	4,574	10	(0.01%)
Other	605	605	0	0%
PCC International	38,598	34,119	1,825	0.44%
Consumer Finance	11,056	8,342	381	0.86%
Mortgage	17,419	17,333	835	0%
Business Finance	9,119	8,400	608	0.82%
Other	1,005	44	2	0%
Wealth Management	47,479	39,830	853	0.02%
Total PCB credit exposure	**328,353**	**269,384**	**5,415**	**0.12%**

[1] Net credit costs for the twelve months period ended at the respective balance sheet date divided by the total exposure at that balance sheet date.

The tables below presents our Consumer Credit Exposure for 2017.

Consumer credit exposure, consumer loan delinquencies and net credit costs

	Total exposure in € m.[1]	90 days or more past due as a % of total exposure[1]	Net credit costs as a % of total exposure[2]
	Dec 31, 2017[3]	Dec 31, 2017[3]	Dec 31, 2017[3]
Consumer credit exposure Germany:	153,728	0.73	0.12
Consumer and small business financing	21,224	2.96	1.07
Mortgage lending	132,505	0.37	(0.03)
Consumer credit exposure outside Germany	38,345	3.77	0.39
Consumer and small business financing	15,298	6.54	0.78
Mortgage lending	23,047	1.93	0.12
Total consumer credit exposure	**192,074**	**1.34**	**0.17**

[1] Includes impaired loans amounting to € 2.8 billion as of December 31, 2017
[2] Net credit costs for the twelve months period ended at the respective balance sheet date divided by the exposure at that balance sheet date.
[3] Total Exposure above represents Loans at amortized cost basis IAS 39 accounting rules applicable on December 31, 2017.

Consumer finance is divided into personal instalment loans, credit lines and credit cards. Consumer finance business is uncollateralized, loan risk depends on client quality. Various lending requirements are stipulated, including (but not limited to) client rating, maximum loan amounts and maximum tenors, and are adapted to regional conditions and/or circumstances of the borrower (i.e., for consumer loans a maximum loan amount taking into account customer net income). Given the largely homogeneous nature of this portfolio, counterparty credit-worthiness and ratings are predominately derived by utilizing an automated decision engine.

Mortgage business is principally the financing of owner-occupied residential properties (minor focus on buy-to-let and commercial properties) sold by various business channels in Europe, primarily in Germany but also in Spain and Italy. The level of credit risk of the mortgage loan portfolio is determined by assessing the quality of the client and the underlying collateral. The loan amounts are generally larger than consumer finance loans and they are extended for longer time horizons. Based on our underwriting criteria and processes and the diversified portfolio (customers/properties) with low loan-to-value (LTV) ratios, the mortgage portfolio is categorized as lower risk, while consumer finance is categorized as medium risk.

Business finance represents credit products for small businesses, SME up to large corporates. Products range from current accounts and credit lines to investment loans or revolving facilities, factoring and leasing. Smaller clients below a turnover of € 2.5 million are limited to current accounts and loans. Clients are located primarily in Germany, but credit can also be extended to subsidiaries abroad, mostly in Europe. The debtors of factoring clients may be located worldwide. The respective credit exposure is usually insured through Hermes guarantees or trade insurance.

Commercial mortgage business is the financing of commercial properties, mostly office, retail, hotels and residential properties. Financing is made via SPV, through investment funds or directly. Focus locations are prime real estate locations primarily in Western Europe with Germany as the most important market.

Financial Market represents treasury investments in corporates, banks and financial institutions as well as sovereigns. Products are mostly covered and uncovered bonds, in loan exposure the majority represents Bundesbank exposure as well as loans to German sub-sovereigns and public institutions.

The Wealth Management Business Unit offers customized wealth management solutions and private banking services including discretionary portfolio management and traditional and alternative investment solutions, complemented by structured risk management, wealth planning, lending and family office services for wealth, high-net-worth (HNW) and ultra-high-net-worth (UHNW) individuals and family offices. Wealth Management's total exposure is divided into Lombard Lending (against readily marketable liquid collateral / securities) and Structured Lending (against less liquid collateral). While the level of credit risk for the Lombard portfolio is determined by assessing the quality of the underlying collateral, the level of credit risk for the Structured portfolio is determined by assessing both the quality of the client and the collateral. Products range from secured lombard and mortgage loans to current accounts (Europe only), credit lines and other loans; to a lesser extent derivatives and contingencies. Clients are located globally.

According to the new scope of this chapter, the loan to value for December 2018 is calculated for the PCB mortgage portfolio instead of the consumer mortgage portfolio.

PCB mortgage loan-to-value[1]

	Dec 31, 2018
≤ 50 %	67 %
> 50 ≤ 70 %	16 %
> 70 ≤ 90 %	9 %
> 90 ≤ 100 %	3 %
> 100 ≤ 110 %	2 %
> 110 ≤ 130 %	2 %
> 130 %	1 %

[1] When assigning the exposure to the corresponding LTV buckets, the exposure amounts are distributed according to their relative share of the underlying assessed real estate value.

The table below shows the Consumer mortgage lending exposure grouped by loan-to-value buckets for 2017.

Consumer mortgage lending exposure grouped by loan-to-value buckets[1]

	Dec 31, 2017
≤ 50 %	68 %
> 50 ≤ 70 %	16 %
> 70 ≤ 90 %	9 %
> 90 ≤ 100 %	3 %
> 100 ≤ 110 %	2 %
> 110 ≤ 130 %	1 %
> 130 %	1 %

[1] When assigning the exposure to the corresponding LTV buckets, the exposure amounts are distributed according to their relative share of the underlying assessed real estate value.

The LTV expresses the amount of exposure as a percentage of the underlying real estate value.

Our LTV ratios are calculated using the total exposure divided by the current determined value of the respective properties. These values are monitored and updated if necessary on a regular basis. The exposure of transactions that are additionally backed by liquid collateral is reduced by the respective collateral values, whereas any prior charges increase the corresponding total exposure. The LTV calculation includes exposure which is secured by real estate collateral. Any mortgage lending exposure that is collateralized exclusively by any other type of collateral is not included in the LTV calculation.

The creditor's creditworthiness, the LTV and the quality of collateral is an integral part of our risk management when originating loans and when monitoring and steering our credit risks. In general, we are willing to accept higher LTV's, the better the creditor's creditworthiness is. Nevertheless, restrictions of LTV apply e.g. for countries with negative economic outlook or expected declines of real estate values.

As of December 31, 2018, 67 % of our exposure related to the mortgage lending portfolio had a LTV ratio below or equal to 50 %, almost unchanged to 68% in the prior year.

Credit Exposure from Derivatives

All exchange traded derivatives are cleared through central counterparties ("CCPs"), the rules and regulations of which provide for daily margining of all current and future credit risk positions emerging out of such transactions. To the extent possible, we also use CCP services for OTC derivative transactions ("OTC clearing"); we thereby benefit from the credit risk mitigation achieved through the CCP's settlement system.

The Dodd-Frank Act provides for an extensive framework for the regulation of OTC derivatives, including mandatory clearing, exchange trading and transaction reporting of certain OTC derivatives, as well as rules regarding the registration of, and capital, margin and business conduct standards for, swap dealers, security-based swap dealers, major swap participants and major security-based swap participants. The Dodd-Frank Act and related CFTC rules introduced in 2013 mandatory OTC clearing in the United States for certain standardized OTC derivative transactions, including certain interest rate swaps and index credit default swaps. The European Regulation (EU) No 648/2012 on OTC Derivatives, Central Counterparties and Trade Repositories ("EMIR") introduced a number of risk mitigation techniques for non-centrally cleared OTC derivatives in 2013 and the reporting of OTC and exchange traded derivatives in 2014. Mandatory clearing for certain standardized OTC derivatives transactions in the EU began in June 2016, and margin requirements for uncleared OTC derivative transactions in the EU started in February 2017. Deutsche Bank implemented the exchange of both initial and variation margin in the EU from February 2017 for the first category of counterparties subject to the EMIR margin for uncleared derivatives requirements. All other in-scope entities followed the variation margin requirements from March 1, 2017. Deutsche Bank further implemented the exchange of initial margin with the second and third categories of counterparties beginning in September 2017 and September 2018, respectively. Initial margin requirements are subject to a phased implementation schedule which will be fully applied by September 2020.

The CFTC adopted final rules in 2016 that require additional interest rate swaps to be cleared, with a phased implementation schedule ending in October 2018. Deutsche Bank implemented the CFTC's expanded clearing requirements for the relevant interest rate swaps subject to the phased compliance, covering identified instruments denominated in AUD, CAD, CHF, HKD, MXN, NOK, PLN, SEK and SGD. In December 2016, also pursuant to the Dodd-Frank Act, the CFTC re-proposed regulations to impose position limits on certain commodities and economically equivalent swaps, futures and options. More recently, in November 2018, the CFTC proposed amendments to the rules that would significantly expand swap mandatory trading requirements. This proposal has not yet been finalized. The Securities and Exchange Commission ("SEC") has also finalized rules regarding registration, reporting, business conduct standards and trade acknowledgement and verification requirements for security-based swap dealers and major security-based swap participants, although these rules will not come into effect until the SEC completes further security-based swap rulemakings. Finally, U.S. prudential regulators (the Federal Reserve, the FDIC, the Office of the Comptroller of the Currency, the Farm Credit Administration and the Federal Housing Finance Agency) have adopted final rules establishing margin requirements for non-cleared swaps and security-based swaps, and the CFTC has adopted final rules establishing margin requirements for non-cleared swaps. The final margin rules follow a phased implementation schedule, with certain initial margin and variation margin requirements in effect as of September 2016 and additional variation margin requirements in effect as of March 1, 2017 for all covered counterparties. Deutsche Bank implemented the exchange of both initial and variation margin for uncleared derivatives in the U.S. from September 2016, for the first category of counterparties subject to the U.S. prudential regulators' margin requirements. Additional initial margin requirements for smaller counterparties are phased in on an annual basis from September 2017 through September 2020, with the relevant compliance dates depending in each case on the transactional volume of the parties and their affiliates. The SEC proposal to establish margin requirements for non-cleared security-based swaps has not yet been finalized.

The following table shows a breakdown of notional amounts and gross market value of derivative transactions along with a breakdown of notional amounts of OTC derivative assets and liabilities on the basis of clearing channel.

Notional amounts of derivatives on basis of clearing channel and type of derivative

Dec 31, 2018

	Notional amount maturity distribution						
in € m.	Within 1 year	> 1 and ≤ 5 years	After 5 years	Total	Positive market value	Negative market value	Net market value
Interest rate related:							
OTC	12,741,035	9,791,856	5,605,269	28,138,160	202,480	181,453	21,028
Bilateral (Amt)	2,511,405	2,706,991	1,871,607	7,090,004	176,248	156,339	19,909
CCP (Amt)	10,229,630	7,084,865	3,733,661	21,048,156	26,233	25,114	1,119
Exchange-traded	5,643,533	1,813,582	367	7,457,483	560	357	203
Total Interest rate related	18,384,569	11,605,439	5,605,636	35,595,643	203,040	181,809	21,231
Currency related:							
OTC	4,277,488	1,063,548	440,037	5,781,073	85,221	81,555	3,666
Bilateral (Amt)	4,217,941	1,063,386	440,037	5,721,364	84,592	80,765	3,827
CCP (Amt)	59,547	162	0	59,709	629	790	(161)
Exchange-traded	23,137	0	0	23,137	5	7	(2)
Total Currency related	4,300,625	1,063,548	440,037	5,804,211	85,226	81,562	3,664
Equity/index related:							
OTC	265,587	145,152	16,391	427,130	15,645	19,925	(4,280)
Bilateral (Amt)	265,587	145,152	16,391	427,130	15,645	19,925	(4,280)
CCP (Amt)	0	0	0	0	0	0	0
Exchange-traded	605,254	110,450	10,974	726,678	10,407	9,969	438
Total Equity/index related	870,841	255,602	27,365	1,153,808	26,052	29,894	(3,843)
Credit derivatives related							
OTC	115,256	615,668	123,651	854,575	8,197	8,382	(184)
Bilateral (Amt)	71,996	175,015	49,365	296,375	3,138	3,142	(3)
CCP (Amt)	43,260	440,653	74,287	558,200	5,059	5,240	(181)
Exchange-traded	0	0	0	0	0	0	0
Total Credit derivatives related	115,256	615,668	123,651	854,575	8,197	8,382	(184)
Commodity related:							
OTC	5,028	1,015	1,432	7,476	99	1,090	(991)
Bilateral (Amt)	5,028	1,015	1,432	7,476	99	1,090	(991)
CCP (Amt)	0	0	0	0	0	0	0
Exchange-traded	22,727	1,333	0	24,060	246	289	(43)
Total Commodity related	27,755	2,348	1,432	31,535	345	1,379	(1,034)
Other:							
OTC	11,854	2,555	86	14,494	213	337	(124)
Bilateral (Amt)	11,853	2,555	86	14,493	213	336	(124)
CCP (Amt)	1	0	0	1	0	0	0
Exchange-traded	5,244	3	0	5,247	13	46	(33)
Total Other	17,098	2,558	86	19,741	226	383	(157)
Total OTC business	17,416,248	11,619,795	6,186,866	35,222,909	311,855	292,741	19,115
Total bilateral business	7,083,810	4,094,114	2,378,919	13,556,843	279,935	261,597	18,338
Total CCP business	10,332,438	7,525,680	3,807,948	21,666,066	31,921	31,144	777
Total exchange-traded business	6,299,896	1,925,368	11,341	8,236,605	11,231	10,668	563
Total	23,716,144	13,545,163	6,198,208	43,459,514	323,086	303,409	19,678
Positive market values after netting and cash collateral received	0	0	0	0	29,393	0	0

	Dec 31, 2017						
	Notional amount maturity distribution						
in € m.	Within 1 year	> 1 and ≤ 5 years	After 5 years	Total	Positive market value	Negative market value	Net market value
Interest rate related:							
OTC	18,389,853	9,644,152	5,862,868	33,896,874	224,783	202,492	22,291
Bilateral (Amt)	2,231,176	2,624,101	1,989,543	6,844,820	200,520	177,989	22,532
CCP (Amt)	16,158,677	7,020,051	3,873,326	27,052,054	24,262	24,503	(241)
Exchange-traded	4,100,955	1,379,528	155	5,480,638	250	275	(25)
Total Interest rate related	22,490,809	11,023,680	5,863,023	39,377,512	225,033	202,767	22,266
Currency related:							
OTC	4,265,081	1,036,897	470,541	5,772,518	82,392	75,535	6,858
Bilateral (Amt)	4,209,509	1,036,536	470,541	5,716,586	81,597	74,823	6,774
CCP (Amt)	55,572	361	0	55,932	795	712	83
Exchange-traded	48,252	0	0	48,252	19	18	1
Total Currency related	4,313,333	1,036,897	470,541	5,820,771	82,411	75,553	6,859
Equity/index related:							
OTC	301,662	156,272	19,248	477,182	18,201	23,010	(4,810)
Bilateral (Amt)	301,662	156,272	19,248	477,182	18,201	23,010	(4,810)
CCP (Amt)	0	0	0	0	0	0	0
Exchange-traded	732,870	107,631	5,398	845,900	9,986	12,708	(2,722)
Total Equity/index related	1,034,533	263,903	24,647	1,323,082	28,187	35,718	(7,531)
Credit derivatives related							
OTC	209,376	1,321,066	153,867	1,684,309	28,317	27,888	429
Bilateral (Amt)	91,919	204,583	49,442	345,944	5,363	4,779	584
CCP (Amt)	117,457	1,116,482	104,426	1,338,365	22,954	23,108	(154)
Exchange-traded	0	0	0	0	0	0	0
Total Credit derivatives related	209,376	1,321,066	153,867	1,684,309	28,317	27,888	429
Commodity related:							
OTC	3,431	995	2,015	6,441	35	1,485	(1,449)
Bilateral (Amt)	3,431	995	2,015	6,441	35	1,485	(1,449)
CCP (Amt)	0	0	0	0	0	0	0
Exchange-traded	39,955	4,163	0	44,119	187	214	(27)
Total Commodity related	43,386	5,158	2,015	50,560	222	1,699	(1,476)
Other:							
OTC	3,744	765	0	4,509	9	371	(362)
Bilateral (Amt)	3,744	765	0	4,509	9	371	(362)
CCP (Amt)	0	0	0	0	0	0	0
Exchange-traded	5,196	1	0	5,197	5	26	(20)
Total Other	8,940	766	0	9,706	14	397	(382)
Total OTC business	23,173,146	12,160,146	6,508,540	41,841,833	353,737	330,780	22,957
Total bilateral business	6,841,441	4,023,253	2,530,789	13,395,482	305,726	282,457	23,269
Total CCP business	16,331,705	8,136,894	3,977,751	28,446,351	48,012	48,324	(312)
Total exchange-traded business	4,927,230	1,491,323	5,553	6,424,106	10,447	13,240	(2,793)
Total	28,100,376	13,651,470	6,514,093	48,265,939	364,185	344,020	20,164
Positive market values after netting and cash collateral received	0	0	0	0	32,083	0	0

Equity Exposure

The table below presents the carrying values of our equity investments according to IFRS definition split by trading and nontrading for the respective reporting dates. We manage our respective positions within our market risk and other appropriate risk frameworks.

Composition of our Equity Exposure

in € m.	Dec 31, 2018	Dec 31, 2017
Trading Equities	56,673	85,932
Nontrading Equities[1]	2,835	2,496
Total Equity Exposure	**59,507**	88,427

1 Includes equity investment funds amounting to € 605 million as of December 31, 2018 and € 367 million as of December 31, 2017.

As of December 31, 2018, our Trading Equities exposure was mainly composed of € 54.3 billion from Corporate & Investment Bank activities and € 2.3 billion from Asset Management. Overall trading equities decreased by € 29.3 billion year on year driven mainly by decreased exposure in Corporate & Investment Bank activities.

Asset Quality

For 2018, we provide information following the IFRS 9 accounting standard, while 2017 numbers are based on the IAS 39 accounting rules. Since the accounting requirements have changed significantly, numbers are not comparable. Therefore 2017 figures are shown in a separate section subsequent to the disclosures under IFRS 9. The main reasons are the broader scope of assets subject to impairment, differences in asset classification as well as in impairment calculation and definition:

The Asset Quality section under IFRS 9 describes the quality of debt instruments subject to impairment, which under IFRS 9 consist of debt instruments measured at amortized cost, financial instruments at fair value through other comprehensive income (FVOCI) as well as off-balance sheet lending commitments such as loan commitments and financial guarantees (hereafter collectively referred to as “Financial Assets”). Under IAS 39 the Asset Quality section mainly described the quality of the group Loans measured at amortized costs classified as Loans in our balance sheet.

The determination of impairment losses and allowance moves from an incurred credit loss model under IAS 39, whereby credit losses are recognized when a defined loss event occurs, to an expected credit loss model under IFRS 9, where allowances for loan losses are recorded upon initial recognition of the Financial Asset, based on expectations of potential credit losses at the time of initial recognition.

The Group has aligned its definition of “credit-impaired” under IFRS 9 to the default definition as per Art. 178 of the Capital Requirements Regulation (CRR) for regulatory purposes. As a consequence, Stage 3 financial assets consist of two types of defaulted financial assets: firstly financial assets, where the Group expects an impairment loss reflected in an allowance for credit losses, and secondly, financial assets, where the Group does not expect an impairment loss (e.g., due to high quality collateral or sufficient expected future cash flows following thorough due diligence). This is a major difference to our impairment definition under IAS 39, where financial assets were only considered to be impaired if the Group expected to suffer an impairment loss.

For further information please refer to chapter “IFRS 9 Transition Impact Analysis” in Note 2 “Recently Adopted and New Accounting Pronouncements” to the consolidated financial statements.

Overview of financial assets subject to impairment

The following tables provide an overview of the exposure amount and allowance for credit losses by financial asset class broken down into stages as per IFRS 9 requirements.

Overview of financial assets subject to impairment

										Dec 31, 2018
	Gross Carrying Amount					Allowance for Credit Losses[2]				
in € m.	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total
Amortized Cost[1]	637,037	32,335	7,452	1,963	678,787	509	501	3,247	3	4,259

[1] Financial Assets at Amortized Cost consist of: Loans at Amortized Cost, Cash and central bank balances, Interbank balances (w/o central banks), Central bank funds sold and securities purchased under resale agreements, Securities borrowed and certain subcategories of Other assets.
[2] Allowance for credit losses do not include allowance for country risk amounting to € 6 million as of Dec 31, 2018.

										Dec 31, 2018
	Fair Value					Allowance for Credit Losses				
in € m.	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total
Fair Value through OCI	50,932	247	2	1	51,182	11	1	0	(0)	13

										Dec 31, 2018
	Notional Amount					Allowance for Credit Losses[1]				
in € m.	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total
Off-balance sheet	252,039	10,021	599	0	262,659	132	73	84	0	289

[1] Allowance for credit losses do not include allowance for country risk amounting to € 5 million as of Dec 31, 2018.

Financial assets at amortized cost

The following tables provide an overview of the gross carrying amount and credit loss allowance by financial asset class broken down into stages as per IFRS 9 requirements.

Development of exposures and allowance for credit losses in the reporting period

	Dec 31, 2018				
	Gross carrying amount				
in € m.	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total
Balance, beginning of year	**663,707**	**30,305**	**7,726**	**2,019**	**703,756**
Movements in financial assets including new business	29,175	5,743	1,058	(61)	35,914
Transfers due to changes in creditworthiness	1,240	(2,344)	1,104	N/M	0
Changes due to modifications that did not result in derecognition	(11)	(8)	(208)	0	(227)
Changes in models	N/M	N/M	N/M	N/M	N/M
Financial assets that have been derecognized during the period	(65,682)	(1,766)	(2,411)	(4)	(69,863)
Recovery of written off amounts	0	0	146	0	146
Foreign exchange and other changes	8,608	405	37	10	9,060
Balance, end of reporting period	**637,037**	**32,335**	**7,452**	**1,963**	**678,787**

Financial assets at amortized cost subject to impairment dropped by € 25 billion or 4 % in 2018 mainly driven by Stage 1:

Stage 1 exposures decreased by € 27 billion or 4 % driven by Cash and central bank balances due to reductions in deposits and short-term borrowings.

Stage 2 exposures increased by € 2 billion or 7 % driven by Loans at amortized cost in CIB.

Stage 3 exposures decreased by € 274 million or 4 % in 2018 driven by CIB, mainly reflecting de-risking activities in our shipping portfolio. This reduction was partly offset by an increase in PCB driven by the Postbank business, partly as a result of non-recurring effects.

	Dec 31, 2018				
	Allowance for Credit Losses[3]				
in € m.	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total
Balance, beginning of year	**462**	**494**	**3,638**	**3**	**4,596**
Movements in financial assets including new business	(132)	215	440	(17)	507
Transfers due to changes in creditworthiness	199	(137)	(62)	N/M	0
Changes due to modifications that did not result in derecognition	N/M	N/M	N/M	N/M	N/M
Changes in models	0	0	0	0	0
Financial assets that have been derecognized during the period[2]	(6)	(17)	(972)	0	(995)
Recovery of written off amounts	0	0	172	0	172
Foreign exchange and other changes	(14)	(54)	30	17	(21)
Balance, end of reporting period	**509**	**501**	**3,247**	**3**	**4,259**
Provision for Credit Losses excluding country risk[1]	66	78	379	(17)	507

[1] Movements in financial assets including new business, transfers due to changes in creditworthiness and changes in models add up to Provision for Credit Losses excluding country risk.
[2] This position includes charge offs of allowance for credit losses.
[3] Allowance for credit losses does not include allowance for country risk amounting to € 6 million as of Dec. 31, 2018.

Allowance for credit losses against financial assets at amortized cost subject to impairment dropped by € 338 million or 7 % in 2018 mainly driven by Stage 3:

Stage 1 allowances increased by € 47 million or 10% driven by additional provisions in CIB to reflect for a weakening macro-economic outlook as well as a one-off adjustment to the calculation methodology on certain loans on which we hold insurance protection.

Stage 2 allowances remained almost stable.

Stage 3 allowances decreased by € 391 million or 11 % driven by CIB, where charge offs partly related to de-risking activities in our shipping portfolio overcompensated additional provisions.

Financial assets at amortized cost by business division

Dec 31, 2018

	Gross Carrying Amount					Allowance for Credit Losses				
in € m.	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total
Corporate & Investment Bank	327,094	14,241	2,403	1,692	345,429	184	99	896	3	1,183
Private & Commercial Bank	299,003	17,226	5,047	271	321,547	321	400	2,350	0	3,071
Asset Management	1,998	304	2	0	2,303	0	0	0	0	1
Corporate & Other	8,943	564	1	0	9,508	3	1	1	0	5
Total	637,037	32,335	7,452	1,963	678,787	509	501	3,247	3	4,259

Financial assets at amortized cost by industry sector

Dec 31, 2018

	Gross Carrying Amount					Allowance for Credit Losses				
in € m.	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total
Agriculture, forestry and fishing	533	38	60	0	631	1	2	21	0	24
Mining and quarrying	2,970	273	147	0	3,390	8	1	5	0	15
Manufacturing	26,695	1,291	783	66	28,836	25	24	449	1	498
Electricity, gas, steam and air conditioning supply	3,476	286	77	0	3,839	3	16	5	0	24
Water supply, sewerage, waste management and remediation activities	777	10	10	0	796	0	0	7	0	7
Construction	3,108	289	338	88	3,823	4	4	244	1	254
Wholesale and retail trade, repair of motor vehicles and motorcycles	19,119	859	593	0	20,572	19	18	403	(0)	440
Transport and storage	4,314	875	539	0	5,728	7	6	201	0	214
Accommodation and food service activities	1,692	166	35	121	2,014	3	2	17	0	23
Information and communication	4,443	286	46	0	4,774	8	13	27	0	48
Financial and insurance activities	318,867	10,526	373	633	330,400	81	33	153	7	274
Real estate activities	33,166	2,801	380	401	36,748	35	17	84	(9)	128
Professional, scientific and technical activities	8,169	498	151	190	9,008	7	8	83	0	98
Administrative and support service activities	7,091	189	62	32	7,374	8	3	19	(4)	25
Public administration and defense, compulsory social security	12,054	1,089	81	1	13,224	4	7	5	0	16
Education	612	19	8	0	638	1	0	7	0	9
Human health services and social work activities	3,246	209	12	2	3,468	7	5	5	0	18
Arts, entertainment and recreation	818	24	14	0	856	2	0	5	0	7
Other service activities	7,788	486	104	239	8,617	9	4	34	4	51
Activities of households as employers, undifferentiated goods- and services-producing activities of households for own use	177,927	12,121	3,639	191	193,878	276	336	1,473	4	2,088
Activities of extraterritorial organizations and bodies	173	0	1	0	173	0	0	0	0	0
Total	637,037	32,335	7,452	1,963	678,787	509	501	3,247	3	4,259

Financial assets at amortized cost by region

	Dec 31, 2018									
	Gross Carrying Amount					Allowance for Credit Losses				
in € m.	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total
Germany	291,850	12,247	3,088	303	307,488	247	275	1,303	0	1,825
Western Europe (excluding Germany)	119,622	7,499	3,072	1,543	131,736	122	175	1,604	5	1,907
Eastern Europe	6,309	401	88	0	6,798	5	4	38	0	47
North America	147,300	7,572	554	20	155,446	66	32	48	1	147
Central and South America	4,717	558	155	0	5,430	7	2	22	0	31
Asia/Pacific	55,490	3,353	374	98	59,315	32	9	200	(4)	237
Africa	1,996	470	78	0	2,544	7	4	31	0	42
Other	9,753	234	43	0	10,031	22	0	1	0	24
Total	637,037	32,335	7,452	1,963	678,787	509	501	3,247	3	4,259

Financial assets at amortized cost by rating class

	Dec 31, 2018									
	Gross Carrying Amount					Allowance for Credit Losses				
in € m.	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total
iAAA–iAA	235,913	2,315	0	0	238,229	2	0	0	0	3
iA	81,579	3,027	0	0	84,606	6	1	0	0	7
iBBB	138,596	2,508	0	0	141,104	36	8	0	0	43
iBB	137,768	8,318	0	232	146,318	177	61	0	0	238
iB	35,725	10,378	0	11	46,114	239	187	0	0	426
iCCC and below	7,456	5,788	7,452	1,720	22,416	49	243	3,247	3	3,542
Total	637,037	32,335	7,452	1,963	678,787	509	501	3,247	3	4,259

Our existing commitments to lend additional funds to debtors with Stage 3 financial assets at amortized cost amounted to € 117 million as of December 31, 2018.

Collateral held against financial assets at amortized cost in stage 3

	Dec 31, 2018		
in € m.	Gross Carrying Amount	Collateral	Guarantees
Financial Assets at Amortized Cost (Stage 3)	7,452	2,714	221

In 2018, we did not recognize an allowance for credit losses against Financial assets at amortized cost in Stage 3 of € 373 million due to full collateralization of these assets.

Modified Assets at Amortized Cost

A financial asset is considered modified when its contractual cash flows are renegotiated or otherwise modified. Renegotiation or modification may or may not lead to derecognition of the old and recognition of the new financial instrument. This section covers modified financial assets that have not been derecognized.

Under IFRS 9, when the terms of a Financial Asset are renegotiated or modified and the modification does not result in derecognition, a gain or loss is recognized in the income statement as the difference between the original contractual cash flows and the modified cash flows discounted at the original effective interest rate (EIR). For modified financial assets the determination of whether the asset's credit risk has increased significantly reflects the comparison of:

- The remaining lifetime probability of default (PD) at the reporting date based on the modified terms; with
- The remaining lifetime PD estimated based on data at initial recognition and based on the original contractual terms.

Modified Assets Amortized Cost

					Dec 31, 2018
in € m.	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total
Amortized cost carrying amount prior to modification	11	8	222	0	241
Net modification gain/losses recognized	(11)	(8)	(208)	0	(227)

In the first year after the implementation of the IFRS 9 requirements, we have observed immaterial amounts of modified assets that have been upgraded to stage 1. We have not observed any subsequent re-deterioration of those assets into stages 2 and 3.

Financial Assets at Fair value through Other Comprehensive Income

The fair value of financial assets at Fair value through Other Comprehensive Income (FVOCI) subject to impairment was € 51 billion at December 31, 2018, compared to € 48 billion at the beginning of year 2018. Allowance for credit losses against these assets were almost unchanged at very low levels (€ 12 million at the beginning of year 2018 and € 13 million as of December 31, 2018, respectively). Due to immateriality no further breakdown will be provided for financial assets at FVOCI.

Off-balance sheet lending commitments and guarantee business

The following tables provide an overview of the nominal amount and credit loss allowance for our off-balance sheet financial asset class broken down into stages as per IFRS 9 requirements.

Development of nominal amount and allowance for credit losses

					Dec 31, 2018
					Nominal Amount
in € m.	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total
Balance, beginning of year[1]	243,566	7,114	1,448	0	252,129
Movements including new business	6,765	3,923	(1,191)	0	9,496
Transfers due to changes in creditworthiness	752	(1,089)	338	N/M	0
Changes in models	N/M	N/M	N/M	N/M	N/M
Foreign exchange and other changes	957	73	4	0	1,035
Balance, end of reporting period	252,039	10,021	599	0	262,659

[1] Revocable commitments were included in impairment relevant exposures in Q4 2018. As a consequence, Balance, beginning of year was restated compared to our interim reports 2018.

					Dec 31, 2018
					Allowance for Credit Losses[2]
in € m.	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total
Balance, beginning of year	117	36	119	0	272
Movements including new business	(0)	31	(13)	0	18
Transfers due to changes in creditworthiness	2	(0)	(2)	N/M	0
Changes in models	N/M	N/M	N/M	N/M	N/M
Foreign exchange and other changes	14	6	(20)	0	(0)
Balance, end of reporting period	132	73	84	0	289
Provision for Credit Losses excluding country risk[1]	1	31	(15)	0	18

[1] The above table breaks down the impact on provision for credit losses from movements in financial assets including new business, transfers due to changes in creditworthiness and changes in models.
[2] Allowance for credit losses does not include allowance for country risk amounting to € 5 million as of December 31, 2018.

Legal Claims

Assets subject to enforcement activity consist of assets, which have been fully or partially written off and the Group still continues to pursue recovery of the asset. Such enforcement activity comprises for example cases where the bank continues to devote resources (e.g. our Legal Department/CRM workout unit) towards recovery, either via legal channels or third party recovery agents. Enforcement activity also applies to cases where the Bank maintains outstanding and unsettled legal claims. This is irrespective of whether amounts are expected to be recovered and the recovery timeframe. It may be common practice in certain jurisdictions for recovery cases to span several years.

Amounts outstanding on financial assets that were written off during the reporting period and are still subject to enforcement activity amounted to € 224 million for the year 2018, mainly related to CIB.

Renegotiated and forborne assets at amortized costs

For economic or legal reasons we might enter into a forbearance agreement with a borrower who faces or will face financial difficulties in order to ease the contractual obligation for a limited period of time. A case-by-case approach is applied for our corporate clients considering each transaction and client -specific facts and circumstances. For consumer loans we offer forbearances for a limited period of time, in which the total or partial outstanding or future instalments are deferred to a later point of time. However, the amount not paid including accrued interest during this period must be re-compensated at a later point of time. Repayment options include distribution over residual tenor, a one-off payment or a tenor extension. Forbearances are restricted and depending on the economic situation of the client, our risk management strategies and the local legislation. In case a forbearance agreement is entered into, an impairment measurement is conducted as described below, an impairment charge is taken if necessary and the loan is subsequently recorded as impaired.

In our management and reporting of forborne assets at amortized costs, we are following the EBA definition for forbearances and non-performing loans (Implementing Technical Standards (ITS) on Supervisory reporting on forbearance and non-performing exposures under article 99(4) of Regulation (EU) No 575/2013). Once the conditions mentioned in the ITS are met, we report the loan as being forborne; we remove the asset from our forbearance reporting, once the discontinuance criteria in the ITS are met (i.e., the contract is considered as performing, a minimum two year probation period has passed, regular payments of more than an insignificant aggregate amount of principal or interest have been made during at least half of the probation period, and none of the exposures to the debtor is more than 30 days past-due at the end of the probation period).

Forborne financial assets at amortized cost

				Dec 31, 2018
	Performing		Non-performing	Total forborne loans at amortized cost
in € m.	Stage 2	Stage 2	Stage 3	
German	1,046	49	1,200	2,295
Non-German	741	55	1,750	2,546
Total	**1,787**	**104**	**2,950**	**4,841**

Development of forborne financial assets at amortized cost

in € m.	Dec 31, 2018
Balance beginning of period	5,089
Classified as forborne during the year	1,679
Transferred to non-forborne during the year (including repayments)	(1,574)
Charge-offs	(386)
Exchange rate and other movements	33
Balance end of period	4,841

The reduction in forborne assets at amortized cost of € 248 million or 5 % was mainly driven by non-performing exposures in CIB mainly reflecting the ongoing de-risking of our shipping portfolio as well as in PCB, among others caused by disposals.

Collateral Obtained

We obtain collateral on the balance sheet only in certain cases by either taking possession of collateral held as security or by calling upon other credit enhancements. Collateral obtained is made available for sale in an orderly fashion or through public auctions, with the proceeds used to repay or reduce outstanding indebtedness. Generally we do not occupy obtained properties for our business use. The commercial and residential real estate collateral obtained in 2018 refers predominantly to our exposures in Spain.

Collateral Obtained during the reporting period

in € m.	2018
Commercial real estate	7
Residential real estate[1]	57
Other	0
Total collateral obtained during the reporting period	**64**

[1] Carrying amount of foreclosed residential real estate properties amounted to € 62 million as of December 31, 2018 and € 67 million as of December 31, 2017.

The collateral obtained, as shown in the table above, excludes collateral recorded as a result of consolidating securitization trusts under IFRS 10. In 2018 as well as in 2017 the Group did not obtain any collateral related to these trusts.

Asset Quality (Previous year's figures reported under IAS 39)

This section below describes the asset quality of our loans for the comparative period 2017. All loans where known information about possible credit problems of borrowers causes our management to have serious doubts as to the collectability of the borrower's contractual obligations, are included in this section.

Overview of performing, renegotiated, past due and impaired loans by customer groups

	Dec 31, 2017		
in € m.	Corporate loans	Consumer loans	Total
Loans neither past due, nor renegotiated or impaired	208,457	185,979	394,436
Past due loans, neither renegotiated nor impaired	1,167	2,778	3,945
Loans renegotiated, but not impaired	518	488	1,006
Impaired loans	3,406	2,828	6,234
Total	213,547	192,074	405,621

Past Due Loans

Loans are considered to be past due if contractually agreed payments of principal and/or interest remain unpaid by the borrower, except if those loans are acquired through consolidation. The latter are considered to be past due if payments of principal and/or interest, which were expected at a certain payment date at the time of the initial consolidation of the loans, are unpaid by the borrower.

Non-impaired past due loans at amortized cost by past due status

in € m.	Dec 31, 2017
Loans less than 30 days past due	2,747
Loans 30 or more but less than 60 days past due	482
Loans 60 or more but less than 90 days past due	250
Loans 90 days or more past due	776
Total	4,255

Non-impaired past due loans at amortized cost by industry

in € m.	Dec 31, 2017
Financial intermediation	267
Fund management activities	40
Manufacturing	179
Wholesale and retail trade	233
Households	2,481
Commercial real estate activities	363
Public sector	10
Other	682
Total	4,255

Non-impaired past due loans at amortized cost by region

in € m.	Dec 31, 2017
Germany	1,810
Western Europe (excluding Germany)	1,758
Eastern Europe	158
North America	343
Central and South America	6
Asia/Pacific	161
Africa	19
Other	0
Total	4,255

Our non-impaired past due loans increased to € 4.3 billion as of December 31, 2017, largely caused by loans, that were overdue by a few days. Businesswise, the main driver was PCB.

Aggregated value of collateral – with the fair values of collateral capped at loan outstanding – held against our non-impaired past due loans

in € m.	Dec 31, 2017
Financial and other collateral	2,364
Guarantees received	148
Total	2,512

Renegotiated and forborne loans

The tables below give an overview of the Group's forborne loans.

Forborne loans

				Dec 31, 2017[1]
	Performing		Non-performing	Total forborne loans
in € m.	Nonimpaired	Nonimpaired	Impaired	
German	1,183	601	804	2,587
Non-German	612	553	1,337	2,502
Total	1,794	1,154	2,141	5,089

[1] Forborne Loans have been restated following a refinement of internal processes.

Development of forborne loans

in € m.	Dec 31, 2017[1]
Balance beginning of period	5,468
Classified as forborne during the year	1,492
Transferred to non-forborne during the year (including repayments)	(1,519)
Charge-offs	(234)
Exchange rate and other movements	(119)
Balance end of period	5,089

[1] Balance, end of period as well as Classified as forborne during the year have been restated following a refinement of internal processes.

The total forborne loans in 2017 decreased by € 379 million mainly driven by non-performing forborne loans to non-German clients mainly reflecting non-performing loan sales in our shipping portfolio reported in CIB as well as in PCC International.

Impaired loans

Credit Risk Management regularly assesses at each balance sheet date whether there is objective evidence that a loan or group of loans is impaired. A loan or group of loans is impaired and impairment losses are incurred if:

- there is objective evidence of impairment as a result of a loss event that occurred after the initial recognition of the asset and up to the balance sheet date (a "loss event"). When making our assessment we consider information on such events that is reasonably available up to the date the financial statements are authorized for issuance in line with the requirements of IAS 10;
- the loss event had an impact on the estimated future cash flows of the financial asset or the group of financial assets, and
- a reliable estimate of the loss amount can be made at each reporting date.

Credit Risk Management's loss assessments are subject to regular review in collaboration with Group Finance. The results of this review are reported to and approved by Group Finance and Risk Senior Management.

For further details with regard to impaired loans please refer to Note 1 "Significant Accounting Policies and Critical Accounting Estimates" to the consolidated financial statements.

Impairment loss and allowance for loan losses

If there is evidence of impairment the impairment loss is generally calculated on the basis of discounted expected cash flows using the original effective interest rate of the loan. If the terms of a loan are renegotiated or otherwise modified because of financial difficulties of the borrower without qualifying for de-recognition of the loan, the impairment loss is measured using the original effective interest rate before modification of terms. We reduce the carrying amount of the impaired loan by the use of an allowance account and recognize the amount of the loss in the consolidated statement of income as a component of the provision for credit losses. We record increases to our allowance for loan losses as an increase of the provision for loan losses in our income statement. Charge-offs reduce our allowance while recoveries, if any, are credited to the allowance account. If we determine that we no longer require allowances which we have previously established, we decrease our allowance and record the amount as a reduction of the provision for loan losses in our income statement. When it is considered that there is no realistic prospect of recovery and all collateral has been realized or transferred to us, the loan and any associated allowance for loan losses is charged off (i.e., the loan and the related allowance for loan losses are removed from the balance sheet).

While we assess the impairment for our corporate credit exposures individually, we assess the impairment of our smaller-balance standardized homogeneous loans collectively.

Our collectively assessed allowance for non-impaired loans reflects allowances to cover for incurred losses that have neither been individually identified nor provided for as part of the impairment assessment of smaller-balance homogeneous loans.

For further details regarding our accounting policies regarding impairment loss and allowance for credit losses, please refer to Note 1 "Significant Accounting Policies and Critical Accounting Estimates".to the consolidated financial statements.

Impaired loans, allowance for loan losses and coverage ratios by business division

	Dec 31, 2017		
in € m.	Impaired loans	Loan loss allowance	Impaired loan coverage ratio
Corporate & Investment Bank	2,517	1,565	62 %
Private & Commercial Bank	3,717	2,355	63 %
Asset Management	0	0	N/M
Corporate & Other	1	1	N/M
Total	6,234	3,921	63 %

N/M – not meaningful.

Impaired loans, allowance for loan losses and coverage ratios by industry

	Dec 31, 2017							
	Impaired Loans			Loan loss allowance				
in € m.	Individually assessed	Collectively assessed	Total	Individually assessed allowance	Collectively assessed allowance for impaired loans	Collectively assessed allowance for non-impaired loans	Total	Impaired loan coverage ratio
Financial intermediation	121	8	129	1	3	40	44	34 %
Fund management activities	8	8	16	1	0	3	4	24 %
Manufacturing	520	165	685	439	146	51	635	93 %
Wholesale and retail trade	333	188	521	211	156	27	394	76 %
Households	155	2,233	2,388	153	1,290	83	1,526	64 %
Commercial real estate activities	345	30	376	115	11	42	168	45 %
Public sector	74	0	74	6	0	12	17	24 %
Other[1]	1,792	254	2,046	840	139	153	1,132	55 %
Total	3,348	2,886	6,234	1,766	1,745	410	3,921	63 %

[1] Thereof: 'Transportation, storage and communication' - Total Impaired Loans € 808 million/Total Loan loss allowance € 469 million, 'Real estate; renting and business activities' - € 482 million/ € 234 million, 'Construction': € 378 million/ € 144 million, 'Mining and quarrying' - € 169 million/ € 116 million.

Impaired loans, allowance for loan losses and coverage ratios by region

	Dec 31, 2017							
	Impaired Loans			Loan loss allowance				
in € m.	Individually assessed	Collectively assessed	Total	Individually assessed allowance	Collectively assessed allowance for impaired loans	Collectively assessed allowance for non-impaired loans	Total	Impaired loan coverage ratio
Germany	953	1,312	2,266	600	823	104	1,527	67 %
Western Europe (excluding Germany)	1,471	1,422	2,892	815	822	113	1,749	60 %
Eastern Europe	45	123	168	45	92	11	147	88 %
North America	497	1	498	67	0	102	170	34 %
Central and South America	70	0	70	14	0	21	35	50 %
Asia/Pacific	264	28	292	223	8	41	272	93 %
Africa	48	0	49	1	0	9	10	20 %
Other	0	0	0	0	0	11	11	N/M
Total	3,348	2,886	6,234	1,766	1,745	410	3,921	63 %

N/M – not meaningful.

Development of impaired loans

	Dec 31, 2017		
in € m.	Individually assessed	Collectively assessed	Total
Balance, beginning of year	4,126	3,321	7,447
Classified as impaired during the year	1,370	1,248	2,618
Transferred to not impaired during the year[1]	(1,127)	(961)	(2,088)
Charge-offs	(540)	(605)	(1,146)
Disposals of impaired loans	(267)	(116)	(383)
Exchange rate and other movements	(215)	(1)	(216)
Balance, end of year	3,348	2,886	6,234

[1] Includes repayments.

Our impaired loans decreased in 2017 by € 1.2 billion or 16 % to € 6.2 billion. The reduction in our individually assessed portfolio mainly reflects charge-offs in CIB along with de-risking of former NCOU assets, while the reduction in our collectively assessed portfolio was driven by charge-offs related to disposals in PCC International.

The impaired loan coverage ratio (defined as total on-balance sheet allowances) for all loans individually impaired or collectively assessed divided by IFRS impaired loans (excluding collateral) increased from 61 % as of year-end 2016 to 63 % as of December 31, 2017.

Provision for loan losses and recoveries by Industry

	2017				
	Provision for loan losses before recoveries				
in € m.	For individually assessed loans	For collectively assessed impaired loans	For collectively assessed non-impaired loans	Total	Recoveries
Financial intermediation	25	(2)	(3)	20	4
Fund management activities	0	0	(2)	(1)	0
Manufacturing	48	18	(28)	38	19
Wholesale and retail trade	46	19	1	66	5
Households	11	322	20	354	66
Commercial real estate activities	(20)	4	5	(10)	12
Public sector	2	0	9	11	0
Other[1]	239	23	(62)	201	20
Total	352	385	(59)	678	127

[1] In 2017, the largest contributions to risk provisioning in the "Other" category came from the "Transport, Storage and Communications" sector (€ 107 million) and the "Mining and quarrying" sector (€ 72 million).

Our existing commitments to lend additional funds to debtors with impaired loans amounted to € 28 million as of December 31, 2017.

Collateral held against impaired loans, with fair values capped at transactional outstanding

in € m.	Dec 31, 2017
Financial and other collateral[1]	1,757
Guarantees received	309
Total collateral held for impaired loans	2,066

[1] Defaulted mortgage loans secured by residential real estate properties, where the loan agreement has been terminated/cancelled are generally subject to formal foreclosure proceedings.

Our coverage ratio including collateral (defined as total on-balance sheet allowances for all loans individually impaired or collectively assessed plus collateral held against impaired loans, with fair values capped at transactional outstanding, divided by IFRS impaired loans) increased to 96 % as of December 31, 2017.

Financial assets available for sale

The impairment concept is also applicable for available for sale debt instruments, which are otherwise carried at fair value with changes in fair value reported in other comprehensive income. If an available for sale debt instrument is considered impaired, the cumulative impairment loss reflects the difference between the amortized cost and the current fair value of the instrument. For a detailed discussion of our accounting procedures please refer to Note 1 "Significant Accounting policies and Critical Accounting Estimates" to the consolidated financial statements.

Non-impaired past due and impaired financial assets available for sale, accumulated impairments, coverage ratio and collateral held against impaired financial assets available for sale

in € m.	Dec 31, 2017
Financial assets non-impaired past due available for sale	1,538
Of which:	
Less than 30 days past due	176
30 or more but less than 60 days past due	23
60 or more but less than 90 days past due	138
90 days or more past due	1,201
Impaired financial assets available for sale	157
Accumulated impairment for financial assets available for sale	113
Impaired financial assets available for sale coverage ratio in %	71 %
Collateral held against impaired financial assets available for sale	17
Of which:	
Financial and other collateral	17
Guarantees received	0

Collateral obtained

The below table give an overview of the group's collateral obtained in the reporting period. The commercial and residential real estate collateral obtained in 2017 refers predominantly to our exposures in Spain.

Collateral obtained during the reporting periods

in € m.	2017
Commercial real estate	9
Residential real estate[1]	63
Other	0
Total collateral obtained during the reporting period	72

[1] Carrying amount of foreclosed residential real estate properties amounted to € 67 million as of December 31, 2017.

The collateral obtained, as shown in the table above, excludes collateral recorded as a result of consolidating securitization trusts under IFRS 10. In 2017, the Group did not obtain any collateral related to these trusts.

Allowance for credit losses

Development of allowance for credit losses

							2017
	Allowance for Loan Losses			Allowance for Off-Balance Sheet Positions			
in € m.	Individually assessed	Collectively assessed	Subtotal	Individually assessed	Collectively assessed	Subtotal	Total
Balance, beginning of year	2,071	2,475	4,546	162	183	346	4,892
Provision for credit losses	299	253	552	(23)	(4)	(27)	525
Of which: (Gains)/Losses from disposal of impaired loans	(83)	(32)	(115)	0	0	0	(115)
Net charge-offs:	(487)	(532)	(1,019)	0	0	0	(1,019)
Charge-offs	(541)	(605)	(1,146)	0	0	0	(1,146)
Recoveries	54	73	127	0	0	0	127
Other changes	(117)	(41)	(158)	(18)	(16)	(34)	(191)
Balance, end of year	1,766	2,155	3,921[1]	122	163	285[2]	4,207
Changes compared to prior year							
Provision for credit losses							
Absolute	(444)	(351)	(795)	(47)	(16)	(62)	(857)
Relative	(60) %	(58) %	(59) %	(196) %	(132) %	(175) %	(62) %
Net charge-offs							
Absolute	407	338	745	0	0	0	745
Relative	(45) %	(39) %	(42) %	0 %	0 %	0 %	(42) %
Balance, end of year							
Absolute	(305)	(320)	(625)	(41)	(20)	(60)	(685)
Relative	(15) %	(13) %	(14) %	(25) %	(11) %	(17) %	(14) %

[1] of which: 'Transfer risk reserve' € 5 million.
[2] of which: 'Transfer risk reserve' € 8 million.

Allowance for credit losses as of December 31, 2017 amounted to € 4.2 billion compared to € 4.9 billion as of December 31, 2016. The reduction was driven by charge-offs, partly compensated by additional provision for credit losses.

As of December 31, 2017, provision for credit losses decreased by € 857 million. compared to year-end 2016, driven by a decrease in provision for loan losses of € 795 million, as well as by a reduction in provisions for off-balance sheet positions of € 62 million. The decrease in our individually assessed loan portfolio mainly resulted from CIB, driven by all portfolios including shipping. Despite the year-over-year reduction, shipping continued to be the main driver of provision for credit losses in 2017, in part related to the re-evaluation of the respective impairment method during the year as discussed in Note 1, "Significant accounting policies and critical accounting estimates" to the consolidated financial statements. A further year-over-year reduction in PCB was driven by a significant release in former Postbank. The decrease in provisions for our collectively assessed loan portfolio mainly resulted from the non-recurrence of one-off items related to assets reported under NCOU in the prior year and further reflected the good portfolio quality and ongoing benign economic environment in PCB.

The decrease in net charge-offs of € 745 million compared to 2016 was mainly driven by non-recurrence of net charge offs related to assets reported under NCOU in the prior year as well as in former Postbank.

Derivatives – Credit Valuation Adjustment

We establish counterparty Credit Valuation Adjustment (CVA) for OTC derivative transactions to cover expected credit losses. The adjustment amount is determined by assessing the potential credit exposure to a given counterparty and taking into account any collateral held, the effect of any relevant netting arrangements, expected loss given default and the credit risk, based on available market information, including CDS spreads.

Treatment of default situations under derivatives

Unlike standard loan assets, we generally have more options to manage the credit risk in our derivatives transactions when movement in the current replacement costs or the behavior of our counterparty indicate that there is the risk that upcoming payment obligations under the transactions might not be honored. In these situations, we are frequently able under the relevant derivatives agreements to obtain additional collateral or to terminate and close-out the derivative transactions at short notice.

The master agreements for OTC derivative transactions executed with our clients usually provide for a broad set of standard or bespoke termination rights, which allow us to respond swiftly to a counterparty's default or to other circumstances which indicate a high probability of failure. Considering the severe systemic disruptions to the financial system, that could be caused by a disorderly failure of a CCP, the Financial Stability Board ("FSB") has recommended to subject CCPs to resolution regimes that apply the same objectives and provisions that apply to global systematically important banks (G-SIBs).

Our contractual termination rights are supported by internal policies and procedures with defined roles and responsibilities which ensure that potential counterparty defaults are identified and addressed in a timely fashion. These procedures include necessary settlement and trading restrictions. When our decision to terminate derivative transactions results in a residual net obligation owed by the counterparty, we restructure the obligation into a non-derivative claim and manage it through our regular work-out process. As a consequence, for accounting purposes we typically do not show any nonperforming derivatives.

Wrong-way risk occurs when exposure to a counterparty is adversely correlated with the credit quality of that counterparty. In compliance with Article 291(2) and (4) CRR we, excluding DB PFK AG, had established a monthly process to monitor several layers of wrong-way risk (specific wrong-way risk, general explicit wrong-way risk at country/industry/region levels and general implicit wrong-way risk, whereby relevant exposures arising from transactions subject to wrong-way risk are automatically selected and presented for comment to the responsible credit officer). A wrong-way risk report is then sent to Credit Risk senior management on a monthly basis. In addition, we, excluding DB PFK AG, utilized our established process for calibrating our own alpha factor (as defined in Article 284 (9) CRR) to estimate the overall wrong-way risk in our derivatives and securities financing transaction portfolio. DB PFK AG derivative counterparty risk is immaterial to the Group and collateral held is typically in the form of cash.

Trading Market Risk Exposures

Value-at-Risk Metrics of Trading Units of Deutsche Bank Group

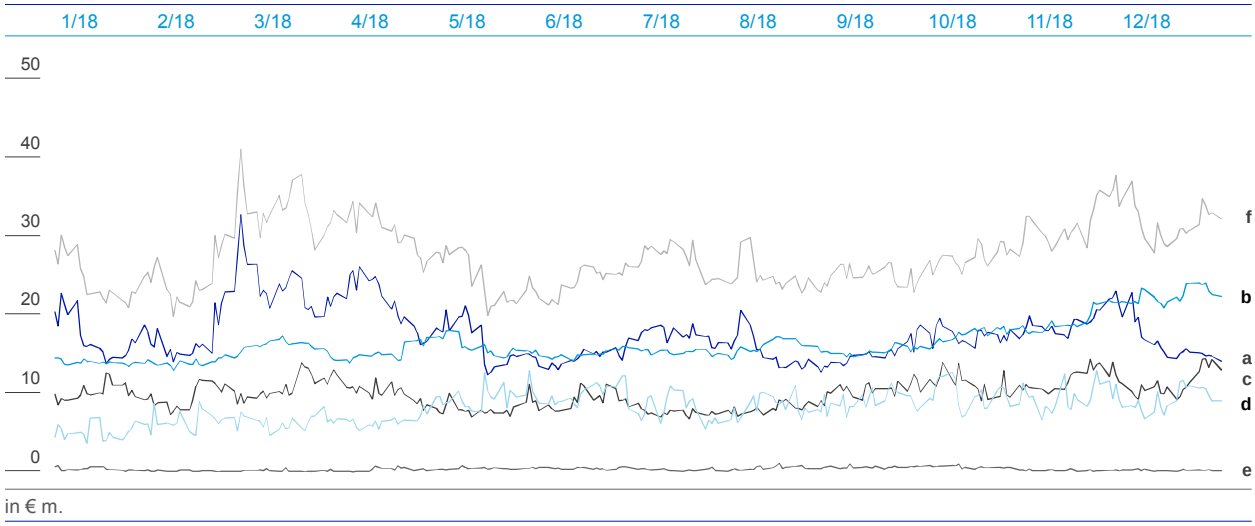
The tables and graph below present the value-at-risk metrics calculated with a 99 % confidence level and a one-day holding period for our trading units.

Value-at-Risk of our Trading Units by Risk Type

	Total		Diversification effect		Interest rate risk		Credit spread risk		Equity price risk		Foreign exchange risk[1]		Commodity price risk	
in € m.	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017
Average	27.5	29.8	(25.5)	(28.1)	17.6	20.2	16.4	19.7	10.0	8.7	8.3	8.4	0.6	0.8
Maximum	40.9	38.4	(35.0)	(37.6)	32.6	26.0	24.0	25.1	14.5	12.5	13.0	16.5	1.3	3.0
Minimum	19.8	20.1	(20.2)	(21.4)	12.4	13.5	13.0	13.5	6.9	4.4	3.8	4.2	0.2	0.1
Period-end	32.1	29.1	(26.9)	(22.5)	14.1	21.4	22.3	14.4	13.0	10.1	9.2	4.9	0.3	0.7

[1] Includes value-at-risk from gold and other precious metal positions.

Development of value-at-risk by risk types in 2018



a VaR Interest rate risk
b VaR Credit spread risk
c VaR Equity risk
d VaR Foreign exchange including precious metals
e VaR Commodity risk
f VaR Total

The average value-at-risk over 2018 was € 27.5 million, which is a decrease of € 2.3 million compared with the full year 2017 driven by reductions in credit spread and interest rate risk.

The period end value-at-risk increase was driven by increases coming from across credit spread, equity and foreign exchange asset classes.

Regulatory Trading Market Risk Measures

The table below presents the stressed value-at-risk metrics calculated with a 99 % confidence level and a one-day holding period for our trading units.

Average, Maximum and Minimum Stressed Value-at-Risk by Risk Type

	Total		Diversification effect		Interest rate risk		Credit spread risk		Equity price risk		Foreign exchange risk[1]		Commodity price risk	
in € m.	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017
Average	84.1	76.7	(81.9)	(88.4)	58.3	69.8	69.3	62.1	16.1	18.8	20.0	12.6	2.4	1.8
Maximum	124.7	125.0	(106.7)	(115.8)	89.9	92.0	79.7	73.2	78.1	66.8	38.2	28.0	7.7	6.1
Minimum	61.2	42.0	(66.1)	(73.0)	35.2	48.3	59.0	54.3	2.4	1.5	7.7	6.9	0.5	0.3
Period-end	96.2	85.6	(75.3)	(81.0)	57.6	67.8	70.1	64.3	21.3	19.9	21.7	12.6	0.7	1.9

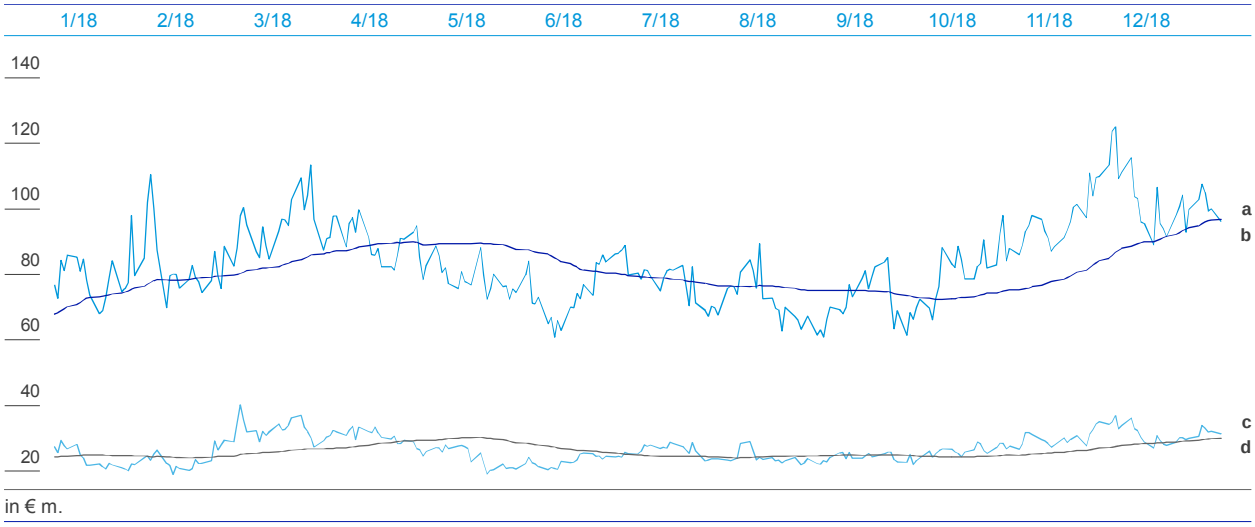
1 Includes value-at-risk from gold and other precious metal positions.

The average stressed value-at-risk was € 84.1 million over 2018, an increase of € 7.4 million compared with the full year 2017. The increase was driven by a reduction in the diversification effect with some additional increase coming from the credit spread and foreign exchange asset classes.

The period end stressed value-at-risk increase was driven by a reduction in diversification effect and increases in the credit spread, foreign exchange and equity asset classes.

The following graph compares the development of the daily value-at-risk with the daily stressed value-at-risk and their 60 day averages, calculated with a 99 % confidence level and a one-day holding period for our trading units. Amounts are shown in millions of euro.

Development of value-at-risk and stressed value-at-risk in 2018



a SVaR Total
b SVaR Rolling 60d Average
c VaR total
d VaR Rolling 60d Average

For regulatory reporting purposes, the incremental risk charge for the respective reporting dates represents the higher of the spot value at the reporting dates, and their preceding 12-week average calculation.

Average, Maximum and Minimum Incremental Risk Charge of Trading Units (with a 99.9 % confidence level and one-year capital horizon)[1,2,3]

	Total		Global Credit Trading		Core Rates		Fixed Income & Currencies APAC		Emerging Markets - Debt		Other	
in € m.	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017
Average	680.6	802.1	335.8	544.6	271.1	107.1	224.8	168.1	(11.9)	37.2	(139.2)	(54.8)
Maximum	847.6	899.3	403.4	597.4	481.9	172.5	451.9	229.0	17.3	62.9	(111.3)	(20.4)
Minimum	550.8	754.8	274.6	503.7	159.1	48.7	72.1	92.4	(29.2)	(1.4)	(177.1)	(90.0)
Period-end	805.4	789.6	383.6	540.1	388.6	133.2	188.0	142.3	5.8	19.9	(160.5)	(45.9)

[1] Amounts show the bands within which the values fluctuated during the 12-weeks preceding December 31, 2018 and December 31, 2017, respectively.
[2] Business line breakdowns have been updated for 2018 reporting to better reflect the current business structure.
[3] All liquidity horizons are set to 12 months.

The incremental risk charge as at the end of 2018 was € 805 million an increase of € 15 million (2 %) compared with year end 2017. The 12-week average of the incremental risk charge as at the end of 2018 was € 681 million and thus € 121 million (15 %) lower compared with the average for the 12-week period ended December 31, 2017. The decreased average incremental risk charge is driven by a decrease in credit exposures in the Global Credit Trading and Emerging Markets - Debt business areas when compared to the full year 2017.

For regulatory reporting purposes, the comprehensive risk measure for the respective reporting dates represents the higher of the internal spot value at the reporting dates, their preceding 12-week average calculation, and the floor, where the floor is equal to 8 % of the equivalent capital charge under the standardized approach securitization framework.

Average, Maximum and Minimum Comprehensive Risk Measure of Trading Units (with a 99.9 % confidence level and one-year capital horizon)[1,2,3]

in € m.	2018	2017
Average	0.0	5.4
Maximum	0.0	6.3
Minimum	0.0	4.5
Period-end	0.0	4.4

[1] Regulatory Comprehensive Risk Measure calculated for the 12-week period ending December 31.
[2] Period end is based on the internal model spot value.
[3] All liquidity horizons are set to 12 months.

The internal model comprehensive risk measure was decommissioned in the fourth quarter of 2018 following regulatory approval. The small remaining exposures captured by this model are now covered by the incremental risk charge and the market risk standardized approach.

Market Risk Standardized Approach

As of December 31, 2018, the securitization positions, for which the specific interest rate risk is calculated using the market risk standardized approach, generated capital requirements of € 418 million corresponding to risk weighted-assets of € 5.2 billion. As of December 31, 2017 these positions generated capital requirements of € 379.5 million corresponding to risk weighted-assets of € 4.7 billion.

For nth-to-default credit default swaps the capital requirement was € 2.6 million corresponding to risk weighted-assets of € 33 million as of December 31, 2018 compared with € 2.8 million and € 35 million as of December 31, 2017.

The capital requirement for Collective Investment Undertakings under the market risk standardized approach was € 14 million corresponding to risk weighted-assets of € 180 million as of December 31, 2018, compared with € 45 million and € 556 million as of December 31, 2017.

The capital requirement for longevity risk under the market risk standardized approach was € 14 million corresponding to risk-weighted assets of € 180 million as of December 31, 2018, compared with € 32 million and € 395 million as of December 31, 2017.

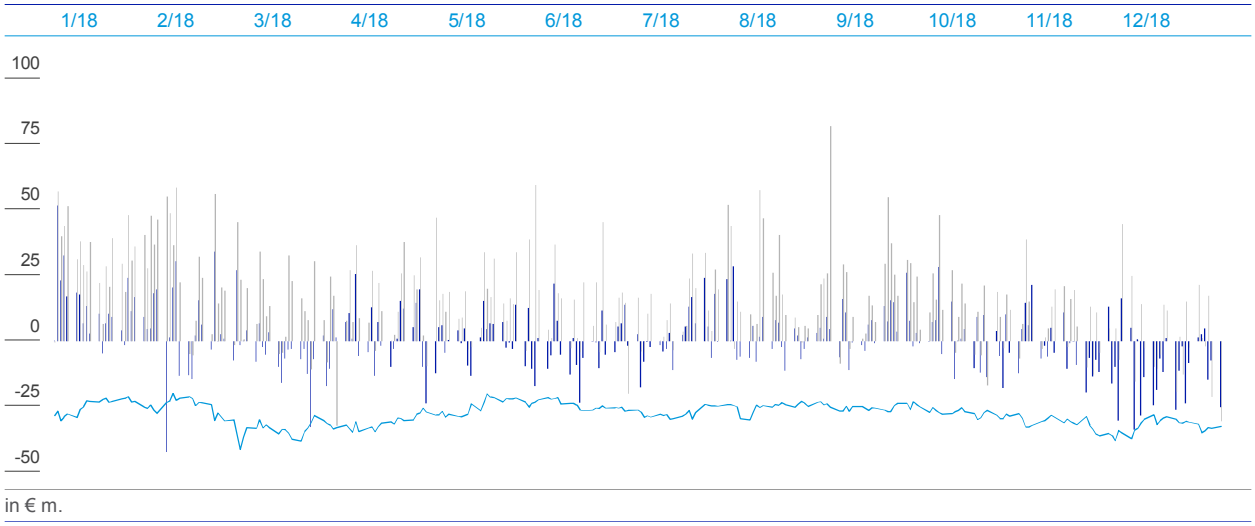
Results of Regulatory Backtesting of Trading Market Risk

In 2018 we observed one global outlier, where our loss on a buy-and-hold basis exceeded the value-at-risk of our Trading Books, compared with three outliers in 2017. The outlier in 2018 occurred in February driven by losses coming from the Equities business line due to an increase in market volatility. There were no Actual Backtesting outliers, which compares the VaR to Total Income less Fees & Commissions, in 2018 compared to two in 2017.

Based on the backtesting results, our analysis of the underlying reasons for outliers and enhancements included in our value-at-risk methodology we continue to believe that our value-at-risk model will remain an appropriate measure for our trading market risk under normal market conditions. The following graph shows the trading units daily buy-and-hold income in comparison to the value-at-risk as of the close of the previous business day for the trading days of the reporting period. The value-at-risk is presented in negative amounts to visually compare the estimated potential loss of our trading positions with the buy and hold income. Figures are shown in millions of euro. The chart shows that our trading units achieved a positive buy and hold income for 52 % of the trading days in 2018 (versus 57 % in 2017), as well as displaying the global outlier experienced in 2018.

The capital requirements for the value-at-risk model, for which the backtesting results are shown here, accounts for 1.5 % of the total capital requirement for the Group.

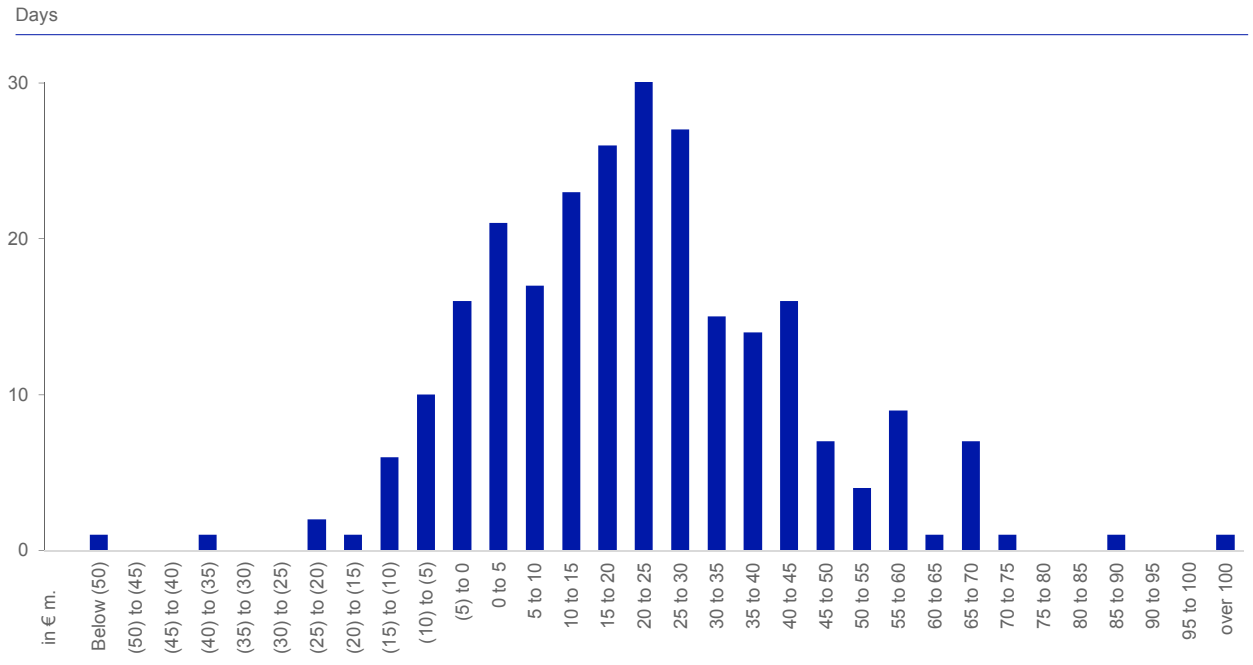
EU MR4 – Comparison of VAR estimates with gains/losses



Daily Income of our Trading Units

The following histogram shows the distribution of daily income of our trading units. Daily income is defined as total income which consists of new trades, fees & commissions, buy & hold income, reserves, carry and other income. It displays the number of trading days on which we reached each level of trading income shown on the horizontal axis in millions of euro.

Distribution of daily income of our trading units in 2018



Our trading units achieved a positive revenue for 86 % of the trading days in 2018 compared with 93 % in the full year 2017.

Nontrading Market Risk Exposures

Economic Capital Usage for Nontrading Market Risk

The following table shows the Nontrading Market Risk economic capital usage by risk type:

Economic Capital Usage by risk type.

	Economic capital usage	
in € m.	Dec 31, 2018	Dec 31, 2017
Interest rate risk	1,416	1,743
Credit spread risk	271	722
Equity and Investment risk	1,239	1,431
Foreign exchange risk	1,713	1,509
Pension risk	1,588	1,174
Guaranteed funds risk	68	49
Total nontrading market risk portfolios	**6,295**	6,628

The economic capital figures do take into account diversification benefits between the different risk types.

Economic Capital Usage for Nontrading Market Risk totaled € 6.3 billion as of December 31, 2018, which is € 0.3 billion below our economic capital usage at year-end 2017.

- Interest rate risk. Economic capital charge for interest rate risk in the banking book, including gap risk, basis risk and option risk, such as the risk of a change in client behavior embedded in modelled non-maturity deposits or prepayment risk. In total the economic capital usage for December 31, 2018 was € 1,416 million, compared to € 1,743 million for December 31, 2017. The decrease in economic capital contribution was mainly driven by diversification effects.
- Credit spread risk. Economic capital charge for portfolios in the banking book subject to material credit spread risk. Economic capital usage was € 271 million as of December 31, 2018, versus € 722 million as of December 31, 2017. The decrease in economic capital contribution was mainly driven by accounting methodology changes in combination with diversification effects.
- Equity and Investment risk. Economic capital charge for equity risk from our non-consolidated investment holdings, such as our strategic investments and alternative assets, and from a structural short position in our own share price arising from our equity compensation plans. The economic capital usage was € 1,239 million as of December 31, 2018, compared with € 1,431 million as of December 31, 2017, predominately driven by a reduced market value of our equity compensation short position.
- Pension risk. This risk arises from our defined benefit obligations, including interest rate risk and inflation risk, credit spread risk, equity risk and longevity risk. The economic capital usage was € 1,588 million and € 1,174 million as of December 31, 2018 and December 31, 2017 respectively. The increase in Pension economic capital is mainly related to methodological improvements and reduced diversification with other risk types.
- Foreign exchange risk. Foreign exchange risk predominately arises from our structural position in unhedged capital and retained earnings in non-euro currencies in certain subsidiaries. Our economic capital usage was € 1,713 million as of December 31, 2018 versus € 1,509 million as of December 31, 2017. The increase in economic capital contribution was mainly driven by changes in deferred tax assets in foreign currency.
- Guaranteed funds risk. Economic capital usage was € 68 million as of December 31, 2018, versus € 49 million as of December 31, 2017. The increase in economic capital contribution was largely was largely driven by diversification effects and market performance.

Interest Rate Risk in the Banking Book

The following table shows the impact on the Group's net interest income in the banking book as well as the change of the economic value for the banking book positions from interest rate changes under the six standard scenarios defined by Basel Committee on Banking Supervision (BCBS):

Economic value & net interest income interest rate risk in the banking book by scenario

	Delta EVE		Delta NII[1]	
in € bn.	Dec 31, 2018	Dec 31, 2017	Dec 31, 2018	Dec 31, 2017
Parallel up	0.8	(0.4)	2.9	2.8
Parallel down	(3.2)	(1.1)	(0.8)	(0.8)
Steepener	0.9	0.2	(0.5)	(0.6)
Flattener	(1.6)	(0.6)	2.7	2.7
Short rate up	(0.7)	(0.5)	3.6	3.5
Short rate down	(0.1)	0.0	(1.0)	(0.7)
Maximum	**(3.2)**	(1.1)	**(1.0)**	(0.8)

in € bn.	Dec 31, 2018	Dec 31, 2017
Tier 1 Capital	**55.1**	57.6

N/A – Not applicable

[1] Delta Net Interest Income (NII) reflects the difference between projected NII in the respective scenario with shifted rates vs. unchanged rates. Sensitivities are based on a static balance sheet at constant exchange rates, excluding trading positions and DWS. Figures do not include Mark to Market (MtM) / Other Comprehensive Income (OCI) effects on centrally managed positions not eligible for hedge accounting.

A sudden parallel increase in the yield curve would positively impact the Group's earnings (net interest income) from the banking book positions. Deutsche Bank estimates that the total one-year net interest income change resulting from parallel yield curve shifts of +200 and (200) basis points (floored by a rate of zero) would be € 2.9 billion and € (0.8) billion, respectively, at December 31, 2018.

The maximum Economic Value of Equity (EVE) loss was € (3.2) billion as of December 2018, compared to € (1.1) billion as of December 2017. The increase in maximum EVE loss was mainly driven by an alignment with regards to the treatment of commercial margins and methodology enhancements with regards to the capture of convexity impacts in combination with the change in interest rate levels. As per December 2018 the maximum EVE loss represents 5.8 % of Tier 1 Capital.

The following table shows the variation of the economic value for Deutsche Bank's banking book positions resulting from downward and upward interest rate shocks by currency:

Economic value interest rate risk in the banking book by currency

	Dec 31, 2018	
in € bn.	-200 bp[1]	+200 bp
EUR	(1.9)	0.6
GBP	(0.1)	0.1
USD	(1.3)	0.2
JPY	(0.0)	0.0
Other	0.1	(0.1)
Total	(3.2)	0.8

[1] Floored at zero

The estimated change in the economic value resulting from the impact of the BCBS parallel yield curve shifts of -200 bps (floored by a rate of zero) and +200 bps would be € (3.2) billion and € 0.8 billion, respectively, at December 31, 2018. The change in +200bps scenario from € (0.4) billion to € 0.8 billion was predominately driven by the alignment with regards to the treatment of commercial margins.

Operational risk exposure

Operational risk – risk profile

Operational risk losses by event type (profit and loss view)

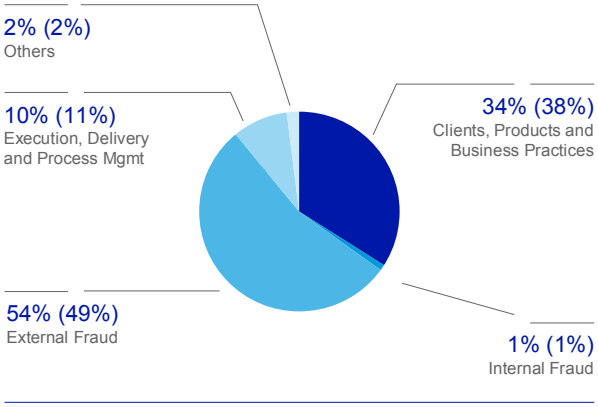
in € m.	2018	2017[1]
Clients, Products and Business Practices	156	513
Internal Fraud	13	(48)
External Fraud	50	19
Execution, Delivery and Process Management	44	224
Others	19	42
Group	**282**	749

[1] 2017 loss figures revised from prior year presentation due to subsequent capture of losses and reclassification.

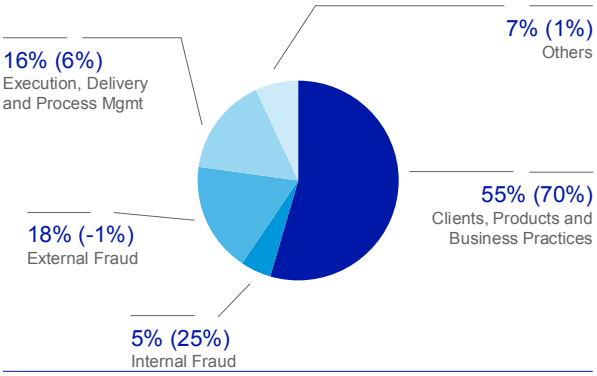
As of December 31, 2018, profit and loss based operational losses decreased by € 467 million or 62 % compared to year-end 2017. The decrease was driven by the event types “Clients, Products and Business Practices” and “Execution, Delivery and Process Management”, due to settlements reached and increased litigation reserves for unsettled cases in 2017.

Operational losses by event type occurred in the period 2018 (2013-2017)[1]

Frequency of Operational Losses (first posting date)



Distribution of Operational Losses (posting date)



[1] Percentages in brackets correspond to loss frequency respectively to loss amount for losses occurred in 2013-2017 period. Frequency and amounts can change subsequently.

The above left chart “Frequency of Operational Losses” summarizes operational risk events which occurred in 2018 compared to the five-year period 2013-2017 in brackets based on the period in which a loss was first recognized for that event. For example, for a loss event that was first recognized in 2010 with an additional profit/loss event recognized in 2018, the frequency chart would not include the loss event, but the loss distribution chart would include the profit/loss recognized in the respective period.

Frequencies are driven by the event types “External Fraud” with a frequency of 54 % and the event type “Clients, Products and Business Practices” with 34 % of all observed loss events. “Execution, Delivery and Process Management” contributes 10 %. “Others” are stable at 2 %. The event type “Internal Fraud” has a low frequency, resulting in less than 1 % of the loss events in the period 2018.

The above right chart “Distribution of Operational Losses” summarizes operational risk loss postings recognized in the profit/loss in 2018 compared to the five-year period 2013-2017. The event type “Clients, Products and Business Practices” dominates the operational loss distribution with a share of 55 % and is determined by outflows related to litigation, investigations and enforcement actions. “External Fraud” has the second highest share (18 %) which is related to one large event in 2018. Finally, the event types “Execution, Delivery and Process Management” (16 %), “Others” (7 %) and “Internal Fraud” (5 %) are minor, compared to other event types.

While we seek to ensure the comprehensive capture of operational risk loss events with a P&L impact of € 10.000 or greater, the totals shown in this section may be underestimated due to delayed detection and recording of loss events.

Liquidity Risk Exposure

Funding Markets and Capital Markets Issuance

2018 has been a challenging year for credit markets. The transition from Quantitative Easing to Quantitative Tightening combined with an increased macro uncertainty led to higher volatility and credit spreads.

Our 5 year CDS traded within a range of 65 to 224 basis points. The peak was observed in the beginning of December, since then, the spread has declined and as of year-end was trading at 208 basis points. The spreads on our bonds exhibited similar behavior . For example, our 2.375 % EUR benchmark maturing in January 2023 traded in a range of 51 to 259 basis points, closing at 230 basis points at year end 2018.

Our revised 2018 issuance plan of € 20-22 billion, comprising debt issuance with an original maturity in excess of one year, was completed and we concluded 2018 having raised €19.8 billion in term funding. This funding was broadly spread across the following funding sources: Senior non-preferred plain-vanilla issuance (€ 9.4 billion), senior preferred plain-vanilla issuance (€ 1.0 billion), covered bond issuance (€ 2.5 billion), and other senior preferred structured issuance (€ 6.9 billion). The (€ 19.8 billion) total is divided into Euro (€ 8.3 billion), US dollar (€ 9.7 billion), British Pound (€ 0.3 billion) and other currencies aggregated (€ 1.5 billion). In addition to direct issuance, we use long-term cross currency swaps to manage our non-Euro funding needs. Our investor base for 2018 issuances comprised asset managers and pension funds (40 %), retail customers (19 %), banks (8 %), governments and agencies (5 %), insurance companies (3%) and other institutional investors (18 %). The geographical distribution was split between Germany (20 %), rest of Europe (35 %), US (25 %), Asia/Pacific (15 %) and Other (5 %).

The average spread of our issuance over 3-months-Euribor (all non-Euro funding spreads are rebased versus 3-months Euribor) was 60 basis points for the full year and lower compared to 71 basis points average spread in 2017. The average tenor was 6.1 years. Our issuance activities were higher in the first half of the year. We issued the following volumes over each quarter: Q1: € 10.8 billion, Q2: € 3.0 billion, Q3: € 3.2 billion and Q4: € 2.8 billion, respectively.

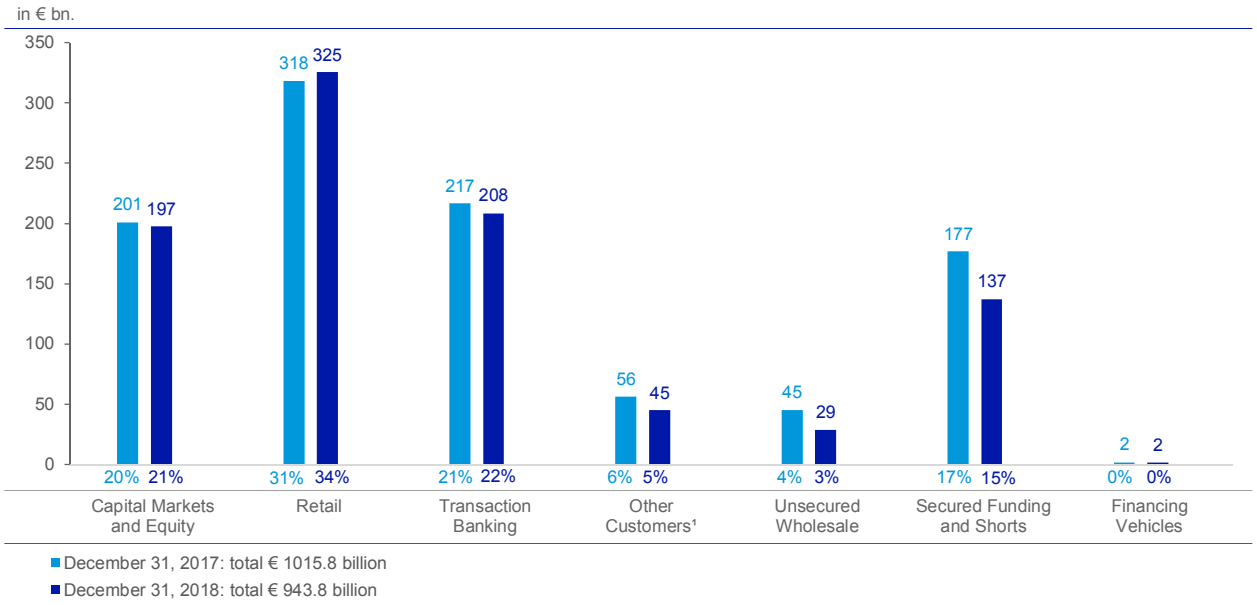
In 2019, our issuance plan is € 20-25 billion which we plan to cover by accessing the above sources, without being overly dependent on any one source. We also plan to raise a portion of this funding in U.S. dollar and may enter into cross currency swaps to manage any residual requirements. We have total capital markets maturities, excluding legally exercisable calls of approximately € 22 billion in 2019.

Funding Diversification

In 2018, total external funding decreased by € 72.1 billion from € 1,015.8 billion at December 31, 2017 to € 943.8 billion at December 31, 2018. The overall decrease was primarily driven by a decrease of balances in Secured Funding and Shorts by € 39.8 billion (55.2 %). This is due to managed reductions as a result of our balance sheet optimization initiatives and increased netting. In addition, unsecured wholesale funding decreased by € 16.4 billion (22.7 %) and Transaction Banking deposits by € 8.2 billion (11.4 %), primarily due to lower volumes and matured trades with financial institution and maturing certificates of deposits held by other wholesale customers. This decrease was partly offset by an increase of € 7.1 billion (9.8 %) in our retail business. The decrease of the Capital Markets and Equity volume by € 3.3 billion (4.6 %) relates to total issuance maturities in excess of new issuances.

The overall proportion of our most stable funding sources (comprising capital markets and equity, retail, and transaction banking) has increased from 72 % in 2017 to 77.5 % in 2018.

Composition of External Funding Sources



[1] Other includes fiduciary, self-funding structures (e.g. X-markets), margin / Prime Brokerage cash balances (shown on a net basis)
Reference: Reconciliation to total balance sheet: Derivatives & settlement balances € 325.0 billion (€ 369.4 billion), add-back for netting effect for Margin & Prime Brokerage cash balances (shown on a net basis) € 51.1 billion (€ 59.2 billion), other non-funding liabilities € 28.3 billion (€ 30.3 billion) for December 31, 2018 and December 31, 2017 respectively; figures may not add up due to rounding.

Maturity of unsecured wholesale funding, ABCP and capital markets issuance[1]

Dec 31, 2018

in € m.	Not more than 1 month	Over 1 month but not more than 3 months	Over 3 months but not more than 6 months	Over 6 months but not more than 1 year	Sub-total less than 1 year	Over 1 year but not more than 2 years	Over 2 years	Total
Deposits from banks	1,119	1,542	4,064	1,181	7,906	151	271	8,328
Deposits from other wholesale customers	1,820	1,868	5,413	5,044	14,145	1,017	1,459	16,621
CDs and CP	823	946	1,313	889	3,972	7	0	3,979
ABCP	0	0	0	0	0	0	0	0
Senior non-preferred plain vanilla	600	5,276	7,463	5,812	19,150	8,954	44,256	72,360
Senior preferred plain vanilla	0	0	0	0	0	5	1,012	1,017
Senior structured	626	951	1,186	1,655	4,418	3,490	15,630	23,538
Covered bonds/ABS	213	972	553	407	2,145	3,848	15,666	21,659
Subordinated liabilities	9	731	2,226	32	2,998	2,217	9,605	14,820
Other	0	0	0	0	0	0	0	0
Total	5,209	12,285	22,219	15,022	54,734	19,690	87,898	162,322
Of which:								
Secured	213	972	553	407	2,145	3,848	15,666	21,659
Unsecured	4,997	11,313	21,666	14,615	52,590	15,842	72,232	140,663

[1] Includes additional Tier 1 notes reported as additional equity components in the financial statements. Liabilities with call features are shown at earliest legally exercisable call date. No assumption is made as to whether such calls would be exercised.

The total volume of unsecured wholesale liabilities, ABCP and capital markets issuance maturing within one year amount to € 55 billion as of December 31, 2018, and should be viewed in the context of our total Liquidity Reserves of € 259 billion.

	Dec 31, 2017							
in € m.	Not more than 1 month	Over 1 month but not more than 3 months	Over 3 months but not more than 6 months	Over 6 months but not more than 1 year	Sub-total less than 1 year	Over 1 year but not more than 2 years	Over 2 years	Total
Deposits from banks	9,709	3,477	2,196	1,172	16,554	721	54	17,330
Deposits from other wholesale customers	3,451	5,884	4,112	3,974	17,421	483	525	18,429
CDs and CP	1,579	2,595	2,381	2,873	9,427	6	82	9,516
ABCP	0	0	0	0	0	0	0	0
Senior non-preferred plain vanilla	405	4,038	3,231	3,288	10,961	16,009	44,399	71,368
Senior preferred plain vanilla	0	0	0	0	0	0	0	0
Senior structured	345	868	1,654	2,952	5,818	3,044	16,893	25,756
Covered bonds/ABS	90	194	1,711	737	2,731	2,190	17,248	22,169
Subordinated liabilities	50	234	5,265	700	6,250	135	11,694	18,079
Other	4	0	0	0	4	0	0	4
Total	15,632	17,289	20,550	15,695	69,167	22,588	90,895	182,650
Of which:								
Secured	90	194	1,711	737	2,731	2,190	17,248	22,169
Unsecured	15,542	17,096	18,840	14,959	66,436	20,398	73,647	160,481

The following table shows the currency breakdown of our short-term unsecured wholesale funding, of our ABCP funding and of our capital markets issuance.

Unsecured wholesale funding, ABCP and capital markets issuance (currency breakdown)

	Dec 31,2018					Dec 31,2017				
in € m.	in EUR	in USD	in GBP	in other CCYs	Total	in EUR	in USD	in GBP	in other CCYs	Total
Deposits from banks	2,400	5,241	22	665	8,328	2,310	11,096	2,423	1,502	17,330
Deposits from other whole-sale customers	15,482	678	269	192	16,621	14,109	3,743	233	344	18,429
CDs and CP	2,279	769	94	838	3,979	6,401	1,942	310	863	9,516
ABCP	0	0	0	0	0	0	0	0	0	0
Senior non-preferred plain vanilla	33,736	31,549	1,163	5,913	72,360	36,407	27,482	864	6,616	71,368
Senior preferred plain vanilla	1,017	0	0	0	1,017	0	0	0	0	0
Senior structured	8,858	11,564	22	3,094	23,538	9,937	12,301	31	3,487	25,756
Covered bonds/ ABS	21,659	0	0	0	21,659	22,142	25	0	2	22,169
Subordinated liabilities	6,338	7,498	801	183	14,820	7,940	8,960	801	378	18,079
Other	0	0	0	0	0	0	4	0	0	4
Total	**91,768**	**57,298**	**2,372**	**10,884**	**162,322**	99,245	65,552	4,662	13,192	182,650
Of which:										
Secured	21,659	0	0	0	21,659	22,142	25	0	2	22,169
Unsecured	70,110	57,298	2,372	10,884	140,663	77,103	65,527	4,662	13,190	160,481

Liquidity Reserves

Composition of our liquidity reserves by parent company (including branches) and subsidiaries

	Dec 31, 2018		Dec 31, 2017	
in € bn.	Carrying Value	Liquidity Value	Carrying Value	Liquidity Value
Available cash and cash equivalents (held primarily at central banks)	184	184	222	222
Parent (incl. foreign branches)	148	148	189	189
Subsidiaries	36	36	33	33
Highly liquid securities (includes government, government guaranteed and agency securities)	61	58	39	37
Parent (incl. foreign branches)	31	28	24	23
Subsidiaries	30	30	15	15
Other unencumbered central bank eligible securities	15	11	19	13
Parent (incl. foreign branches)	11	8	11	8
Subsidiaries	3	2	8	5
Total liquidity reserves	**259**	**252**	280	272
Parent (incl. foreign branches)	191	184	223	219
Subsidiaries	69	68	56	53

As of December 31, 2018, our liquidity reserves amounted to € 259 billion compared with € 280 billion as of December 31, 2017. The decrease of € 21 billion comprised a € 38 billion decrease in cash and cash equivalents, a € 4 billion decrease in other unencumbered securities offset by an increase of € 22 billion in highly liquid securities. The development was largely driven by management action to actively reduce excess liquidity and invest in higher yielding assets as part of our strategy. Our average liquidity reserves during the year were € 271 billion compared with € 269 billion during 2017. In the table above the carrying value represents the market value of our liquidity reserves while the liquidity value reflects our assumption of the value that could be obtained, primarily through secured funding, taking into account the experience observed in secured funding markets at times of stress.

The liquidity value (weighted) of our Liquidity Reserves of € 252 billion exceeds the liquidity value (weighted) of our High Quality Liquid Assets (HQLA) of € 250 billion. The major drivers of this difference are that Liquidity Reserves include central bank eligible, but otherwise less liquid securities (for example traded loans, other investment grade corporate bonds and ABS) which are not recognized in HQLA. Additionally, HQLA includes major index equities, but excludes cash balances deposited with central banks to satisfy minimum cash requirements as well as cash balances deposited with non EU Central Banks rated below AA- which are included in the LCR but not as part of the HQLA.

Liquidity Coverage Ratio

Our weighted average LCR of 145 % (twelve months average) has been calculated in accordance with the Commission Delegated Regulation (EU) 2015/61 and the EBA Guidelines on LCR disclosure to complement the disclosure of liquidity risk management under Article 435 CRR.

The year-end LCR as of December 31, 2018 stands at 140.37 % compared to 139.70 % as of December 31, 2017.

LCR components

	Dec 31, 2018	Dec 31, 2017
in € bn. (unless stated otherwise)	Total adjusted weighted value (average)	Total adjusted weighted value (average)
Number of data points used in the calculation of averages	**12**	12
Liquidity buffer	**250**	247
Total net cash outflows	**172**	172
Liquidity Coverage Ratio (LCR) in %	145 %	144 %

Funding Risk Management

Structural Funding

All funding matrices (the aggregate currency, the U.S. dollar and the GBP funding matrix) were in line with the respective risk appetite as of year ends 2018 and 2017.

Stress Testing and Scenario Analysis

During 2018, our stressed Net Liquidity Position remained well above the risk appetite and finished 2018 with a surplus of € 48 billion.

Global All Currency Daily Stress Testing Results

	Dec 31, 2018			Dec 31, 2017		
in € bn.	Funding Gap[1]	Gap Closure[2]	Net Liquidity Position	Funding Gap[1]	Gap Closure[2]	Net Liquidity Position
Systemic market risk	93	209	116	121	284	163
1 notch downgrade (DB specific)	63	193	131	79	252	173
Severe downgrade (DB specific)	222	278	57	287	331	43
Combined[3]	231	279	48	318	351	33

[1] Funding gap caused by impaired rollover of liabilities and other projected outflows.
[2] Based on liquidity generation through Liquidity Reserves and other countermeasures.
[3] Combined impact of systemic market risk and severe downgrade.

Global EUR Daily Stress Testing Results

	Dec 31, 2018			Dec 31, 2017		
in €	Funding Gap[1]	Gap Closure[2]	Net Liquidity Position	Funding Gap[1]	Gap Closure[2]	Net Liquidity Position
Combined[3]	117	144	28	157	172	15

[1] Funding gap caused by impaired rollover of liabilities and other projected outflows.
[2] Based on liquidity generation through Liquidity Reserves and other countermeasures.
[3] Combined impact of systemic market risk and severe downgrade.

Global USD Daily Stress Testing Results

	Dec 31, 2018			Dec 31, 2017		
in € bn.	Funding Gap[1]	Gap Closure[2]	Net Liquidity Position	Funding Gap[1]	Gap Closure[2]	Net Liquidity Position
Combined[3]	83	96	13	114	127	13

[1] Funding gap caused by impaired rollover of liabilities and other projected outflows.
[2] Based on liquidity generation through Liquidity Reserves and other countermeasures.
[3] Combined impact of systemic market risk and severe downgrade.

Global GBP Daily Stress Testing Results

	Dec 31, 2018			Dec 31, 2017		
in € bn.	Funding Gap[1]	Gap Closure[2]	Net Liquidity Position	Funding Gap	Gap Closure	Net Liquidity Position
Combined[3]	6	9	3	14	18	4

[1] Funding gap caused by impaired rollover of liabilities and other projected outflows.
[2] Based on liquidity generation through Liquidity Reserves and other countermeasures.
[3] Combined impact of systemic market risk and severe downgrade.

The following table presents the amount needed to meet collateral requirements from contractual obligations in the event of a one- or two-notch downgrade by rating agencies for all currencies..

Contractual Obligations

	Dec 31, 2018		Dec 31, 2017	
in € m.	One-notch downgrade	Two-notch downgrade	One-notch downgrade	Two-notch downgrade
Contractual derivatives funding or margin requirements	688	994	1,024	1,577
Other contractual funding or margin requirements	0	0	317	1,459

Asset Encumbrance

This section refers to asset encumbrance in the group of institutions consolidated for banking regulatory purposes pursuant to the German Banking Act. Thereunder not included are insurance companies or companies outside the finance sector. Assets pledged by our insurance subsidiaries are included in Note 22 “Assets Pledged and Received as Collateral” of the consolidated financial statements, and restricted assets held to satisfy obligations to insurance companies’ policy holders are included within Note 40 “Information on Subsidiaries” of the consolidated financial statements.

Encumbered assets primarily comprise those on- and off-balance sheet assets that are pledged as collateral against secured funding, collateral swaps, and other collateralized obligations. Additionally, in line with the EBA technical standards on regulatory asset encumbrance reporting, we consider as encumbered assets placed with settlement systems, including default funds and initial margins, as well as other assets pledged which cannot be freely withdrawn such as mandatory minimum reserves at central banks. We also include derivative margin receivable assets as encumbered under these EBA guidelines.

Readily available assets are those on- and off-balance sheet assets that are not otherwise encumbered, and which are in freely transferrable form. Unencumbered financial assets at fair value, other than securities borrowed or purchased under resale agreements and positive market value from derivatives, and available for sale investments are all assumed to be readily available.

The readily available value represents the current balance sheet carrying value rather than any form of stressed liquidity value (see the “Liquidity Reserves” for an analysis of unencumbered liquid assets available under a liquidity stress scenario). Other unencumbered on- and off-balance sheet assets are those assets that have not been pledged as collateral against secured funding or other collateralized obligations, or are otherwise not considered to be ready available. Included in this category are securities borrowed or purchased under resale agreements and positive market value from derivatives. Similarly, for loans and other advances to customers, these would only be viewed as readily available to the extent they are already in a pre-packaged transferrable format, and have not already been used to generate funding. This represents the most conservative view given that an element of such loans currently shown in Other assets could be packaged into a format that would be suitable for use to generate funding.

Encumbered and unencumbered assets

	Dec 31, 2018			
	Carrying value			
			Unencumbered assets	
in € bn. (unless stated otherwise)	Assets	Encumbered assets	Readily available	Other
Debt securities	143	56	87	0
Equity instruments	56	42	15	0
Other assets:				
Cash and due from banks & Interest earning deposits with Banks	197	12	185	0
Securities borrowed or purchased under resale agreements[1]	12	0	0	12
Financial assets at fair value through profit and loss[2]				
Trading assets	12	0	12	0
Positive market value from derivative financial instruments	320	0	0	320
Securities borrowed or purchased under resale agreements[1]	69	0	0	69
Other financial assets at fair value through profit or loss	21	0	21	0
Financial assets available for sale[2]	6	0	5	1
Loans	441	75	5	360
Other assets	71	41	0	31
Total	1,348	225	330	793

[1] Securities borrowed and securities purchased under resale agreements are all shown as other unencumbered. The use of the underlying collateral is separately captured in the off-balance sheet table below.
[2] Excludes Debt securities and Equity instruments (separately disclosed above).

	Dec 31, 2018			
	Fair value of collateral received			
			Unencumbered assets	
in € bn. (unless stated otherwise)	Assets	Encumbered assets	Readily available	Other
Collateral received:	292	240	47	5
Debt securities	185	149	37	0
Equity instruments	102	92	10	0
Other collateral received	5	0	0	5

in € bn. (unless stated otherwise)	Dec 31, 2017 Carrying value Assets	Encumbered assets	Unencumbered assets Readily available	Other
Debt securities	148	65	84	0
Equity instruments	86	63	23	0
Other assets:				
Cash and due from banks & Interest earning deposits with Banks	234	11	223	0
Securities borrowed or purchased under resale agreements[1]	27	0	0	27
Financial assets at fair value through profit and loss[2]				
Trading assets	11	0	11	0
Positive market value from derivative financial instruments	363	0	0	363
Securities borrowed or purchased under resale agreements[1]	78	0	0	78
Other financial assets at fair value through profit or loss	5	0	5	0
Financial assets available for sale[2]	3	0	3	0
Loans	417	70	15	332
Other assets	108	42	0	66
Total	1,480	251	363	866

[1] Securities borrowed and securities purchased under resale agreements are all shown as other unencumbered. The use of the underlying collateral is separately captured in the off-balance sheet table below.
[2] Excludes Debt securities and Equity instruments (separately disclosed above).
[3] Prior period results have been restated due to a refined approach to determine assets pledged.

in € bn. (unless stated otherwise)	Dec 31, 2017 Fair value of collateral received Assets	Encumbered assets	Unencumbered assets Readily available	Other
Collateral received:	365	307	58	0
Debt securities	228	189	39	0
Equity instruments	137	118	18	0
Other collateral received	0	0	0	0

[1] Prior period results have been restated due to a refined approach to determine collateral received and collateral re-pledged.

The above tables set out a breakdown of on- and off-balance sheet items, broken down between encumbered, readily available and other. Any securities borrowed or purchased under resale agreements are shown based on the fair value of collateral received.

The above tables of encumbered assets include assets that are not encumbered at an individual entity level, but which may be subject to restrictions in terms of their transferability within the group. Such restrictions may be due to local connected lending requirements or similar regulatory restrictions. In this situation it is not feasible to identify individual balance sheet items that cannot be transferred.

Maturity Analysis of Assets and Financial Liabilities

Treasury manages the maturity analysis of assets and liabilities. Modeling of assets and liabilities is necessary in cases where the contractual maturity does not adequately reflect the liquidity risk position. The most significant example in this context would be immediately repayable deposits from retail and transaction banking customers which have consistently displayed high stability throughout even the most severe financial crises.

The modeling profiles are part of the overall liquidity risk management framework (see section “Liquidity Stress Testing and Scenario Analysis” for short-term liquidity positions ≤ 1 year and section “Structural Funding” for long-term liquidity positions > 1 year) which is defined and approved by the Management Board.

The following tables present a maturity analysis of our total assets based on carrying value and upon earliest legally exercisable maturity as of December 31, 2018 and 2017, respectively.

Analysis of the earliest contractual maturity of assets

Dec 31, 2018

in € m.	On demand (incl. Overnight and one day notice)	Up to one month	Over 1 month to no more than 3 months	Over 3 months but no more than 6 months	Over 6 months but no more than 9 months	Over 9 months but no more than 1 year	Over 1 year but no more than 2 years	Over 2 years but no more than 5 years	Over 5 years	Total
Cash and central bank balances	182,778	2,596	224	0	22	3,070	40	0	0	188,732
Interbank balances (w/o central banks)	4,234	3,182	202	110	131	422	0	0	599	8,881
Central bank funds sold	0	0	0	0	0	0	0	0	0	0
Securities purchased under resale agreements	40	2,537	1,415	887	461	521	1,067	1,294	0	8,222
With banks	1	2,015	173	588	447	266	0	1,136	0	4,626
With customers	39	522	1,242	299	14	255	1,067	158	0	3,596
Securities borrowed	2,880	517	0	0	0	0	0	0	0	3,396
With banks	49	60	0	0	0	0	0	0	0	110
With customers	2,830	456	0	0	0	0	0	0	0	3,287
Financial assets at fair value through profit or loss	472,750	37,855	14,782	2,174	2,830	5,872	2,274	4,617	30,085	573,240
Trading assets	152,456	0	0	0	0	0	0	0	281	152,738
Fixed-income securities and loans	96,650	0	0	0	0	0	0	0	18	96,668
Equities and other variable-income securities	55,250	0	0	0	0	0	0	0	264	55,514
Other trading assets	556	0	0	0	0	0	0	0	0	556
Positive market values from derivative financial instruments	320,058	0	0	0	0	0	0	0	0	320,058
Non-trading financial assets mandatory at fair value through profit or loss	236	37,855	14,782	2,174	2,830	5,872	2,274	4,617	29,804	100,444
Securities purchased under resale agreements	0	32,550	3,231	616	372	78	110	2,098	5,488	44,543
Securities borrowed	0	4,331	625	2	0	0	39	0	19,213	24,210
Fixed-income securities and loans	1	739	10,855	1,556	2,458	4,590	1,777	2,501	3,763	28,239
Other non-trading financial assets mandatory at fair value through profit or loss	235	235	72	0	0	1,204	348	18	1,340	3,453
Financial assets designated at fair value through profit or loss	0	9	95	0	0	0	0	0	1	104
Positive market values from derivative financial instruments qualifying for hedge accounting	0	143	179	220	21	23	322	641	1,480	3,028
Financial assets available for sale	N/M	N/M	N/M	N/M	N/M	N/M	N/M	N/M	N/M	N/M
Financial assets at fair value through other comprehensive income	3	3,101	2,290	2,945	3,982	4,403	6,858	16,371	11,228	51,182
Securities purchased under resale agreements	0	1,097	0	0	0	0	0	0	0	1,097
Securities borrowed	0	0	0	0	0	0	0	0	0	0
Debt securities	0	1,692	1,717	2,519	3,811	4,307	6,252	13,494	11,203	44,993
Loans	3	312	574	426	171	96	606	2,878	25	5,092
Other	0	0	0	0	0	0	0	0	0	0
Loans	15,812	39,559	23,116	14,432	9,585	8,324	23,928	67,648	197,892	400,297
To banks	170	1,644	1,394	1,017	120	131	544	406	1,179	6,605
To customers	15,642	37,915	21,722	13,415	9,465	8,194	23,383	67,242	196,713	393,691
Retail	2,238	7,109	3,702	1,735	857	887	4,794	15,099	151,001	187,422
Corporates and other customers	13,404	30,806	18,020	11,680	8,609	7,307	18,589	52,143	45,712	206,269
Securities held to maturity	N/M	N/M	N/M	N/M	N/M	N/M	N/M	N/M	N/M	N/M
Other financial assets	65,390	7,813	446	418	108	2,917	835	2,416	1,844	82,187
Total financial assets	**743,887**	**97,311**	**42,750**	**21,187**	**17,142**	**25,551**	**35,324**	**92,987**	**243,130**	**1,319,269**
Other assets	**13,198**	**91**	**91**	**124**	**158**	**197**	**34**	**984**	**13,991**	**28,868**
Total assets	**757,086**	**97,402**	**42,841**	**21,311**	**17,300**	**25,749**	**35,357**	**93,972**	**257,121**	**1,348,137**

Analysis of the earliest contractual maturity of assets

Dec 31, 2017

in € m.	On demand (incl. Overnight and one day notice)	Up to one month	Over 1 month to no more than 3 months	Over 3 months but no more than 6 months	Over 6 months but no more than 9 months	Over 9 months but no more than 1 year	Over 1 year but no more than 2 years	Over 2 years but no more than 5 years	Over 5 years	Total
Cash and central bank balances	222,082	1,173	106	94	29	2,053	118	0	0	225,655
Interbank balances (w/o central banks)	4,737	2,613	305	215	116	696	122	0	463	9,265
Central bank funds sold	0	0	0	0	0	0	0	0	0	0
Securities purchased under resale agreements	29	4,625	1,220	1,277	1,448	617	561	89	105	9,971
With banks	21	3,758	585	735	1,400	443	468	0	0	7,409
With customers	8	867	635	542	48	175	94	89	105	2,562
Securities borrowed	15,786	553	49	0	323	0	22	0	0	16,732
With banks	1,889	283	0	0	0	0	0	0	0	2,172
With customers	13,896	270	49	0	323	0	22	0	0	14,560
Financial assets at fair value through profit or loss – trading	565,632	40,074	14,269	1,914	731	455	1,805	3,047	9,043	636,970
Trading assets	184,661	0	0	0	0	0	0	0	0	184,661
Fixed-income securities and loans	98,140	0	0	0	0	0	0	0	0	98,140
Equities and other variable-income securities	85,932	0	0	0	0	0	0	0	0	85,932
Other trading assets	590	0	0	0	0	0	0	0	0	590
Positive market values from derivative financial instruments	361,032	0	0	0	0	0	0	0	0	361,032
Financial assets designated at fair value through profit or loss	19,938	40,074	14,269	1,914	731	455	1,805	3,047	9,043	91,276
Securities purchased under resale agreements	5,364	36,195	12,160	1,115	662	125	1,066	903	253	57,843
Securities borrowed	14,540	3,786	1,928	0	0	0	0	0	0	20,254
Fixed-income securities and loans	34	93	182	799	68	17	720	2,144	8,216	12,273
Equities and other variable-income securities	0	0	0	0	0	132	20	0	573	725
Other financial assets designated at fair value through profit or loss	0	0	0	0	0	181	0	0	1	182
Positive market values from derivative financial instruments qualifying for hedge accounting	0	40	191	26	139	9	119	1,029	1,601	3,153
Financial assets available for sale	47	1,175	1,257	2,934	1,728	2,742	5,469	15,438	18,608	49,397
Fixed-income securities and loans	24	969	1,253	2,934	1,728	2,021	5,404	15,418	18,016	47,766
Equities and other variable-income securities	23	206	4	0	0	721	64	20	592	1,630
Loans	17,334	27,284	27,229	17,442	9,273	14,628	27,053	62,232	199,225	401,699
To banks	787	2,163	2,832	1,979	1,253	821	1,103	670	1,230	12,838
To customers	16,546	25,121	24,397	15,463	8,021	13,807	25,950	61,562	197,995	388,862
Retail	4,291	4,725	4,645	1,632	1,721	1,313	4,720	15,216	151,449	189,712
Corporates and other customers	12,256	20,395	19,752	13,831	6,300	12,493	21,230	46,346	46,546	199,149
Securities held to maturity	0	0	0	0	0	0	0	1,652	1,518	3,170
Other financial assets	85,083	352	179	135	92	143	21	433	74	86,513
Total financial assets	910,728	77,889	44,804	24,037	13,878	21,343	35,290	83,920	230,636	1,442,525
Other assets	20,451	0	0	0	0	0	0	0	11,756	32,207
Total assets	931,178	77,889	44,804	24,037	13,878	21,343	35,290	83,920	242,392	1,474,732

The following tables present a maturity analysis of our total liabilities based on carrying value and upon earliest legally exercisable maturity as of December 31, 2018 and 2017, respectively.

Analysis of the earliest contractual maturity of liabilities

Dec 31, 2018

in € m.	On demand (incl. Over-night and one day notice)	Up to one month	Over 1 month to no more than 3 months	Over 3 months but no more than 6 months	Over 6 months but no more than 9 months	Over 9 months but no more than 1 year	Over 1 year but no more than 2 years	Over 2 years but no more than 5 years	Over 5 years	Total
Deposits	348,026	26,750	109,965	26,422	10,517	10,021	11,563	9,662	11,479	564,405
Due to banks	46,399	2,487	8,699	6,059	913	1,624	2,284	5,470	8,045	81,980
Due to customers	301,627	24,263	101,266	20,363	9,604	8,397	9,279	4,193	3,434	482,425
Retail	125,292	9,731	74,012	3,878	1,736	1,176	917	970	603	218,314
Corporates and other customers	176,335	14,532	27,254	16,486	7,868	7,221	8,362	3,223	2,831	264,111
Trading liabilities	361,411	0	0	0	0	0	0	0	0	361,411
Trading securities	59,629	0	0	0	0	0	0	0	0	59,629
Other trading liabilities	295	0	0	0	0	0	0	0	0	295
Negative market values from derivative financial instruments	301,487	0	0	0	0	0	0	0	0	301,487
Financial liabilities designated at fair value through profit or loss (without loan commitments and financial guarantees)	11,282	28,466	3,640	4,699	540	370	639	1,041	3,079	53,757
Securities sold under repurchase agreements	10,822	27,909	3,031	4,259	0	2	208	17	6	46,254
Long-term debt	255	33	238	234	416	155	391	936	2,949	5,607
Other financial liabilities designated at fair value through profit or loss	205	524	372	206	124	212	40	89	124	1,895
Investment contract liabilities	0	0	0	0	0	512	0	0	0	512
Negative market values from derivative financial instruments qualifying for hedge accounting	0	178	431	383	93	25	264	241	306	1,922
Central bank funds purchased	252	0	0	0	0	0	0	0	0	252
Securities sold under repurchase agreements	3,151	611	349	3	265	234	0	1	0	4,615
Due to banks	2,205	513	264	3	265	205	0	1	0	3,456
Due to customers	945	99	85	0	0	29	0	0	0	1,158
Securities loaned	3,357	1	1	0	0	0	0	0	0	3,359
Due to banks	1,320	1	0	0	0	0	0	0	0	1,322
Due to customers	2,036	0	1	0	0	0	0	0	0	2,037
Other short term borrowings	11,067	899	584	1,136	266	205	0	0	0	14,158
Long-term debt	0	1,735	28,579	9,505	5,017	2,480	22,627	47,762	34,377	152,083
Debt securities - senior	0	1,678	7,444	8,977	4,388	1,790	15,050	43,552	25,510	108,389
Debt securities - subordinated	0	28	1,943	109	1	0	1,314	1,232	2,089	6,717
Other long-term debt - senior	0	26	19,193	376	592	673	6,250	2,838	6,602	36,550
Other long-term debt - subordinated	0	3	0	42	36	17	13	141	175	427
Trust Preferred Securities	0	0	0	3,168	0	0	0	0	0	3,168
Other financial liabilities	96,571	976	1,785	134	44	1,024	268	101	59	100,962
Total financial liabilities	**835,117**	**59,617**	**145,335**	**45,450**	**16,743**	**14,872**	**35,361**	**58,809**	**49,300**	**1,260,603**
Other liabilities	**18,797**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**18,797**
Total equity	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**68,737**	**68,737**
Total liabilities and equity	**853,913**	**59,617**	**145,335**	**45,450**	**16,743**	**14,872**	**35,361**	**58,809**	**118,037**	**1,348,137**
Off-balance sheet commitments given	39,720	9,767	13,480	19,872	9,390	15,678	27,793	91,753	36,200	263,654
Banks	20,274	5,010	7,445	10,854	5,178	8,539	14,394	46,720	19,178	137,593
Retail	8,192	1,246	388	86	115	577	343	79	4,360	15,386
Corporates and other customers	11,253	3,511	5,647	8,932	4,097	6,563	13,055	44,954	12,662	110,674

Analysis of the earliest contractual maturity of liabilities

Dec 31, 2017

in € m.	On demand (incl. Over-night and one day notice)	Up to one month	Over 1 month to no more than 3 months	Over 3 months but no more than 6 months	Over 6 months but no more than 9 months	Over 9 months but no more than 1 year	Over 1 year but no more than 2 years	Over 2 years but no more than 5 years	Over 5 years	Total
Deposits	359,619	34,022	111,755	23,845	12,259	9,488	9,296	9,503	12,087	581,873
Due to banks	58,070	5,618	10,520	4,464	1,081	1,345	2,744	5,277	8,921	98,041
Due to customers	301,549	28,404	101,234	19,381	11,178	8,143	6,552	4,226	3,165	483,832
Retail	120,110	10,308	73,943	3,059	2,074	1,336	1,111	1,187	601	213,730
Corporates and other customers	181,439	18,095	27,291	16,323	9,103	6,806	5,441	3,038	2,565	270,102
Trading liabilities	414,189	0	0	0	0	0	0	0	0	414,189
Trading securities	71,148	0	0	0	0	0	0	0	0	71,148
Other trading liabilities	314	0	0	0	0	0	0	0	0	314
Negative market values from derivative financial instruments	342,726	0	0	0	0	0	0	0	0	342,726
Financial liabilities designated at fair value through profit or loss (without loan commitments and financial guarantees)	16,018	29,236	6,080	1,574	548	5,520	665	1,091	3,134	63,866
Securities sold under repurchase agreements	14,722	28,857	4,167	1,089	5	4,897	62	24	18	53,840
Long-term debt	256	33	582	323	345	427	603	889	2,980	6,439
Other financial liabilities designated at fair value through profit or loss	1,040	346	1,332	161	199	196	1	178	136	3,587
Investment contract liabilities	0	0	0	0	0	574	0	0	0	574
Negative market values from derivative financial instruments qualifying for hedge accounting	0	11	58	230	65	41	423	249	218	1,294
Central bank funds purchased	174	83	0	0	0	0	0	0	0	257
Securities sold under repurchase agreements	14,143	353	1,497	409	94	837	476	16	23	17,849
Due to banks	11,459	266	1,453	327	43	736	476	11	0	14,772
Due to customers	2,684	87	44	82	52	102	0	5	23	3,077
Securities loaned	6,684	3	1	0	0	0	0	0	1	6,688
Due to banks	2,253	3	0	0	0	0	0	0	1	2,256
Due to customers	4,432	0	1	0	0	0	0	0	0	4,433
Other short term borrowings	11,831	848	1,542	1,227	738	2,226	0	0	0	18,411
Long-term debt	0	886	5,029	16,419	9,931	14,137	21,218	49,923	42,172	159,715
Debt securities - senior	0	626	4,266	3,481	5,873	3,334	19,392	45,546	26,978	109,496
Debt securities - subordinated	0	0	189	267	67	11	48	1,096	5,554	7,232
Other long-term debt - senior	0	210	529	12,496	3,886	10,722	1,685	3,230	9,362	42,120
Other long-term debt - subordinated	0	50	45	176	105	70	93	50	278	868
Trust Preferred Securities	0	0	1,644	2,723	274	183	666	0	0	5,491
Other financial liabilities	112,960	1,254	2,228	180	197	177	204	163	4	117,367
Total financial liabilities	**935,618**	**66,696**	**129,835**	**46,607**	**24,107**	**33,182**	**32,949**	**60,944**	**57,637**	**1,387,574**
Other liabilities	**19,051**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**19,051**
Total equity	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**68,099**	**68,099**
Total liabilities and equity	**954,669**	**66,696**	**129,835**	**46,607**	**24,107**	**33,182**	**32,949**	**60,944**	**125,736**	**1,474,724**
Off-balance sheet commitments given	6,290	8,484	10,418	16,261	8,234	15,928	27,732	84,121	28,996	206,464
Banks	238	406	1,398	1,591	557	733	952	346	216	6,437
Retail	352	253	389	247	108	205	223	445	8,483	10,706
Corporates and other customers	5,700	7,825	8,630	14,423	7,569	14,990	26,557	83,330	20,297	189,320

Compensation Report

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Introduction

The 2018 Compensation Report provides detailed compensation information with regard to the overall Deutsche Bank Group.

The Compensation Report comprises the following three sections:

Management Board Compensation Report

The first section of the Report sets out the structure and design of the compensation system for the members of the Management Board of Deutsche Bank AG (compensation policies). It is followed by information on the compensation and other benefits granted by the Supervisory Board to the members of the Management Board of Deutsche Bank AG.

Employee Compensation Report

The second section of the compensation report discloses information with regard to the compensation system and structure that applies to the employees in Deutsche Bank Group (including DWS Group and Postbank units). The report provides details on the Group Compensation Framework and it outlines the decisions on Variable Compensation for 2018. Furthermore, this part contains quantitative disclosures specific to employees identified as Material Risk Takers (MRTs) in accordance with the Remuneration Ordinance for Institutions (*Institutsvergütungsverordnung* – InstVV).

Supervisory Board Report and Disclosure

The third section provides information on the structure and level of compensation for Supervisory Board members of Deutsche Bank AG.

The report complies with the requirements of Section 314 (1) No. 6 of the German Commercial Code (Handelsgesetzbuch, “HGB”), the German Accounting Standard No. 17 (“DRS 17”) “Reporting on Executive Body Remuneration”, CRR, InstVV, and the recommendations of the German Corporate Governance Code.

Letter of the chairman of the Supervisory Board

Dear Shareholders,

In this report you will find comprehensive information on the compensation system and the compensation for the members of the Management Board. Let me summarize in brief the main points:

We have not changed our compensation policies this year, as we believe our existing framework has proven effective. In line with our compensation policies, each Management Board member, alongside a fixed salary and a contribution to the company pension plan, is entitled to a variable compensation which is subject to the achievement of annually defined objectives. The largest part (60 %) of the variable compensation is based on long-term and Group-oriented targets, whereas the remaining (up to 40 %) is based on short-term Group targets and individual or divisional objectives. For the first time in 2018, individual objectives include performance against certain qualitative and quantitative metrics included on the Management Board Balanced Scorecards. These scorecards are being rolled out across the bank and will be further cascaded down the organization during 2019.

In the year under review, the achievement level for the Long-Term-Award was 41 % and for the short-term Group targets 70 %. For details please refer to the following pages.

The bank reported its first net profit since 2014. Since the Management Board had not received any variable compensation for financial years 2015, 2016 and 2017, we are granting the Management Board members the variable compensation that results from the achievement of their respective targets. The outcomes are at the same time differentiated and balanced with values between 80% and 154% within a range of zero to 200%. For the first time, the requirements of the 2017 German Remuneration Ordinance for Institutions have to be applied to the granting of variable compensation for the year under review. As a result, deferred compensation for Management Board members will be subject to a deferral period of at least five years and it will be possible to reclaim compensation components for up to two years after the final tranche has vested in specific situations that have been defined by the regulator.

The Supervisory Board looks forward to discussing this and other topics with you at the General Meeting.

Yours sincerely,

Dr. Paul Achleitner

Management Board Compensation Report

Management Board Compensation Governance

Compensation Control Committee

Prepares the resolutions regarding the compensation policies and the compensation level and presents them to the Supervisory Board.

Supervisory Board

Passes resolutions on the compensation policies and the compensation level. The resolved compensation policies are presented to the Annual General Meeting.

Annual General Meeting

Passes resolutions on the approval of the compensation policies.

The Supervisory Board, as a plenary body, is responsible for the structuring and design of the system for the compensation of the members of the Management Board (compensation policies) as well as for determining their individual compensation. The Supervisory Board is supported by the Compensation Control Committee. The Compensation Control Committee controls and supports the appropriate structuring of the compensation policies and prepares the resolutions of the Supervisory Board regarding the individual compensation of the Management Board members. In addition, the Compensation Control Committee and/or the Supervisory Board will consult independent external consultants where this is considered necessary.

The Compensation Control Committee currently comprises four members. In accordance with regulatory requirements, at least one must have sufficient expertise and professional experience in the area of risk management and risk controlling and at least one other must be an employee representative.

The Supervisory Board regularly reviews the compensation policies for the members of the Management Board. In the case of a change or restructuring of the compensation policies, the Supervisory Board uses the possibility provided in § 120 (4) of the German Stock Corporation Act (Aktiengesetz – AktG) for the General Meeting to approve the system of compensation for Management Board members. This was last seen in 2017, and the Supervisory Board will continue to use this possibility in accordance with the German Act Implementing the Second Shareholder Rights Directive which is currently in the legislative process.

Principles of the Compensation Policies

Numerous factors are to be considered when structuring the compensation policies and determining individual compensation. These factors can be summarized as specific remuneration principles. The following overview shows the core remuneration principles which have an impact on both the compensation policies and the individual remuneration and have therefore been taken into consideration by the Supervisory Board when passing a resolution on questions of remuneration.

When passing a resolution on the structure and determination of compensation, the Supervisory Board considers in particular:

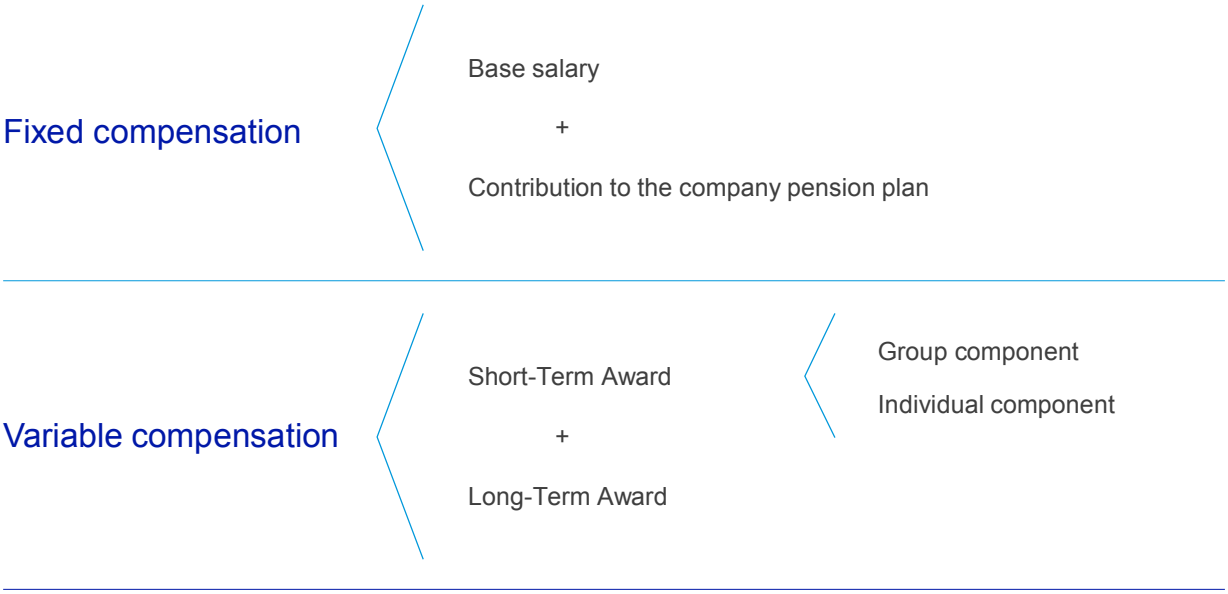
Governance	The structuring of the compensation policies and determination of individual remuneration takes place within the framework of the statutory and regulatory requirements. The Supervisory Board's objective is to offer, within the regulatory requirements, a compensation package that is both in line with customary market practices and competitive with comparable roles.
Group Strategy	Through the structure of the compensation policies the members of the Management Board are to be motivated to achieve the objectives set out in the Bank's strategies, to work continuously towards the positive development of the Group and to avoid unreasonably high risks.
Collective and Individual Performance of the Management Board Members	The variable, performance-related compensation is determined on the basis of the level of achievement of previously agreed objectives. For this purpose, collective and Deutsche Bank Group-related objectives applying equally to all Management Board members are set. In addition, the Supervisory Board sets individual objectives for each member of the Management Board separately, which particularly take into account the development of the business, infrastructure or regional areas of responsibility as the case may be. Such objectives may be financial or non-financial.
Regulatory or other compensation caps	Pursuant to the regulatory approaches under CRD 4, the ratio of fixed to variable compensation is generally limited to 1:1 (cap regulation), i.e. the amount of variable compensation must not exceed that of fixed compensation. However, lawmakers have also stipulated that shareholders can resolve to relax the requirement by setting the ratio of fixed to variable compensation to 1:2. In May 2014, the General Meeting approved the aforementioned setting to 1:2 with a majority of 91 %. The compensation policies resolved by the Supervisory Board also provides fixed caps for the individual variable compensation components. In addition, the Supervisory Board is entitled to set an additional cap for the total compensation of the individual members of the Management Board. In the 2018 financial year, the additional cap is € 9.85 million.
Sustainability Aspects	The total variable compensation for Management Board members is currently only to be granted on a deferred basis. Since 2017, a portion of at least 75 % of the deferred variable compensation is to be granted in the form of equity-based compensation components, which only vest no less than five years after the grant in one tranche (cliff vesting) and are subject to an additional retention period of one year. The remaining portion is to be granted as non-equity based compensation component and to vest in identical tranches over a period of four years. During the deferral and retention period, deferred compensation is subject to specific forfeiture provisions. The total variable compensation may be reclaimed by the bank for up to two years after the expiry of the last deferral period in response to specific individual negative contributions to results made by the Management Board member (clawback).
Interests of the Shareholders	When designing the specific structure of the compensation policies, determining individual compensation amounts, and structuring compensation delivery and allocation, the focus is on ensuring a close link between the interests of both the Management Board members and shareholders. While defining the variable compensation, this is achieved through the utilization of clearly defined key financial figures which are directly linked to the performance of Deutsche Bank.

The compensation policies and the compensation structures they encompass are reflected in the individual Management Board members' contracts.

Compensation Structure

– Transparent Compensation Structures
– Clear link between compensation and previously agreed objectives
– Strong emphasis on the interests of the shareholders

Structure and compensation elements of the compensation policies



The compensation policies applicable since January 2017 consist of non-performance-related (fixed) and performance-related (variable) components.

Non-Performance-Related Components (Fixed Compensation)

The fixed compensation is not linked to performance and consists of the base salary, allowances, contributions to the company pension plan and “other benefits”.

The annual base salary amounts to € 3.4 million for the Chairman of the Management Board. The Presidents receive an annual base salary of € 3 million. The annual base salary for ordinary Management Board members with responsibility for CIB is € 3 million and for all other ordinary board members € 2.4 million.

Various factors were considered when determining the appropriate level of the base salary. First, the base salary rewards general assumption of the office of Management Board member and the related overall responsibility of the individual Management Board members. In addition, the compensation paid in the comparable market is taken into account when determining the amount of the base salary. However, a market comparison must take into consideration that the regulatory requirements pursuant to the German Remuneration Ordinance for Institutions (Institutsvergütungsverordnung – InstVV) in conjunction with Section 25a (5) of the German Banking Act (Kreditwesengesetz) set a cap for variable compensation at 200 % of the fixed compensation. Accordingly, the fixed compensation must be determined in a way that ensures competitive compensation in line with market practice while taking into account the aforementioned requirements. The regulatory required cap was implemented in 2014.

Under InstVV rules, the Supervisory Board is able to award optional functional allowances to Management Board members who are assigned additional tasks and a particular responsibility extending beyond the assigned regular area of responsibility within the Management Board. The allowance can be a maximum of 100 % of the fixed base salary and is paid for as long as the additional tasks and the particular responsibility are assigned to the Management Board member. Under the InstVV rules, functional allowances are considered part of fixed compensation and therefore are not subject to forfeiture or clawback conditions.

Additional non-performance-related components include “other benefits”. The “other benefits” comprise the monetary value of non-cash benefits such as company cars and driver services, insurance premiums, expenses for company-related social functions and security measures including payments, if applicable, of taxes on these benefits as well as taxable reimbursements of expenses.

Performance-Related Components (Variable Compensation)

The current compensation policies provide that compensation must be linked to transparent performance criteria. The structure allows for the agreement of individual and divisional objectives alongside collective objectives and makes it possible to achieve competitive pay levels in line with market practice on the basis of the respective member’s area of responsibility and, at the same time, also meets in this respect the regulatory requirements.

The entire variable compensation is performance-related. It consists of a two components:

- the Short-Term Award and
- the Long-Term Award.

The 2017 InstVV generally stipulates a three-year assessment period for the variable compensation. This requirement is taken into account by assigning a three-year reference period to each of the three objectives of the long-term component. If the relevant three years cannot be attributed to a member of the Management Board due to that member joining the bank only recently, performance will be determined for the period that can be attributed to the Management Board member. In addition, the deferral period of the variable compensation is extended by the number of years missing with respect to the assessment period.

Short-Term Award (STA)

The STA is linked to the achievement of short term and medium-term objectives. Objectives include collective objectives to be achieved by the Management Board as a whole and individual objectives whose achievement level is determined separately for each member of the Management Board.

In order to distinguish collective objectives from individual objectives, the STA is divided into two components:

- the Group Component and
- the Individual Component.

Group Component

The objectives to be achieved form the basis for the calculation of the Group component as part of the STA. The key objective of the Group component is to link the variable compensation for the Management Board to the performance of the Bank.

In 2016, the Management Board decided to align part of the variable compensation for non-tariff employees of the Bank more closely with Group performance. This seeks to reward the contribution of all employees to the financial results of the Bank and the achievements in the implementation of its strategy. Management Board compensation is also closely linked to the performance of the Bank using selected key financial figures. The Supervisory Board decided to align the compensation policies for the Management Board members more closely with the compensation system for employees. This is achieved by using the annual performance metrics underlying the Group component in the compensation system for employees as the reference value for the Group component of the STA since 2017.

In accordance with the strategy, four performance metrics constituting important indicators for the capital, risk, cost and return profile of the Bank form the reference value for the Group Component of the STA:

Common Equity Tier 1 (CET1) capital ratio (fully loaded)	The Common Equity Tier-1 Ratio of the Bank in relation to risk-weighted assets.
Leverage ratio	The Bank´s Tier 1 capital as a percentage of its total leverage exposure pursuant to CRR/CRD 4.
Adjusted costs	Total noninterest expenses, excluding restructuring and severance, litigation and impairment of goodwill and other intangible assets.
Post-tax return on tangible equity (RoTE)	Net income (or loss) attributable to Deutsche Bank shareholders as a percentage of average tangible shareholders' equity. The latter is the shareholders' equity on the bank´s balance sheet, excluding goodwill and other intangible assets.

The Supervisory Board regularly reviews the selection of the performance metrics. The above four objectives are equally weighted at up to 25 % in the determination of the Group Component of the STA, depending on the achievement level. If, overall, the performance metric-based objectives are not achieved during the period being evaluated, the Supervisory Board may determine that a Group component will not be granted.

Individual Component

The individual component of the STA rewards the achievement of short- and medium-term individual objectives. These objectives are established by the Supervisory Board as part of the objective setting agreement for the respective financial year's performance evaluation. The key objectives are designed to contribute to the applicable business policy and strategic objectives of the Bank, in line with each Management Board member's area of responsibility. Not only is financial success taken into account in the process, but also the conduct towards staff members and clients as part of carrying out business activities. Objectives for the individual component may for example include revenue developments in the course of the year, project-related targets, diversity objectives or other developments in employee or client satisfaction.

As part of the annual objective setting agreement, corresponding key financial figures and/or factors are set for all objectives that are used to determine the objective achievement level. As a general rule, three objectives per financial year are set for each Management Board member.

For the first time in 2018, the **Balanced Scorecard** was integrated in the compensation policies of the individual component of the Short Term Award to be determined by the Supervisory Board. The Balanced Scorecard allows for the operationalization of strategic objectives by transforming the latter into concrete measures while simultaneously creating an overview of priorities across the Group. The Balanced Scorecard of Management Board Members consists of two components, (i) the key performance indicators (KPI) and (ii) the key deliverables, the achievement level of which is determined at the end of the financial year. The Balanced Scorecard contains key financial figures as well as (non-financial) key performance indicators for client business, personnel, control environment and innovation. In order to link the Balanced Scorecard to the remuneration of the members of the Management Board, the Supervisory Board resolved that a ratio of 30 % of the individual component of the STA (i.e., 6-9 % of the total variable compensation) included in the component comprising the KPI will be accounted for in the performance evaluation of the Management Board members for the 2018 financial year. The component of the Balanced Scorecard comprising the key deliverables will also be accounted for in the performance evaluation as of the 2019 financial year.

The sum of individually agreed and divisional objectives amounts to a maximum of 90 % of the individual component of the STA, depending on the achievement level of the aforementioned individual objectives and key performance indicators of the Balanced Scorecard. The Supervisory Board decides on the remaining portion of 10 % of the individual component to reward outstanding contributions over the course of the financial year as an exercise of its discretionary authority. If, overall, the objectives are not achieved during the period being evaluated, the Supervisory Board may determine that an individual component will not be granted.

Minimum, Target and Maximum Values

The sum of Group-wide and individually agreed objectives amounts to a maximum of 40 % of the total variable compensation, depending on the achievement level of the aforementioned objectives. This is designed to ensure that the individual objectives do not primarily determine the value of the variable compensation. If, overall, the objectives are not achieved during the period being evaluated, the Supervisory Board may determine that an STA will not be granted.

			2018
in €	Minimum	Target	Maximum
Chairman			
Group component	0	500,000	1,000,000
Individual component	0	1,400,000	2,800,000
STA total[1]	0	1,900,000	3,800,000
Ordinary Board member			
Group component	0	500,000	1,000,000
Individual component (from - up to)	0	800,000	1,600,000
	0	up to 1,400,000	up to 2,800,000
STA total (from - up to)	**0**	1,300,000	2,600,000
	0	up to 1,900,000	up to 3,800,000

[1] STA: Short-Term Award.

Long-Term Award (LTA)

When determining the variable compensation, a clear focus is placed on the achievement of long-term objectives. Therefore, the target figure of the LTA constitutes a portion of no less than 60 % of the total variable target compensation. As with the short-term component, the Supervisory Board determines the collective long-term objectives for the Management Board members. The achievement level is determined on the basis of the definition of clear performance metrics and/or factors which are to be agreed for these objectives at the beginning of a financial year.

60 % of the variable compensation, as a minimum, relate to the long-term component

The Supervisory Board determines a total of three objectives for each Management Board member. Each objective is equally weighted at 1/3 in the assessment of the LTA. For 2018, the Supervisory Board determined the following three common objectives for all Management Board members.

The **relative performance of the Deutsche Bank** share in comparison to selected peer institutions is an objective within the framework of the LTA. This objective is intended to promote the sustainable performance of the Deutsche Bank share. The long-term nature of this objective is supported by the determination of the Relative Total Shareholder Return (RTSR) on the basis of a three-year assessment. The RTSR of Deutsche Bank is derived from the Total Shareholder Return of Deutsche Bank in relation to the average total shareholder returns of a selected peer group (calculated in Euros). This LTA portion is calculated from the average of the annual RTSR for the last three financial years (compensation year and the two preceding years). If the three-year average of the relative total shareholder return of Deutsche Bank is greater than 100 %, then the value of the RTSR portion increases proportionately to an upper limit of 150 % of the target figure, i.e., the value increases by 1 % for each percentage point above 100 %. If the three-year average of the relative total shareholder return is lower than 100 %, the value declines disproportionately. If the relative total shareholder return is calculated to be in the range of less than 100 % to 80 %, the value of the Award portion is reduced for each lower percentage point by 2 percentage points. In the range between 80 % and 60 %, the value of the Award portion is reduced for each lower percentage point by 3 percentage points. If the three-year average of the RTSR does not exceed 60 %, the value of the Award portion is set to zero.

The peer group used for the calculation of the relative total shareholder return is selected based on the criteria of generally comparable business activities, comparable size and international presence. The Supervisory Board reviews the composition of the peer group regularly.

In 2018, the peer group for the RTSR comprises the following banks:

Peer Group of Deutsche Bank

BNP Paribas	Société Générale	Barclays	Credit Suisse	UBS
Bank of America	Citigroup	JP Morgan Chase	HSBC	

The Supervisory Board sets an objective designed to promote the growing and strengthening of the Bank, based on the notion of actual **organic capital growth.** Organic Capital Growth is defined as the balance of the following changes (which are also reported in the Consolidated Statement of Changes in Equity) occurring during the financial year, divided by the Deutsche Bank Shareholders Equity attributable as at December 31 of the previous financial year.

- Total comprehensive income, net of tax
- Coupons on additional equity components, net of tax
- Remeasurement gains (losses) related to defined benefit plans, net of tax
- Option premiums and other effects from options on common shares
- Net gains (losses) on treasury shares sold

Consequently, "non-organic" changes in equity, in particular payment of a dividend or capital increase, are of no relevance to the achievement of the objective.

As in the last year, the third objective is taken from the category "**Culture & Clients**". In this context, the Supervisory sets an objective which is linked to corporate culture, client satisfaction and dealing with clients. This objective is linked to the sustainable development of the intrabank environment or designed to foster the development of client relations for the 2018 financial year. One objective set by the Supervisory Board for all Management Board members is – this year again – again the evaluation of the control environment within the Deutsche Bank Group.

The Long Term Award can be a maximum of 150 % of the respective target figures.

Objectives

Objectives are established by the Supervisory Board as part of an objective setting agreement at the beginning of the respective financial year for purposes of performance evaluation. For all objectives, financial metrics are set to measure the achievement level of the objectives in a transparent way. The discretionary decision is strictly limited to 3 to 6 % with respect to the total variable compensation.

The allocation of the objectives to the individual compensation components is set out below.

	Relevant indicators	Relative weight
Short-Term Award (STA)		
	Group component (1)	
	CET1 ratio	25 %
	Leverage ratio	25 %
	Adjusted non-interest expenses	25 %
	Post-tax return on tangible equity (RoTE)	25 %
	Individual component (2)	
	Individual Objectives	60 %
	Balanced Scorecard	30 %
	Discretion	10 %
Long-Term Award (LTA) (3)		
	Relative total shareholder return	33,34 %
	Organic Capital Growth	33,33 %
	Culture & Clients / Control Environment	33,33 %

(1) Joint strategic key objectives which also form base for the assessment of the group component as part of the compensation system for the employees of DB Group.
(2) Short-term individual and divisional objectives of quantitative and qualitative nature.
(3) Long-term group-wide objectives.

Maximum Compensation

Total Compensation/Target and Maximum Values

					2018	2017
	Base salary		STA[1]	LTA[2]	Total compensation	Total compensation
in €		Group component	Individual component			
Chairman						
Target	3,400,000	500,000	1,400,000	3,400,000	8,700,000	8,700,000
Maximum	3,400,000	1,000,000	2,800,000	5,100,000	12,300,000	12,300,000
Ordinary Board member (CIB)						
Target	3,000,000	500,000	1,400,000	2,800,000	7,700,000	7,700,000
Maximum	3,000,000	1,000,000	2,800,000	4,200,000	11,000,000	11,000,000
Ordinary Board member (AM)						
Target	2,400,000	500,000	1,300,000	2,800,000	7,000,000	7,000,000
Maximum	2,400,000	1,000,000	2,600,000	4,200,000	10,200,000	10,200,000
Ordinary Board member (PCB)						
Target	2,400,000	500,000	1,100,000	2,800,000	6,800,000	6,800,000
Maximum	2,400,000	1,000,000	2,200,000	4,200,000	9,800,000	9,800,000
Ordinary Board member (Infrastructure/Region)						
Target	2,400,000	500,000	800,000	2,800,000	6,500,000	6,500,000
Maximum	2,400,000	1,000,000	1,600,000	4,200,000	9,200,000	9,200,000

[1] STA: Short-Term Award.
[2] LTA: Long-Term Award.

The total compensation of a Management Board member is subject to additional caps. Due to regulatory requirements, the variable compensation is capped at 200 % of the fixed compensation. In addition, the Supervisory Board again set a cap of € 9.85 million for the overall total compensation for the 2018 financial year. Consequently, compensation is capped at a maximum of € 9.85 million, even where the level of the target achievement would result in higher compensation.

Long-Term Incentive and Sustainability

According to the requirements of the InstVV at least 60 % of the total variable compensation must be granted on a deferred basis. Not less than half of this deferred portion may comprise equity-based compensation components, while the remaining portion must be granted as deferred cash compensation. Both compensation components must be deferred over a multi-year period which, for the equity-based compensation components, must be followed by a retention period. During the period until payment or delivery, the compensation portions awarded on a deferred basis may be forfeited. At least half of the maximum of 40 % of the Variable Compensation granted on a non-deferred basis must consist of equity-based compensation components and only the remaining portion may be paid out directly in cash. Of the total Variable Compensation, no more than a maximum of 20 % may be paid out in cash immediately, while at least 80 % are paid or delivered at a later date.

Since 2014, the total variable compensation for Management Board members is only granted on a deferred basis.

At least **75 %** of the variable compensation is granted equity-based

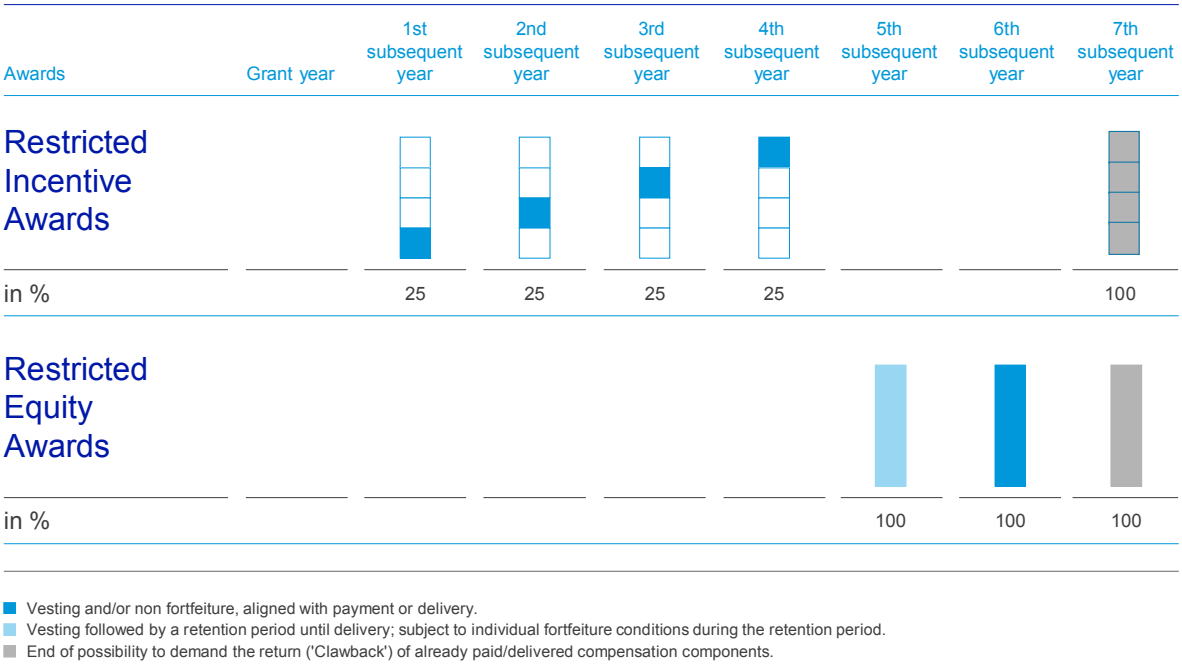
In order to bind the Management Board members even closer to the performance of the Bank and the Deutsche Bank share price, the Supervisory Board decided that as of the 2017 financial year, the long-term component (LTA), and in fact no less than 75 % of the total variable compensation, will continue to be granted only in the form of Restricted Equity Awards. Only the short-term component (STA), however, a maximum of 25 % of the total variable compensation, is granted in the form of Restricted Incentive Awards.

The Restricted Incentive Awards vest over a period of four years. The Restricted Equity Awards vest after five years in one tranche (“cliff vesting”) and have an additional retention period of one year. Accordingly, Management Board members are first permitted to dispose of the equities after six years. During the deferral and retention period, the value of the Restricted Equity Awards is linked to the Bank’s share price and is therefore tied to the sustained performance of the Bank. Specific

forfeiture provisions apply for Restricted Incentive Awards and Restricted Equity Awards during the deferral and retention period.

The following chart shows the time period for the payment or the delivery of the variable compensation components in the five consecutive years following the grant year as well as the period of a possible clawback.

Timeframe for payment or delivery and non-forfeiture for the Management Board



Forfeiture Conditions / Clawback

In order to create long-term incentives, the Restricted Equity Awards and the Restricted Incentive Awards compensation components are deferred or spread out over several years. Awards may be fully or partially forfeited, for example, due to individual misconduct (including a breach of regulations) or termination for cause, and also due to a negative Group result or individual negative contributions to results. In addition, the Awards may be completely forfeited if the statutory or regulatory minimum requirements for the core capital ratio are not met during this period.

The revision of the InstVV adopted in August 2017 requires that “clawback provisions” are to be agreed with the members of the management body (Geschäftsleiter) of significant institutions. Contrary to the forfeiture conditions, this clause allows the Supervisory Board to reclaim already paid out or delivered compensation components in response to specific individual negative contributions to results made by the Management Board member for up to two years after the expiry of the last deferral period. The clawback provision which had already been individually agreed with the Management Board members in 2017 is now for the first time applicable to the compensation elements granted in the 2018 performance year.

Limitations in the Event of Exceptional Developments

In the event of exceptional developments, the total compensation for each Management Board member is limited to a maximum amount. In addition, the Supervisory Board and the members of the Management Board agreed on a possible limitation of the variable compensation which is included in the service agreements of the Management Board members and according to which the variable compensation may be limited to amounts below the provided maximum amounts or may not be granted altogether. Furthermore, statutory regulations provide that the Supervisory Board may reduce the compensation of the Management Board members to an appropriate level, if the situation of the company deteriorates in such a way following the determination of the compensation that the continued granting of the compensation would be unreasonable for the company. A payment of variable compensation elements will also not take place if the payment of Variable Compensation components is prohibited or restricted by the competent regulator in accordance with existing statutory requirements.

Shareholding Guidelines

– Long-term commitment of Management Board members to the Bank
– Identification with Deutsche Bank and its shareholders
– Link to performance of the Bank through deferred compensation

All members of the Management Board are required to hold a specified value of Deutsche Bank shares. This requirement fosters the identification of the Management Board members with Deutsche Bank and its shareholders and aims to ensure a sustainable link to the performance of the Bank.

For the Chairman, the number of shares to be held amounts to two times the annual base salary, i.e., the equivalent of € 6,800,000. For other Management Board members the number of shares to be held is one time the annual base salary, i.e., the equivalent of € 2,400,000 or € 3,000,000, respectively.

The share retention obligations must first be fulfilled on the date on which the Management Board member was granted an overall equity based variable compensation corresponding to 1 ⅓ times the retention obligations since his or her appointment to the Management Board. Deferred equity-based compensation may be taken into account at 75 % of its value towards fulfillment of the obligation.

Observance of the requirement is reviewed semi-annually as of June 30 and December 31. If the required number of shares is not met, the Management Board members must correct any deficiencies by the next review.

As compensation components are deferred or spread out over several years, another link to the performance of the Deutsche Bank share is established that should generally continue to exist even for the period after leaving the Management Board.

Pension benefits

The Supervisory Board allocates an entitlement to pension plan benefits to the Management Board members. These entitlements involve a defined contribution pension plan. Under this pension plan, a personal pension account is set up for each participating member of the Management Board after appointment to the Management Board.

Management Board members receive a contribution in the form of a contractually agreed fixed annual amount in Euro. The contribution accrues interest credited in advance, determined by means of an age-related factor, at an average rate of 4 % per year up to the age of 60. From the age of 61 onwards, an additional contribution in the amount of 4 % per year of the amount reached on December 31 of the previous year will be credited to the pension account.

The annual contributions, taken together, form the pension amount available to pay the future pension benefit in case of a pension event (age limit, disability or death). The pension right is vested from the start.

Other Benefits upon Early Termination

The Management Board members are in principle entitled to receive a severance payment upon early termination of their appointment at the Bank's initiative, provided the Bank is not entitled to revoke the appointment or give notice under the contractual agreement for cause. The circumstances of the early termination of the appointment and the length of service on the Management Board are to be taken into account when determining the amount of the severance payment. The severance payment, as a rule, is two annual compensation amounts and is limited to the claims to compensation for the remaining term of the contract. The calculation of the severance payment is based on the annual compensation for the previous financial year and on the expected annual compensation for the current financial year, if applicable. The severance payment is determined and granted in accordance with the statutory and regulatory requirements, in particular with the provisions of the InstVV.

If a Management Board member leaves office in connection with a change of control, he/she is also, under certain conditions, entitled in principle to a severance payment. The exact amount of the severance payment is determined by the Supervisory Board within its sole discretion. According to the German Corporate Governance Codex, the severance payment will not exceed three annual compensation amounts and is limited to the claims to compensation for the remaining term of the contract. The calculation of the compensation is again based on the annual compensation for the previous financial year.

Management Board compensation for the 2018 financial year

Fixed Compensation

In the 2018 financial year, the annual base salary was € 3,400,000 for the Chairman of the Management Board and € 2,400,000 or € 3,000,000 respectively for the other Management Board members. For the period from November 2017 to August 2018, the Management Board member Stuart Lewis was granted a functional allowance of € 150,000 per month. The Supervisory Board had conferred on Stuart Lewis the additional responsibility to further improve the relationship with U.S. regulators, in addition to his areas of responsibility according to the business allocation plan. For the period from December 2017 to November 2020, Garth Ritchie will receive a monthly functional allowance of € 250,000. Mr. Ritchie has been entrusted with an additional responsibility in connection with the implications of Brexit, in addition to his areas of responsibility according to the business allocation plan.

Variable Compensation

The Supervisory Board, acting on a proposal of the Compensation Control Committee, determined the variable compensation for the Management Board members for the 2018 financial year. The Supervisory Board calculated and determined the amount of the LTA and the STA based on the level of achievement of the respective objectives and/or key performance figures. The individual contribution to results was determined on the basis of the achievement of individually agreed objectives taking into account the results from the Balanced Scorecard.

Level of Objective Achievement

In the 2018 financial year, the development of the four performance metrics for the **Group Component of the STA** was as follows: With respect to the Common Equity Tier 1 (CET1) capital ratio, the desired target level was achieved. The desired leverage ratio was not fully achieved; it improved year-on-year, even though the 2018 target level was not fully reached (please refer to section “Leverage Ratio” in the Risk Report for further detail). The desired 2018 target level for the adjusted noninterest expenses was fully reached. The 2018 post-tax-return target was not met.

In sum, the Supervisory Board determined an achievement level of 70 % for the Group Component.

70 % was the objective achievement level of the STA Group component

The **individual component of the STA** is linked to the achievement of short-term and medium-term individual and divisional objectives determined for the Management Board members in 2018, including those from the Scorecard. The objectives of the current Management Board members as of December 31, 2018 were as follows:

Christian Sewing

Objectives for Mr. Sewing as Management Board member with responsibility for PCB included achieving the objectives of the 2018 Resources Management Plan regarding employees, risk-weighted assets and cost. Another objective was a division-related IBIT target for the 2018 financial year. Mr. Sewing’s objectives as Chairman of the Management Board included the development and implementation of a strategic plan, the communicated cost target of € 23 billion as well as stabilizing and/or improving client satisfaction and employee commitment.

Garth Ritchie

Objectives for Mr. Ritchie included the refocusing of CIB. Communication with clients and internal culture were to be improved. Another objective agreed with Mr. Ritchie as CEO was to create closer ties with regulators in Great Britain.

Karl von Rohr

One of the objectives for Mr. von Rohr was to implement the merger of Postbank AG into Deutsche Bank Privat- und Geschäftskunden AG with respect to legal and HR matters. Mr. von Rohr also had the delivery of the DWS IPO as well as the creation of corporate governance structures at DWS supervisory board level as objectives. The number of pending legal disputes – focusing on the matters posing the highest risk – was to be further reduced. In addition, cost targets were agreed with Mr. von Rohr for his area of responsibility.

Stuart Lewis

One objective for Mr. Lewis was to streamline the risk organization by transferring non-risk-initiatives to more appropriate areas. Another objective was to improve focus and co-operation with Finance. Finally, Mr. Lewis pursued the objective of immediately remediating supervisory findings.

Sylvie Matherat

In her responsibility for the Chief Regulatory Office, Ms. Matherat was mandated to further strengthen the bank's control environment in 2018. For Compliance, she was tasked with the enhancement of Surveillance, which included an effectiveness review and development of scenarios in Trade Surveillance, expansion of e-Communication Surveillance and automation in Voice Surveillance. In addition, she was to implement the requirements of the Fourth Anti Money Laundering Directive (4AMLD) in our Anti-Financial Crime (AFC) policies and roll out the framework for the investigation of financial crime. The third objective agreed with Ms. Matherat was to improve the monitoring of financial transactions. Finally, the strengthening and enhancement of cost management was an objective agreed with Ms. Matherat.

James von Moltke

Objectives for Mr. von Moltke included the design and roll-out of the strategic "Cost Catalyst" program which aims to identify and eliminate structural cost inefficiencies, improve our cost culture and contribute to achieving Deutsche Bank's near-term operating performance targets. Further objectives related to enhancing the Bank's liquidity reporting and management capabilities and executing on organizational enhancements in line with the priorities of the Finance organization.

Nicolas Moreau

Objectives for Mr. Moreau included generating net inflows and achieving a solid investment performance. Further objectives were the implementation of cost reductions and improving cost efficiency. Performance criteria for the objective to create a performance culture in DWS were increasing the percentage of women in management positions and improving employee commitment.

Werner Steinmüller

For the financial year 2018, a revenue target relating to Asia Pacific, the region for which Mr. Steinmüller is accountable, and a cost objective were agreed with Mr. Steinmüller. An additional franchise target was agreed to strengthen and expand Governance, control environment and the Deutsche Bank brand in the region.

Frank Strauß

Mr. Strauß had to achieve an IBIT and a revenue target for the Private & Commercial Clients division. The establishment of "The Bank for Germany" was another objective. A further objective was the 2018 Resources Management Plan regarding employees, risk-weighted assets and cost. Finally, Mr. Strauß was to roll out a digital banking platform.

80 % -154 % was the objective achievement level of the STA individual component

The individual level of achievement of the Management Board members who were in office for the entire year in 2018 is between 80 % and 154 %.

In the 2018 financial year, the development of the three performance metrics for the Group Component of **the LTA** was as follows: Although the RTSR improved year-on-year, the average performance in the relevant three-year-period (2016 to 2018) was 73.6 % and as a result was below the performance of the peer group; this resulted in an achievement level of 42 %. Organic Capital Growth as defined developed negatively from 2016 to 2018; the resulting achievement level was 0 %. The strengthening of the control environment was evaluated based on feedback from internal audit and supervisory authorities and has improved again in 2018; the achievement level was 81 %. As a result of these factors, the overall achievement level resolved by the Supervisory Board is 41 %.

41 % was the LTA objective achievement level

Total Compensation

The members of the Management Board collectively received in/for the 2018 financial year compensation (without fringe benefits and pension service costs) totaling € 55,716,289 (2017: € 29,750,000). € 29,911,111 of this amount was for fixed compensation (2017: € 29,750,000). € 25,805,178 (2017: € 0) was received for performance-related components with long-term incentives.

The Supervisory Board determined the aforementioned compensation on an individual basis for 2018 and 2017 as follows:

						2018	2017
	Base salary	Functional allowance		STA[1]	LTA[2]	Total compensation	Total compensation
in €			Group component	Individual component			
Christian Sewing	3,291,111	0	350,000	2,035,931	1,327,037	7,004,079	2,900,000
Garth Ritchie	3,000,000	3,000,000	350,000	1,120,000	1,148,003	8,618,003	3,250,000
Karl von Rohr	2,836,667	0	350,000	1,200,000	1,148,003	5,534,670	2,400,000
Stuart Lewis	2,400,000	1,200,000	350,000	1,000,000	1,148,003	6,098,003	2,700,000
Sylvie Matherat	2,400,000	0	350,000	640,000	1,148,003	4,538,003	2,400,000
James von Moltke[3]	2,400,000	0	350,000	1,200,000	1,148,003	5,098,003	1,200,000
Nicolas Moreau[4]	1,200,000	0	175,000	520,000	574,001	2,469,001	2,400,000
Werner Steinmüller	2,400,000	0	350,000	880,000	1,148,003	4,778,003	2,400,000
Frank Strauß[5]	2,400,000	0	350,000	1,669,600	1,148,003	5,567,603	800,000
John Cryan[6]	1,133,333	0	116,667	175,000	464,668	1,889,668	3,400,000
Kimberly Hammonds[7]	1,000,000	0	145,833	200,000	478,335	1,824,168	2,400,000
Dr. Marcus Schenck[8]	1,250,000	0	145,833	422,917	478,335	2,297,085	2,900,000
Jeffrey Urwin[9]	0	0	0	0	0	0	600,000
Total	**25,711,111**	**4,200,000**	**3,383,333**	**11,063,448**	**11,358,397**	**55,716,289**	29,750,000

[1] STA: Short-Term Award.
[2] LTA: Long-Term Award.
[3] Member since July 1, 2017.
[4] Member until December 31, 2018. In his position as managing director of DWS Management GmbH a total compensation of € 2,916,667 was determined for 2018.
[5] Member since September 1, 2017.
[6] Member until April 8, 2018.
[7] Member until May 24, 2018.
[8] Member until May 24, 2018.
[9] Member until March 31, 2017.

The table above does not include any compensation elements granted to a member of the Management Board as a replacement for components of compensation that have been forfeited at the previous employer. These are shown in the tables in accordance with the German Corporate Governance Code and DRS 17.

Share awards

The number of share awards granted to the members of the Management Board in the form of Restricted Equity Awards (REA) in 2019 for the 2018 financial year was calculated by dividing the respective amounts in Euro by the higher of both, the average Xetra closing price of the Deutsche Bank share during the last ten trading days in February 2019 or the Xetra closing price on March 1, 2019 (€ 8.173). No share awards had been granted in the previous year due to the Management Board members waiving the determination and grant of variable compensation.

Management Board members do not receive any compensation for mandates on boards of Deutsche Bank subsidiaries.

Members of the Management Board

Units	Year	Restricted Equity Award(s) (deferred with additional retention period)
Christian Sewing	2018	340,722
	2017	0
Garth Ritchie	2018	240,242
	2017	0
Karl von Rohr	2018	247,583
	2017	0
Stuart Lewis	2018	229,230
	2017	0
Sylvie Matherat	2018	196,195
	2017	0
James von Moltke[1]	2018	247,583
	2017	0
Nicolas Moreau[2]	2018	116,450
	2017	0
Werner Steinmüller	2018	218,218
	2017	0
Frank Strauß[3]	2018	290,676
	2017	0
John Cryan[4]	2018	69,405
	2017	0
Kimberly Hammonds[5]	2018	75,630
	2017	0
Dr. Marcus Schenck[6]	2018	96,086
	2017	0

[1] Member since July 1, 2017. The benefits granted to Mr. von Moltke in 2017 as a substitute for forfeited awards and not granted variable compensation from his previous employer are not displayed here.
[2] Member until December 31, 2018.
[3] Member since September 1, 2017.
[4] Member until April 8, 2018.
[5] Member until May 24, 2018.
[6] Member until May 24, 2018.

Management Board Share Ownership, Shareholding Guidelines

As of February 15, 2019 and February 16, 2018, respectively, the current members of the Management Board held Deutsche Bank shares as presented below:

Members of the Management Board		Number of shares
Christian Sewing	2019	73,237
	2018	54,356
Garth Ritchie	2019	84,738
	2018	43,227
Karl von Rohr	2019	5,601
	2018	5,601
Frank Kuhnke[1]	2019	7,094
Stuart Lewis	2019	103,561
	2018	88,292
Sylvie Matherat	2019	0
	2018	0
James von Moltke[2]	2019	24,967
	2018	0
Werner Steinmüller	2019	146,905
	2018	119,688
Frank Strauß[3]	2019	10,772
	2018	7,172
Total	**2019**	**456,875**
	2018	318,336

[1] Member since January 1, 2019.
[2] Member since July 1, 2017.
[3] Member since September 1, 2017.

The current members of the Management Board held an aggregate of 456,875 Deutsche Bank shares on February 15, 2019, amounting to approximately 0.02 % of Deutsche Bank shares issued on that date.

The following table shows the number of share awards held by the Management Board members as of February 16, 2018 and February 15, 2019 as well as the number of share awards newly granted, delivered or forfeited in this period.

Members of the Management Board	Balance as of Feb 16, 2018	Granted	Delivered	Forfeited	Balance as of Feb 15, 2019
Christian Sewing	96,821	684	35,824	0	61,681
Garth Ritchie	618,736	2,242	76,424	0	544,554
Karl von Rohr	49,206	551	0	0	49,757
Frank Kuhnke[1]	–	–	–	–	104,507
Stuart Lewis	160,498	1,474	28,916	0	133,056
Sylvie Matherat	12,181	137	0	0	12,318
James von Moltke[2]	194,142	0	47,535	0	146,607
Werner Steinmüller	220,821	1,894	51,836	0	170,878
Frank Strauß[3]	46,983	20,019	6,857	0	60,144

[1] Member since January 1, 2019.
[2] Member since July 1, 2017.
[3] Member since September 1, 2017.

One Management Board member did not fulfill the retention obligation as of December 31, or else was unable to meet this obligation in time for that date, due to purchasing restrictions. At the time of this report, however, the obligation has been fulfilled. The remaining Management Board members fulfilled the retention obligations for shares in 2018 or are currently in the waiting period.

Pension Benefits

The following table shows the annual contributions, the interest credits, the account balances and the annual service costs for the years 2018 and 2017 as well as the corresponding defined benefit obligations for each member of the Management Board in office in 2018 as of December 31, 2018 and December 31, 2017. The different balances are attributable to the different lengths of service on the Management Board, the respective age-related factors, and the different contribution rates, as well as the individual pensionable compensation amounts and the previously mentioned additional individual entitlements.

Members of the Management Board	Annual contribution, in the year		Interest credit, in the year		Account balance, end of year		Service cost (IFRS), in the year		Present value of the defined benefit obligation (IFRS), end of year	
in €	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017
Christian Sewing	1,007,500	1,046,500	0	0	3,831,500	2,824,000	879,750	899,307	3,366,182	2,450,830
Garth Ritchie	1,440,000	1,500,000	0	0	4,490,000	3,050,000	1,274,429	1,306,915	4,026,939	2,704,127
Karl von Rohr	845,000	871,000	0	0	2,368,001	1,523,001	796,009	807,465	2,249,165	1,434,564
Stuart Lewis	845,000	871,000	0	0	4,058,938	3,213,938	796,009	807,465	4,236,867	3,377,866
Sylvie Matherat	754,000	786,500	0	0	2,127,168	1,373,168	755,261	774,917	2,125,681	1,354,995
James von Moltke[1]	975,000	503,750	0	0	1,478,750	503,750	864,990	451,453	1,334,670	463,619
Nicolas Moreau[2]	0	1,340,000	0	0	0[7]	1,687,500	607,093	1,232,878	0	1,591,229
Werner Steinmüller	650,000	650,000	32,934	6,667	1,506,268	823,334	688,942	701,617	1,542,860	907,793
Frank Strauß[3]	1,007,500	348,834	0	0	1,356,334	348,834	876,266	313,391	1,202,739	321,839
John Cryan[4]	0	728,000	0	0	0[8]	1,875,250	733,807	748,829	0	1,916,940
Kimberly Hammonds[5]	0	936,000	0	0	0[9]	1,186,001	825,100	842,110	0	1,091,041
Dr. Marcus Schenck[6]	541,668	1,105,000	0	0	2,731,169	2,189,501	504,568	1,018,267	2,553,842	2,051,090

[1] Member since July 1, 2017.
[2] Member until December 31, 2018. In his position as managing director of DWS Management GmbH a service cost amount of € 607,093 was determined for 2018.
[3] Member since September 1, 2017.
[4] Member until April 8, 2018.
[5] Member until May 24, 2018.
[6] Member until May 24, 2018.
[7] The pension entitlement was not vested at the time of the termination of the Management Board membership and was paid in form of a cash compensation in the amount of € 2,084,667 and in the amount of € 579,694 for the DWS Management GmbH.
[8] The pension entitlement was not vested at the time of the termination of the Management Board membership and was paid in form of a cash compensation in the amount of € 3,420,961.
[9] The pension entitlement was not vested at the time of the termination of the Management Board membership and was paid in form of a cash compensation in the amount of € 2,231,933.

Other Benefits upon Early Termination

In 2018, the Management Board members John Cryan, Kimberly Hammonds, Marcus Schenck and Nicolas Moreau left the Management Board. Termination payments to which they were entitled based on their employment contract were agreed with these members as follows:

John Cryan left the Management Board with effect from the end of April 8, 2018. On the basis of the termination agreement, compensation payments for a post-contractual restraint on competition already agreed in the employment contract in the amount of € 2,210,000 and a severance payment in the amount of € 8,674,000 were agreed. Of the severance, the first instalment in the amount of € 1,071,800 was disbursed in cash in May 2018. The second instalment in the amount of € 1,071,800 was granted in shares and becomes due for disbursement on April 30, 2019. A further instalment in the amount of € 3,265,200 was granted in the form of deferred cash compensation with a settlement period ending April 30, 2023. A final instalment in the amount of € 3,265,200 was granted in the form of deferred share-based compensation with a settlement period ending April 30, 2024. All contractually agreed provisions with respect to variable compensation elements apply accordingly to the severance payment, including the option to reclaim any variable compensation (clawback), and the severance payment is subject to a regulation for the offsetting of income received from other sources.

Kimberly Hammonds left the Management Board with effect from the end of May 24, 2018. On the basis of the termination agreement, compensation payments for a post-contractual restraint on competition already agreed in the employment contract in the amount of € 1,560,000 and a severance payment in the amount of € 3,303,834 were agreed. Of the severance, the first instalment in the amount of € 192,767 was disbursed in cash in May 2018. A second instalment in the amount of € 192,767 was granted in the form of shares and becomes due for disbursement on May 31, 2019. A further instalment in the amount of € 1,459,150 was granted in the form of deferred cash compensation with a settlement period ending May 31, 2023. A final instalment in the amount of € 1,459,150 was granted in the form of deferred share-based compensation with a settlement period ending May 31, 2024. All contractually agreed provisions with respect to variable compensation elements apply accordingly to the severance payment, including the option to reclaim any variable compensation (clawback), and the severance payment is subject to a regulation for the offsetting of income received from other sources. The contractually, but not legally vested present value of the pension account in the company pension plan at the time of Mrs. Hammond's termination of the Management Board membership has been disbursed to her.

Marcus Schenck left the Management Board with effect from the end of May 24, 2018. On the basis of the termination agreement, compensation payments for a post-contractual restraint on competition were agreed in the aggregate amount of € 1,950,000, payable in 12 monthly instalments. Marcus Schenck informed the bank that he has taken up a new position as of February 1, 2019. Therefore, the payments ceased from this date onwards. No further severance payment was agreed.

Nicolas Moreau left the Management Board with effect from the end of December 31, 2018. On the basis of the termination agreement, compensation payments for a post-contractual restraint on competition agreed in the employment contract in the amount of € 960,000 and a severance payment in the amount of € 807,600 were agreed. Of the severance, the first instalment in the amount of € 403,800 was granted in the form of deferred cash compensation with a settlement period ending March 1, 2024. A second instalment in the amount of € 403,800 was granted as share-based compensation with a settlement period ending March 1, 2025. All contractually agreed provisions with respect to variable compensation elements apply accordingly to the severance payment, including the option to reclaim any variable compensation (clawback). Furthermore, the termination of the employment relationship between DWS Management GmbH and Nicolas Moreau as managing director of the GmbH was agreed. Based on this termination agreement, a severance payment in the amount of € 7,000,000 was agreed. The first instalment in the amount of € 1,400,000 was disbursed in cash in December 2018. The second instalment in the same amount was granted in shares and becomes due for disbursement on March 1, 2020. A further instalment in the amount of € 2,100,000 was granted in the form of deferred cash compensation with a settlement period ending March 1, 2024. A final instalment in the amount of € 2,100,000 was granted in the form of deferred share-based compensation with a settlement period ending March 1, 2025.

Expense for Long-Term Incentive Components

The following table presents the compensation expense recognized in the respective years for long-term incentive components of compensation granted for service on the Management Board.

Members of the Management Board	Amount expensed for			
	Share-based compensation components		Cash-based compensation components	
in €	2018	2017	2018	2017
James von Moltke[1]	225,845	0	630,407	671,148
Stuart Lewis	(393,743)[2]	955,633	57,414	230,974

[1] Member since July 1 2017.
[2] Share-based compensation of Management Board members is generally valued based on the share price at each respective reporting date and leads to a negative result in this instance.

Compensation in accordance with the German Corporate Governance Code (GCGC)

The compensation for the members of the Management Board in accordance with the requirements of section 4.2.5 paragraph 3 of the GCGC is provided below. This comprises the benefits granted for the year under review including the fringe benefits and including the maximum and minimum achievable compensation for variable compensation components. In addition, the disbursals of fixed compensation and variable compensation (broken down by Restricted Incentive Awards and Restricted Equity Awards) in/for the year under review, broken down into the relevant reference years are reported.

The following table provides the compensation granted for the 2018 and 2017 financial years according to GCGC:

					Christian Sewing	
				2018		2017
in €	Determined	Target	Min	Max	Determined	Target
Fixed compensation (base salary)	3,291,111	3,291,111	3,291,111	3,291,111	2,900,000	2,900,000
Functional allowance	0	0	0	0	0	0
Fringe benefits (fixed compensation)	91,805	91,805	91,805	91,805	80,307	80,307
Total	**3,382,916**	**3,382,916**	**3,382,916**	**3,382,916**	2,980,307	2,980,307
Variable compensation	3,712,968	5,055,000	0	8,491,667	0	4,400,000
thereof:						
Restricted Incentive Awards	928,242	1,818,333	0	3,636,666	0	1,600,000
Restricted Equity Awards	2,784,726	3,236,667	0	4,855,001	0	2,800,000
Fringe benefits (variable compensation)	0	0	0	0	0	0
Total	**3,712,968**	**5,055,000**	**0**	**8,491,667**	0	4,400,000
Pension service costs	879,750	879,750	879,750	879,750	899,307	899,307
Total compensation (GCGC)	**7,975,634**	**9,317,666**	**4,262,666**	**12,754,333**	3,879,614	8,279,614
Total compensation[1]	**7,004,079**	**8,346,111**	**3,291,111**	**11,782,778**	2,900,000	7,300,000

[1] Without fringe benefits and pension service costs.

					Garth Ritchie	
				2018		2017
in €	Determined	Target	Min	Max	Determined	Target
Fixed compensation (base salary)	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000
Functional allowance	3,000,000	3,000,000	3,000,000	3,000,000	250,000	250,000
Fringe benefits (fixed compensation)	189,609	189,609	189,609	189,609	269,457	269,457
Total	**6,189,609**	**6,189,609**	**6,189,609**	**6,189,609**	3,519,457	3,519,457
Variable compensation	2,618,003	4,700,000	0	8,000,000	0	4,700,000
thereof:						
Restricted Incentive Awards	654,500	1,900,000	0	3,800,000	0	1,900,000
Restricted Equity Awards	1,963,503	2,800,000	0	4,200,000	0	2,800,000
Fringe benefits (variable compensation)	0	0	0	0	0	0
Total	**2,618,003**	**4,700,000**	**0**	**8,000,000**	0	4,700,000
Pension service costs	1,274,429	1,274,429	1,274,429	1,274,429	1,306,915	1,306,915
Total compensation (GCGC)	**10,082,041**	**12,164,038**	**7,464,038**	**15,464,038**	4,826,372	9,526,372
Total compensation[1]	**8,618,003**	**10,700,000**	**6,000,000**	**14,000,000**	3,250,000	7,950,000

[1] Without fringe benefits and pension service costs.

					Karl von Rohr	
				2018		2017
in €	Determined	Target	Min	Max	Determined	Target
Fixed compensation (base salary)	2,836,667	2,836,667	2,836,667	2,836,667	2,400,000	2,400,000
Fringe benefits (fixed compensation)	49,853	49,853	49,853	49,853	23,642	23,642
Total	**2,886,520**	**2,886,520**	**2,886,520**	**2,886,520**	2,423,642	2,423,642
Variable compensation	2,698,003	4,100,000	0	6,800,000	0	4,100,000
thereof:						
Restricted Incentive Awards	674,500	1,300,000	0	2,600,000	0	1,300,000
Restricted Equity Awards	2,023,503	2,800,000	0	4,200,000	0	2,800,000
Fringe benefits (variable compensation)	0	0	0	0	0	0
Total	**2,698,003**	**4,100,000**	**0**	**6,800,000**	0	4,100,000
Pension service costs	796,009	796,009	796,009	796,009	807,465	807,465
Total compensation (GCGC)	**6,380,532**	**7,782,529**	**3,682,529**	**10,482,529**	3,231,107	7,331,107
Total compensation[1]	**5,534,670**	**6,936,667**	**2,836,667**	**9,636,667**	2,400,000	6,500,000

[1] Without fringe benefits and pension service costs.

	Stuart Lewis					
	2018				2017	
in €	Determined	Target	Min	Max	Determined	Target
Fixed compensation (base salary)	2,400,000	2,400,000	2,400,000	2,400,000	2,400,000	2,400,000
Functional allowance	1,200,000	1,200,000	1,200,000	1,200,000	300,000	300,000
Fringe benefits (fixed compensation)	184,423	184,423	184,423	184,423	206,628	206,628
Total	**3,784,423**	**3,784,423**	**3,784,423**	**3,784,423**	2,906,628	2,906,628
Variable compensation	2,498,003	4,100,000	0	6,800,000	0	4,100,000
thereof:						
Restricted Incentive Awards	624,500	1,300,000	0	2,600,000	0	1,300,000
Restricted Equity Awards	1,873,503	2,800,000	0	4,200,000	0	2,800,000
Fringe benefits (variable compensation)	0	0	0	0	0	0
Total	**2,498,003**	**4,100,000**	**0**	**6,800,000**	0	4,100,000
Pension service costs	796,009	796,009	796,009	796,009	807,465	807,465
Total compensation (GCGC)	**7,078,435**	**8,680,432**	**4,580,432**	**11,380,432**	3,714,093	7,814,093
Total compensation[1]	**6,098,003**	**7,700,000**	**3,600,000**	**10,400,000**	2,700,000	6,800,000

[1] Without fringe benefits and pension service costs.

	Sylvie Matherat					
	2018				2017	
in €	Determined	Target	Min	Max	Determined	Target
Fixed compensation (base salary)	2,400,000	2,400,000	2,400,000	2,400,000	2,400,000	2,400,000
Fringe benefits (fixed compensation)	6,392	6,392	6,392	6,392	16,338	16,338
Total	**2,406,392**	**2,406,392**	**2,406,392**	**2,406,392**	2,416,338	2,416,338
Variable compensation	2,138,003	4,100,000	0	6,800,000	0	4,100,000
thereof:						
Restricted Incentive Awards	534,500	1,300,000	0	2,600,000	0	1,300,000
Restricted Equity Awards	1,603,503	2,800,000	0	4,200,000	0	2,800,000
Fringe benefits (variable compensation)	0	0	0	0	0	0
Total	**2,138,003**	**4,100,000**	**0**	**6,800,000**	0	4,100,000
Pension service costs	755,261	755,261	755,261	755,261	774,917	774,917
Total compensation (GCGC)	**5,299,656**	**7,261,653**	**3,161,653**	**9,961,653**	3,191,255	7,291,255
Total compensation[1]	**4,538,003**	**6,500,000**	**2,400,000**	**9,200,000**	2,400,000	6,500,000

[1] Without fringe benefits and pension service costs.

	James von Moltke[1]					
	2018				2017	
in €	Determined	Target	Min	Max	Determined	Target
Fixed compensation (base salary)	2,400,000	2,400,000	2,400,000	2,400,000	1,200,000	1,200,000
Fringe benefits (fixed compensation)	86,975	86,975	86,975	86,975	35,261	35,261
Total	**2,486,975**	**2,486,975**	**2,486,975**	**2,486,975**	1,235,261	1,235,261
Variable compensation	2,698,003	4,100,000	0	6,800,000	4,858,442[2]	2,050,000
thereof:						
Cash	0	0	0	0	355,404	0
Restricted Incentive Awards	674,500	1,300,000	0	2,600,000	1,600,227	650,000
Equity Upfront Awards	0	0	0	0	355,404	1,400,000
Restricted Equity Awards	2,023,503	2,800,000	0	4,200,000	2,547,407	0
Fringe benefits (variable compensation)	615,516	615,516	615,516	615,516	438,038	438,038
Total	**3,313,519**	**4,715,516**	**615,516**	**7,415,516**	5,296,480	2,488,038
Pension service costs	864,990	864,990	864,990	864,990	451,453	451,453
Total compensation (GCGC)	**6,665,484**	**8,067,481**	**3,967,481**	**10,767,481**	6,983,194	4,174,752
Total compensation[3]	**5,098,003**	**6,500,000**	**2,400,000**	**9,200,000**	6,058,442	3,250,000

[1] Member since July 1, 2017.
[2] The benefits granted to Mr. von Moltke as a substitute for forfeited awards and not granted variable compensation from his previous employer are displayed under “Variable Compensation”.
[3] Without fringe benefits and pension service costs.

	Nicolas Moreau[1]					
	2018				2017	
in €	Determined	Target	Min	Max	Determined	Target
Fixed compensation (base salary)	1,200,000	1,200,000	1,200,000	1,200,000	2,400,000	2,400,000
Fringe benefits (fixed compensation)	129,407	129,407	129,407	129,407	59,383	59,383
Total	**1,329,407**	**1,329,407**	**1,329,407**	**1,329,407**	2,459,383	2,459,383
Variable compensation	1,269,001	2,300,000	0	3,900,000	0	4,600,000
thereof:						
Restricted Incentive Awards	317,250	900,000	0	1,800,000	0	1,800,000
Restricted Equity Awards	951,751	1,400,000	0	2,100,000	0	2,800,000
Fringe benefits (variable compensation)	0	0	0	0	0	0
Total	**1,269,001**	**2,300,000**	**0**	**3,900,000**	0	4,600,000
Pension service costs	607,093	607,093	607,093	607,093	1,232,878	1,232,878
Total compensation (GCGC)	**3,205,501**	**4,236,500**	**1,936,500**	**5,836,500**	3,692,261	8,292,261
Total compensation[2]	**2,469,001**	**3,500,000**	**1,200,000**	**5,100,000**	2,400,000	7,000,000

[1] Member until December 31, 2018. In his position as managing director of DWS Management GmbH a total compensation (GCGC) of € 3,523,792 was determined for 2018.
[2] Without fringe benefits and pension service costs.

	Werner Steinmüller					
	2018				2017	
in €	Determined	Target	Min	Max	Determined	Target
Fixed compensation (base salary)	2,400,000	2,400,000	2,400,000	2,400,000	2,400,000	2,400,000
Fringe benefits (fixed compensation)	76,993	76,993	76,993	76,993	82,934	82,934
Total	**2,476,993**	**2,476,993**	**2,476,993**	**2,476,993**	2,482,934	2,482,934
Variable compensation	2,378,003	4,100,000	0	6,800,000	0	4,100,000
thereof:						
Restricted Incentive Awards	594,500	1,300,000	0	2,600,000	0	1,300,000
Restricted Equity Awards	1,783,503	2,800,000	0	4,200,000	0	2,800,000
Fringe benefits (variable compensation)	387,196	387,196	387,196	387,196	316,490	316,490
Total	**2,765,199**	**4,487,196**	**387,196**	**7,187,196**	316,490	4,416,490
Pension service costs	688,942	688,942	688,942	688,942	701,617	701,617
Total compensation (GCGC)	**5,931,134**	**7,653,131**	**3,553,131**	**10,353,131**	3,501,041	7,601,041
Total compensation[1]	**4,778,003**	**6,500,000**	**2,400,000**	**9,200,000**	2,400,000	6,500,000

[1] Without fringe benefits and pension service costs.

	Frank Strauß[1]					
	2018				2017	
in €	Determined	Target	Min	Max	Determined	Target
Fixed compensation (base salary)	2,400,000	2,400,000	2,400,000	2,400,000	800,000	800,000
Fringe benefits (fixed compensation)	71,892	71,892	71,892	71,892	26,893	26,893
Total	**2,471,892**	**2,471,892**	**2,471,892**	**2,471,892**	826,893	826,893
Variable compensation	3,167,603	4,400,000	0	7,400,000	0	1,466,667
thereof:						
Restricted Incentive Awards	791,900	1,600,000	0	3,200,000	0	533,333
Restricted Equity Awards	2,375,703	2,800,000	0	4,200,000	0	933,333
Fringe benefits (variable compensation)	0	0	0	0	0	0
Total	**3,167,603**	**4,400,000**	**0**	**7,400,000**	0	1,466,667
Pension service costs	876,266	876,266	876,266	876,266	313,391	313,391
Total compensation (GCGC)	**6,515,761**	**7,748,158**	**3,348,158**	**10,748,158**	1,140,284	2,606,951
Total compensation[2]	**5,567,603**	**6,800,000**	**2,400,000**	**9,800,000**	800,000	2,266,667

[1] Member since September 1, 2017.
[2] Without fringe benefits and pension service costs.

	John Cryan[1]					
	2018				2017	
in €	Determined	Target	Min	Max	Determined	Target
Fixed compensation (base salary)	1,133,333	1,133,333	1,133,333	1,133,333	3,400,000	3,400,000
Fringe benefits (fixed compensation)	10,125	10,125	10,125	10,125	220,982	220,982
Total	**1,143,458**	**1,143,458**	**1,143,458**	**1,143,458**	3,620,982	3,620,982
Variable compensation	756,335	1,766,666	0	2,966,666	0	5,300,000
thereof:						
Restricted Incentive Awards	189,083	633,333	0	1,266,666	0	1,900,000
Restricted Equity Awards	567,252	1,133,333	0	1,700,000	0	3,400,000
Fringe benefits (variable compensation)	0	0	0	0	0	0
Total	**756,335**	**1,766,666**	**0**	**2,966,666**	0	5,300,000
Pension service costs	733,807	733,807	733,807	733,807	748,829	748,829
Total compensation (GCGC)	**2,633,600**	**3,643,931**	**1,877,265**	**4,843,931**	4,369,811	9,669,811
Total compensation[2]	**1,889,668**	**2,899,999**	**1,133,333**	**4,099,999**	3,400,000	8,700,000

[1] Member until April 8, 2018.
[2] Without fringe benefits and pension service costs.

	Kimberly Hammonds[1]					
	2018				2017	
in €	Determined	Target	Min	Max	Determined	Target
Fixed compensation (base salary)	1,000,000	1,000,000	1,000,000	1,000,000	2,400,000	2,400,000
Fringe benefits (fixed compensation)	209,799	209,799	209,799	209,799	260,489	260,489
Total	**1,209,799**	**1,209,799**	**1,209,799**	**1,209,799**	2,660,489	2,660,489
Variable compensation	824,168	1,708,334	0	2,833,335	0	4,100,000
thereof:						
Restricted Incentive Awards	206,042	541,667	0	1,083,334	0	1,300,000
Restricted Equity Awards	618,126	1,166,667	0	1,750,001	0	2,800,000
Fringe benefits (variable compensation)	0	0	0	0	0	0
Total	**824,168**	**1,708,334**	**0**	**2,833,335**	0	4,100,000
Pension service costs	825,100	825,100	825,100	825,100	842,110	842,110
Total compensation (GCGC)	**2,859,067**	**3,743,233**	**2,034,899**	**4,868,234**	3,502,599	7,602,599
Total compensation[2]	**1,824,168**	**2,708,334**	**1,000,000**	**3,833,335**	2,400,000	6,500,000

[1] Member until May 24, 2018.
[2] Without fringe benefits and pension service costs.

	Dr. Marcus Schenck[1]					
	2018				2017	
in €	Determined	Target	Min	Max	Determined	Target
Fixed compensation (base salary)	1,250,000	1,250,000	1,250,000	1,250,000	2,900,000	2,900,000
Fringe benefits (fixed compensation)	13,117	13,117	13,117	13,117	16,148	16,148
Total	**1,263,117**	**1,263,117**	**1,263,117**	**1,263,117**	2,916,148	2,916,148
Variable compensation	1,047,085	1,958,334	0	3,333,335	0	4,400,000
thereof:						
Restricted Incentive Awards	261,771	791,667	0	1,583,334	0	1,600,000
Restricted Equity Awards	785,314	1,166,667	0	1,750,001	0	2,800,000
Fringe benefits (variable compensation)	0	0	0	0	0	0
Total	**1,047,085**	**1,958,334**	**0**	**3,333,335**	0	4,400,000
Pension service costs	504,568	504,568	504,568	504,568	1,018,267	1,018,267
Total compensation (GCGC)	**2,814,770**	**3,726,019**	**1,767,685**	**5,101,020**	3,934,415	8,334,415
Total compensation[2]	**2,297,085**	**3,208,334**	**1,250,000**	**4,583,335**	2,900,000	7,300,000

[1] Member until May 24, 2018.
[2] Without fringe benefits and pension service costs.

	Jeffrey Urwin[1]					
	2018				2017	
in €	Determined	Target	Min	Max	Determined	Target
Fixed compensation (base salary)	0	0	0	0	600,000	600,000
Fringe benefits (fixed compensation)	0	0	0	0	530	530
Total	**0**	**0**	**0**	**0**	600,530	600,530
Variable compensation	0	0	0	0	0	0
thereof:						
Restricted Incentive Awards	0	0	0	0	0	0
Restricted Equity Awards	0	0	0	0	0	0
Fringe benefits (variable compensation)	0	0	0	0	0	0
Total	**0**	**0**	**0**	**0**	0	0
Pension service costs	0	0	0	0	557,370	557,370
Total compensation (GCGC)	**0**	**0**	**0**	**0**	1,157,900	1,157,900
Total compensation[2]	**0**	**0**	**0**	**0**	600,000	600,000

[1] Member until March 31, 2017.
[2] Without fringe benefits and pension service costs.

The following table provides the compensation disbursals in/for the 2018 and 2017 financial years according to GCGC

	Christian Sewing		Garth Ritchie		Karl von Rohr		Stuart Lewis	
in €	2018	2017	2018	2017	2018	2017	2018	2017
Fixed compensation	3,291,111	2,900,000	3,000,000	3,000,000	2,836,667	2,400,000	2,400,000	2,400,000
Functional allowance	0	0	3,000,000	250,000	0	0	1,200,000	300,000
Fringe benefits (fixed compensation)	91,805	80,307	189,609	269,457	49,853	23,642	184,423	206,628
Total	**3,382,916**	2,980,307	**6,189,609**	3,519,457	**2,886,520**	2,423,642	**3,784,423**	2,906,628
Variable compensation	0	0	0	0	0	0	431,973	999,285
thereof Cash:	0	0	0	0	0	0	0	0
thereof Restricted Incentive Awards:								
2013 Restricted Incentive Award for 2012	0	0	0	0	0	0	0	377,871
2014 Restricted Incentive Award for 2013	0	0	0	0	0	0	126,935	357,391
2015 Restricted Incentive Award for 2014	0	0	0	0	0	0	105,340	200,965
2017 Restricted Incentive Award: Buyout	0	0	0	0	0	0	0	0
thereof Equity Awards:								
2013 Equity Upfront Award for 2012	0	0	0	0	0	0	0	27,560
2014 Equity Upfront Award for 2013	0	0	0	0	0	0	0	35,498
2013 Restricted Equity Award for 2012	0	0	0	0	0	0	199,698	0
2017 Restricted Equity Award: Buyout	0	0	0	0	0	0	0	0
Fringe benefits (variable compensation)	0	0	0	0	0	0	0	0
Total	**0**	0	**0**	0	**0**	0	**431,973**	999,285
Pension service costs	879,750	899,307	1,274,429	1,306,915	796,009	807,465	796,009	807,465
Total compensation (GCGC)	**4,262,666**	3,879,614	**7,464,038**	4,826,372	**3,682,529**	3,231,107	**5,012,405**	4,713,378

	Sylvie Matherat		James von Moltke[1]		Nicolas Moreau[2]		Werner Steinmüller	
in €	2018	2017	2018	2017	2018	2017	2018	2017
Fixed compensation	2,400,000	2,400,000	2,400,000	1,200,000	1,200,000	2,400,000	2,400,000	2,400,000
Functional allowance	0	0	0	0	0	0	0	0
Fringe benefits (fixed compensation)	6,392	16,338	86,975	35,261	129,407	59,383	76,993	82,934
Total	**2,406,392**	2,416,338	**2,486,975**	1,235,261	**1,329,407**	2,459,383	**2,476,993**	2,482,934
Variable compensation	0	0	1,166,703	355,404	0	0	0	0
thereof Cash:	0	0	0	355,404	0	0	0	0
thereof Restricted Incentive Awards:								
2013 Restricted Incentive Award for 2012	0	0	0	0	0	0	0	0
2014 Restricted Incentive Award for 2013	0	0	0	0	0	0	0	0
2015 Restricted Incentive Award for 2014	0	0	0	0	0	0	0	0
2017 Restricted Incentive Award: Buyout	0	0	560,758	0	0	0	0	0
thereof Equity Awards:								
2013 Equity Upfront Award for 2012	0	0	0	0	0	0	0	0
2014 Equity Upfront Award for 2013	0	0	0	0	0	0	0	0
2013 Restricted Equity Award for 2012	0	0	0	0	0	0	0	0
2017 Restricted Equity Award: Buyout	0	0	605,945	0	0	0	0	0
Fringe benefits (variable compensation)	0	0	615,516	438,038	0	0	387,196	316,490
Total	**0**	0	**1,782,219**	793,442	**0**	0	**387,196**	316,490
Pension service costs	755,261	774,917	864,990	451,453	607,093	1,232,878	688,942	701,617
Total compensation (GCGC)	**3,161,653**	3,191,255	**5,134,184**	2,480,156	**1,936,500**	3,692,261	**3,553,131**	3,501,041

[1] Member since July 1, 2017. The benefits disbursed to Mr. von Moltke in 2017 as a substitute for forfeited awards and not granted variable compensation from his previous employer are displayed under "Variable Compensation".
[2] Member until December 31, 2018. In his position as managing director of DWS Management GmbH a total compensation of € 2,323,792 was paid in 2018.

	Frank Strauß[1]		John Cryan[2]		Kimberly Hammonds[3]		Dr. Marcus Schenck[4]	
in €	2018	2017	2018	2017	2018	2017	2018	2017
Fixed compensation	2,400,000	800,000	1,133,333	3,400,000	1,000,000	2,400,000	1,250,000	2,900,000
Functional allowance	0	0	0	0	0	0	0	0
Fringe benefits (fixed compensation)	71,892	26,893	10,125	220,982	209,799	260,489	13,117	16,148
Total	**2,471,892**	826,893	**1,143,458**	3,620,982	**1,209,799**	2,660,489	**1,263,117**	2,916,148
Variable compensation	0	0	0	0	0	0	0	0
thereof Cash:	0	0	0	0	0	0	0	0
thereof Restricted Incentive Awards:								
2013 Restricted Incentive Award for 2012	0	0	0	0	0	0	0	0
2014 Restricted Incentive Award for 2013	0	0	0	0	0	0	0	0
2015 Restricted Incentive Award for 2014	0	0	0	0	0	0	0	0
2017 Restricted Incentive Award: Buyout	0	0	0	0	0	0	0	0
thereof Equity Awards:								
2013 Equity Upfront Award for 2012	0	0	0	0	0	0	0	0
2014 Equity Upfront Award for 2013	0	0	0	0	0	0	0	0
2013 Restricted Equity Award for 2012	0	0	0	0	0	0	0	0
2017 Restricted Equity Award: Buyout	0	0	0	0	0	0	0	0
Fringe benefits (variable compensation)	0	0	0	0	0	0	0	0
Total	**0**	0	**0**	0	**0**	0	**0**	0
Pension service costs	876,266	313,391	733,807	748,829	825,100	842,110	504,568	1,018,267
Total compensation (GCGC)	**3,348,158**	1,140,284	**1,877,265**	4,369,811	**2,034,899**	3,502,599	**1,767,685**	3,934,415

[1] Member since September 1, 2017.
[2] Member until April 8, 2018.
[3] Member until May 24, 2018.
[4] Member until May 24, 2018.

	Jeffrey Urwin[1]	
in €	2018	2017
Fixed compensation	0	600,000
Functional allowance	0	0
Fringe benefits (fixed compensation)	0	530
Total	**0**	600,530
Variable compensation	0	0
thereof Cash:	0	0
thereof Restricted Incentive Awards:		
2013 Restricted Incentive Award for 2012	0	0
2014 Restricted Incentive Award for 2013	0	0
2015 Restricted Incentive Award for 2014	0	0
2017 Restricted Incentive Award: Buyout	0	0
thereof Equity Awards:		
2013 Equity Upfront Award for 2012	0	0
2014 Equity Upfront Award for 2013	0	0
2013 Restricted Equity Award for 2012	0	0
2017 Restricted Equity Award: Buyout	0	0
Fringe benefits (variable compensation)	0	0
Total	**0**	0
Pension service costs	0	557,370
Total compensation (GCGC)	**0**	1,157,900

[1] Member until March 31, 2017.

With respect to deferred awards scheduled to be delivered in the first quarter of 2019, the Supervisory Board has confirmed that the performance conditions relating to Group-wide IBIT for the financial year 2018 have been met.

Compensation in accordance with the German Accounting Standard No. 17 (GAS 17)

In accordance with the requirements of the GAS 17, the members of the Management Board collectively received in the 2018 financial year compensation totaling € 52,181,136 (2017: € 37,665,535). Of that, € 25,711,111 (2017: € 29,200,000) was for fixed compensation, € 4,200,000 (2017: € 550,000) for functional allowances, € 2,123,102 (2017: € 2,053,520) for fringe benefits and € 20,146,923 (2017: € 5,862,015) for performance-related components.

In accordance with German Accounting Standard No. 17, the Restricted Incentive Awards, as a deferred, non-equity-based compensation component subject to certain (forfeiture) conditions, must be recognized in the total compensation for the year of their payment (i.e. in the financial year in which the unconditional payment takes place) and not in the year they are originally granted. Based on this the Management Board members individually received the following compensation components for their service on the Management Board for or in the years 2018 and 2017, including the non-performance-related fringe benefits.

Compensation according to GAS 17

	Christian Sewing		Garth Ritchie		Karl von Rohr		Stuart Lewis	
in €	2018	2017	2018	2017	2018	2017	2018	2017
Compensation								
Performance-related components								
Without long-term incentives								
Immediately paid out	0	0	0	0	0	0	0	0
With short-term incentives								
Cash	0	0	0	0	0	0	0	0
With long-term incentives								
Cash-based								
Restricted Incentive Award(s) paid	0	0	0	0	0	0	232,275	936,228
Share-based								
Equity Upfront Award(s)	0	0	0	0	0	0	0	0
Restricted Equity Award(s)	2,784,726	0	1,963,503	0	2,023,503	0	1,873,503	0
Non-performance-related components								
Base salary	3,291,111	2,900,000	3,000,000	3,000,000	2,836,667	2,400,000	2,400,000	2,400,000
Functional allowance	0	0	3,000,000	250,000	0	0	1,200,000	300,000
Fringe benefits (fixed and variable compensation)	91,805	80,307	189,609	269,457	49,853	23,642	184,423	206,628
Total	**6,167,642**	2,980,307	**8,153,112**	3,519,457	**4,910,023**	2,423,642	**5,890,201**	3,842,856

	Sylvie Matherat		James von Moltke[1]		Nicolas Moreau[2]		Werner Steinmüller	
in €	2018	2017	2018	2017	2018	2017	2018	2017
Compensation								
Performance-related components								
With short-term incentives								
Cash	0	0	0	355,404	0	0	0	0
With long-term incentives								
Cash-based								
Restricted Incentive Award(s) paid	0	0	560,758	0	0	0	0	0
Share-based								
Equity Upfront Award(s)	0	0	0	355,404	0	0	0	0
Restricted Equity Award(s)	1,603,503	0	2,023,503	2,547,407	951,751	0	1,783,503	0
Non-performance-related components								
Base salary	2,400,000	2,400,000	2,400,000	1,200,000	1,200,000	2,400,000	2,400,000	2,400,000
Functional allowance	0	0	0	0	0	0	0	0
Fringe benefits (fixed and variable compensation)	6,392	16,338	702,491	473,299	129,407	59,383	464,189	399,424
Total	**4,009,895**	2,416,338	**5,686,752**	4,931,514	**2,281,158**	2,459,383	**4,647,692**	2,799,424

[1] Member since July 1, 2017.
[2] Member until December 31, 2018. In his position as managing director of DWS Management GmbH he received a total of € 2,466,699.

	Frank Strauß[1]		John Cryan[2]		Kimberly Hammonds[3]		Dr. Marcus Schenck[4]	
in €	2018	2017	2018	2017	2018	2017	2018	2017
Compensation								
Performance-related components								
With short-term incentives								
Cash	0	0	0	0	0	0	0	0
With long-term incentives								
Cash-based								
Restricted Incentive Award(s) paid	0	0	0	0	0	0	0	0
Share-based								
Equity Upfront Award(s)	0	0	0	0	0	0	0	0
Restricted Equity Award(s)	2,375,703	0	567,252	0	618,126	0	785,314	0
Non-performance-related components								
Base salary	2,400,000	800,000	1,133,333	3,400,000	1,000,000	2,400,000	1,250,000	2,900,000
Functional allowance	0	0	0	0	0	0	0	0
Fringe benefits (fixed and variable compensation)	71,892	26,893	10,125	220,982	209,799	260,489	13,117	16,148
Total	**4,847,595**	826,893	**1,710,710**	3,620,982	**1,827,925**	2,660,489	**2,048,431**	2,916,148

[1] Member since September 1, 2017.
[2] Member until April 8, 2018.
[3] Member until May 24, 2018.
[4] Member until May 24, 2018.

	Jeffrey Urwin[1]		Total	
in €	2018	2017	2018	2017
Compensation				
Performance-related components				
With short-term incentives				
Cash	0	0	0	355,404
With long-term incentives				
Cash-based				
Restricted Incentive Award(s) paid	0	0	793,033	2,603,800[2]
Share-based				
Equity Upfront Award(s)	0	0	0	355,404
Restricted Equity Award(s)	0	0	19,353,890	2,547,407
Non-performance-related components				
Base salary	0	600,000	25,711,111	29,200,000
Functional allowance	0	0	4,200,000	550,000
Fringe benefits (fixed and variable compensation)	0	530	2,123,102	2,053,520
Total	**0**	600,530	**52,181,136**	37,665,535[2]

[1] Member until March 31, 2017.
[2] The amount of € 1,667,572 for Mr. Fitschen reported in last year's annual report is included in total but no longer reported separately as he had already left the Management Board in the 2016 financial year.

With respect to deferred awards scheduled to be delivered in the first quarter of 2019, the Supervisory Board has confirmed that the performance conditions relating to Group-wide IBIT for the 2018 financial year have been met.

Employee Compensation Report

The content of the 2018 Employee Compensation Report is based on the qualitative and quantitative remuneration disclosure requirements outlined in Article 450 No. 1 (a) to (i) Capital Requirements Regulation (CRR) in conjunction with Section 16 of the Remuneration Ordinance for Institutions (*Institutsvergütungsverordnung* – InstVV).

This Compensation Report takes a consolidated view and covers all consolidated entities of the Deutsche Bank Group. In accordance with regulatory requirements, equivalent reports for 2018 are prepared for the following Significant Institutions within Deutsche Bank Group: Deutsche Bank Privat- und Firmenkundenbank AG, Germany; BHW Bausparkasse AG, Germany; Deutsche Bank Luxembourg S.A., Luxembourg; Deutsche Bank S.p.A., Italy; and Deutsche Bank Mutui S.p.A., Italy.

Regulatory Environment

Ensuring compliance with regulatory requirements is an overarching consideration in our Group Compensation Strategy. We strive to be at the forefront of implementing regulatory requirements with respect to compensation and will continue to work closely with our prudential supervisor, the European Central Bank (ECB), to be in compliance with all existing and new requirements.

As an EU-headquartered institution, Deutsche Bank is subject to the CRR and Capital Requirements Directive 4 (CRD 4) globally, as transposed into German national law in the German Banking Act and InstVV. We adopted the rules in its current version for all of Deutsche Bank's subsidiaries and branches world-wide to the extent required in accordance with Section 27 InstVV. As a Significant Institution within the meaning of InstVV, Deutsche Bank identifies all employees whose work is deemed to have a material impact on the overall risk profile (Material Risk Takers or MRTs) in accordance with criteria stipulated under the Commission Delegated Regulation (EU) No. 604/2014. MRTs are identified at a Group level and at the level of Significant Institutions.

Taking into account more specific sectorial legislation and in accordance with InstVV, some of Deutsche Bank's subsidiaries (in particular within the DWS Group) fall under the local transpositions of the Alternative Investments Fund Managers Directive (AIFMD) or the Undertakings for Collective Investments in Transferable Securities Directive (UCITS). We also identify Material Risk Takers in these subsidiaries. Identified employees are subject to the remuneration provisions outlined in the Guidelines on sound remuneration policies under AIFMD/UCITS published by the European Securities and Markets Authority (ESMA).

Deutsche Bank also takes into account the regulations targeted at employees who engage directly or indirectly with the bank's clients (for instance the local transpositions of the Markets in Financial Instruments Directive II – MiFID II). These provisions resulted in the implementation of a specific compensation policy, a review of compensation plans and the identification of employees deemed to be Relevant Persons to ensure that they act in the best interest of clients.

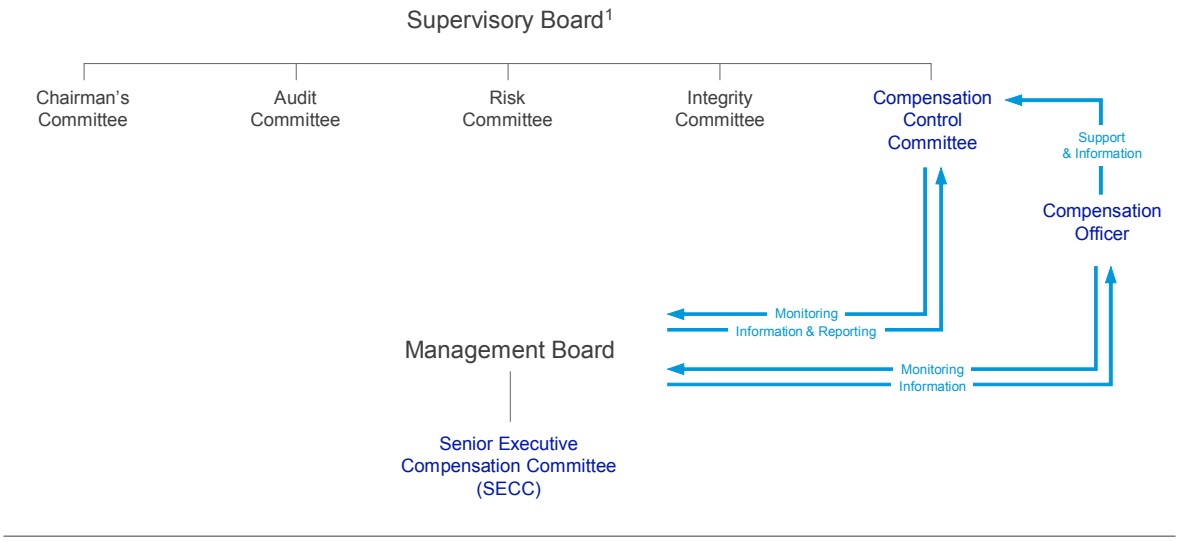
Where applicable, Deutsche Bank is also subject to specific rules and regulations implemented by local regulators. Many of these requirements are aligned with the InstVV. However, where variations are apparent, proactive and open discussions with regulators have enabled us to follow the local regulations whilst ensuring any impacted employees or locations remain within the bank's overall Group Compensation Framework. This includes, for example, the identification of Covered Employees in the United States under the requirements of the Federal Reserve Board. In any case, we apply the InstVV requirements as minimum standards globally.

Compensation Governance

Deutsche Bank has a robust governance structure enabling it to operate within the clear parameters of the Compensation Strategy and the Compensation Policies. In accordance with the German two-tier board structure, the Supervisory Board governs the compensation of the Management Board members while the Management Board oversees compensation matters for all other employees in the Group. Both the Supervisory Board and the Management Board are supported by specific committees and functions, in particular the Compensation Control Committee (CCC) and the Senior Executive Compensation Committee (SECC), respectively.

In line with their responsibilities, the bank's control functions are involved in the design and application of the bank's remuneration systems, in the identification of MRTs and in determining the total amount of VC. This includes assessing the impact of employees' behavior and the business-related risks, performance criteria, granting of remuneration and severances as well as ex-post risk adjustments.

Reward Governance structure



[1] Does not comprise a complete list of Supervisory Board Committees.

Compensation Control Committee (CCC)

The Supervisory Board has setup the CCC to support in establishing and monitoring the structure of the compensation system for the Management Board Members of Deutsche Bank AG, considering, in particular, the effects on the risks and risk management in accordance with the InstVV. Furthermore, the CCC monitors the appropriateness of the compensation system for the employees of Deutsche Bank Group, as established by the Management Board and the SECC. The CCC checks regularly whether the total amount of variable compensation is affordable and set in accordance with the InstVV. The CCC also assesses the impact of the compensation systems on the management of risk, capital and liquidity and seeks to ensure that the compensation systems are aligned to the business and risk strategies. Furthermore, the CCC supports the Supervisory Board in monitoring the MRT identification process and whether the internal control functions and the other relevant areas are properly involved in the structuring of the compensation systems.

The CCC consists of the Chairperson of the Supervisory Board and three further Supervisory Board Members, two of which are employee representatives. The Committee held five meetings in the calendar year 2018. In November, the members of the Risk Committee attended the Compensation Control Committee meeting as guests.

Compensation Officer

The Management Board, in cooperation with the CCC, has appointed a Group Compensation Officer to support the Supervisory Boards of Deutsche Bank AG and of the bank's Significant Institutions in Germany in performing their compensation related duties. The Compensation Officer is involved in the conceptual review, development, monitoring and the application of the employees' compensation systems on an ongoing basis. The Compensation Officer performs his monitoring obligations independently and provides an assessment on the appropriateness of design and practices of the compensation systems for employees at least annually. He supports and advises the CCC regularly.

Senior Executive Compensation Committee (SECC)

The SECC is a delegated committee established by the Management Board which has the mandate to develop sustainable compensation principles, to prepare recommendations on Total Compensation levels and to ensure appropriate compensation governance and oversight. The SECC establishes the Group Compensation Strategy and Compensation Policy. The SECC also utilizes quantitative and qualitative factors to assess Group and divisional performance as a basis for compensation decisions and makes recommendations to the Management Board regarding the total amount of annual variable compensation and its allocation across business divisions and infrastructure functions.

In order to maintain its independence, only representatives from infrastructure and control functions who are not aligned to any of the business divisions are members of the SECC. In 2018, the SECC's membership comprised of the Chief Administration Officer and the Chief Financial Officer as Co-Chairpersons, as well as the Chief Risk Officer (all of whom are Management Board Members), the Global Head of Human Resources as well as an additional representative from both Finance and Risk as voting members. The Compensation Officer, the Deputy Compensation Officer and one of the Global Co-Heads of HR Performance & Reward were nonvoting members. The SECC generally meets on a monthly basis and it had 21 meetings with regard to the compensation process for performance year 2018.

Compensation Strategy

Deutsche Bank recognizes that its compensation system plays a vital role in supporting its strategic objectives. It enables us to attract and retain the individuals required to achieve our bank's objectives. The Group Compensation Strategy is aligned to Deutsche Bank's business strategy, risk strategy, and to its corporate values and beliefs.

Five key objectives of our compensation practices

- To support the delivery of the bank's client-focused, global bank strategy by attracting and retaining talent across its full range of diverse business models and country locations
- To support the long-term, sustainable performance and development of the bank and a corresponding risk strategy
- To promote and support long-term performance based on cost discipline and efficiency
- To ensure that the bank's compensation practices are safe, by way of risk-adjusting performance outcomes, preventing inappropriate risk taking, ensuring sustained compatibility with capital and liquidity planning, and complying with regulation
- To apply and promote the bank's corporate values of integrity, sustainable performance, client centricity, innovation, discipline and partnership

Core remuneration principles

- Align compensation to shareholder interests and sustained bank-wide profitability, taking account of risk
- Maximize sustainable performance, both at the employee and the bank-wide level
- Attract and retain the best talent
- Calibrate compensation to reflect different divisions and levels of responsibility
- Apply a simple and transparent compensation design
- Ensure compliance with regulatory requirements

The Group Compensation Policy informs our employees about the implementation of the Compensation Strategy, governance processes as well as compensation structures and practices. All relevant documents are available to employees via our intranet site.

Group Compensation Framework

Our compensation framework emphasizes an appropriate balance between Fixed Pay (FP) and Variable Compensation (VC) – together Total Compensation (TC). It aligns incentives for sustainable performance at all levels of Deutsche Bank whilst ensuring the transparency of compensation decisions and their impact on shareholders and employees. The underlying principles of our compensation framework are applied to all employees equally, irrespective of differences in seniority, tenure or gender.

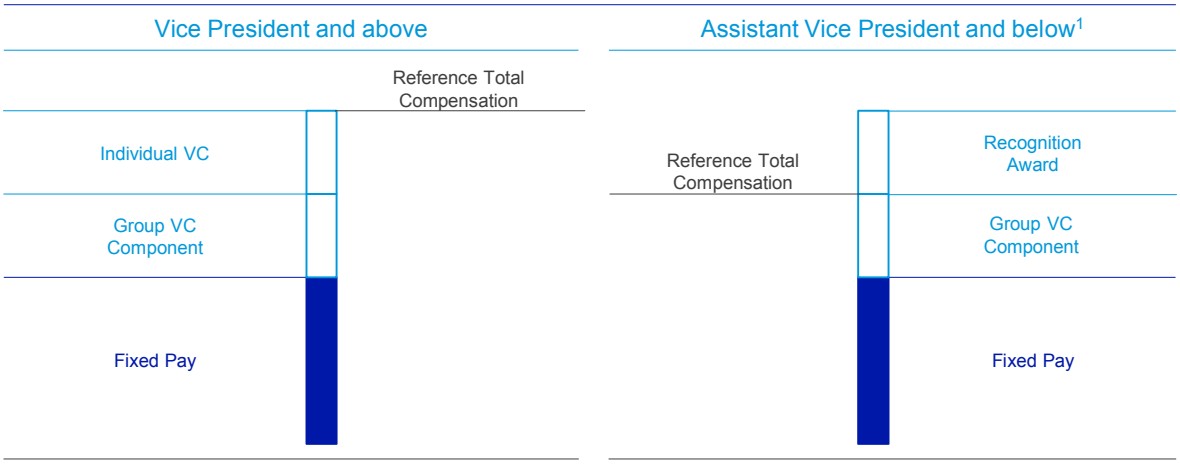
Pursuant to CRD 4 and the requirements subsequently adopted in the German Banking Act, Deutsche Bank is subject to a ratio of 1:1 with regard to fixed-to-variable remuneration components, which was increased to 1:2 with shareholder approval on May 22, 2014 with an approval rate of 95.27 %, based on valid votes by 27.68 % of the share capital represented at the Annual General Meeting. Nonetheless, the bank has determined that employees in specific infrastructure functions should continue to be subject to a ratio of at least 1:1 while Control Functions as defined by InstVV are subject to a ratio of 2:1 with regard to fixed-to-variable remuneration components.

The bank has assigned a Reference Total Compensation (RTC) to eligible employees that describes a reference value for their role. This value provides our employees orientation on their FP and VC. Actual individual TC can be at, above or below the Reference Total Compensation, based on Group affordability, and performance expectations having been satisfied at Group, divisional and individual levels, as determined by Deutsche Bank at its sole discretion.

Fixed Pay is used to compensate employees for their skills, experience and competencies, commensurate with the requirements, size and scope of their role. The appropriate level of FP is determined with reference to the prevailing market rates for each role, internal comparisons and applicable regulatory requirements. FP plays a key role in permitting us to meet our strategic objectives by attracting and retaining the right talent. For the majority of our employees, FP is the primary compensation component with a share of greater than 50 % of TC.

Variable Compensation reflects affordability and performance at Group, divisional, and individual level. It allows us to differentiate individual performance and to drive behavior through appropriate incentive systems that can positively influence culture. It also allows for flexibility in the cost base. VC generally consists of two elements – the Group VC Component and the Individual VC Component. The Individual VC Component is delivered either in the form of Individual VC (generally applicable for employees at the level of Vice President (VP) and above) or as Recognition Award (generally applicable for employees at the level of Assistant Vice President (AVP) and below). In cases of negative performance contributions or misconduct, an employee's VC can be reduced accordingly and can go down to zero. VC is granted and paid out subject to Group affordability. Under our compensation framework, there continues to be no guarantee of VC in an existing employment relationship. Such arrangements are utilized only on a very limited basis for new hires in the first year of employment and are subject to the bank's standard deferral requirements.

Key components of the compensation framework



[1] Some Assistant Vice Presidents and below in select entities and divisions are eligible for the Individual VC Component in lieu of the Recognition Award.

The Group VC Component is based on one of the overarching goals of the compensation framework – to ensure an explicit link between VC and the performance of the Group. To assess our annual achievements in reaching our strategic targets, the four Key Performance Indicators (KPIs) utilized as the basis for determining the 2018 Group VC Component were: Common Equity Tier 1 (CET 1) Capital Ratio (fully loaded), Leverage Ratio, Adjusted Costs, and Post-Tax Return on Tangible Equity (RoTE). These four KPIs represent important metrics for the capital, risk, cost and the revenue profile of our bank and provide an indication of the sustainable performance of Deutsche Bank.

Individual VC takes into consideration a number of financial and non-financial factors, including the applicable divisional performance, the employee's individual performance, conduct, and adherence to values and beliefs, as well as additional factors such as the comparison of pay levels with the employee's peer group and retention considerations.

Recognition Awards provide the opportunity to acknowledge and reward outstanding contributions made by the employees of lower seniority levels in a timely and transparent manner. Generally, the overall size of the Recognition Award budget is directly linked to a set percentage of FP for the eligible population and it is currently paid out twice a year, based on a review of nominations and contributions in a process managed at the divisional level.

Employee benefits complement Total Compensation and are considered FP from a regulatory perspective, as they have no direct link to performance or discretion. They are granted in accordance with applicable local market practices and requirements. Pension expenses represent the main element of the bank's benefits portfolio, globally.

In the context of InstVV, severance payments are considered VC. The bank has updated its severance framework to ensure full alignment with the respective new InstVV requirements.

Limited to extraordinary circumstances, the bank reserves the right to grant Retention Awards to help induce select employees which are at risk of leaving and that are critical to the bank's future, to remain at the bank. Retention Awards are generally linked to certain critical events in which the bank has a legitimate interest in retaining the employee for a defined period of time. This serves to minimize operational, financial or reputational risk. These awards are considered VC in a regulatory sense and are generally subject to the same requirements as other VC elements.

Determination of performance-based Variable Compensation

Deutsche Bank applies a methodology when determining VC that reflects the risk-adjusted performance and is primarily driven by (i) Group affordability, i.e. what can Deutsche Bank award in alignment with regulatory requirements, and (ii) performance, i.e. what should we award in order to provide an appropriate compensation for performance, while protecting the long-term health of the franchise.

Group affordability is assessed to determine that relevant parameters are meeting the current and projected future regulatory and strategic goals. The affordability parameters used are fully aligned with our Risk Appetite Framework and ensure that the bank's capital as well as liquidity position and planning, its risk-bearing capacity, the combined capital buffer requirements, and results are adequately taken into account.

When assessing Group and divisional performance, we reference a range of considerations. The performance is assessed in context of divisional financial and – based on Balanced Scorecards – non-financial targets. The financial targets are subject to appropriate risk-adjustment, in particular by referencing the degree of future potential risks to which Deutsche Bank may be exposed, and the amount of capital required to absorb severe unexpected losses arising from these risks. For the infrastructure functions, the performance assessment is mainly based on the achievement of cost targets and the Balanced Scorecards. While the allocation of VC to infrastructure functions depends on the overall performance of Deutsche Bank, it is not dependent on the performance of the division(s) these functions, particularly independent control functions, oversee.

At the level of the individual employee, we have established Variable Compensation Guiding Principles, which detail the factors and metrics that have to be taken into account when making Individual VC decisions. Our managers must fully appreciate the risk-taking activities of individuals to ensure that VC allocations are balanced and risk-taking is not inappropriately incentivized. The factors and metrics to be considered include, but are not limited to, individual performance based on quantitative and qualitative aspects, culture and behavioral considerations, and disciplinary sanctions. Managers of Material Risk Takers must specifically document the factors and risk metrics considered when making Individual VC decisions, and demonstrate how these factors influenced their decision. Generally, performance is assessed based on a one year period. However, for Management Board members of Significant Institutions, the performance across three years is taken into account.

Variable Compensation Structure

Our compensation structures are designed to provide a mechanism that promotes and supports long-term performance of our employees and our bank. Whilst a portion of VC is paid upfront, these structures require that an appropriate portion is deferred to ensure alignment to the sustainable performance of the Group.

At the same time, we believe that the use of shares or share-based instruments for deferred VC is an effective way to align compensation with Deutsche Bank's sustainable performance and the interests of shareholders. By using Deutsche Bank shares, the value of the individual's VC is linked to Deutsche Bank's share price over the deferral and retention period.

We continue to go beyond regulatory requirements with the amount of VC that is deferred and Deutsche Bank's minimum deferral periods. Whilst ensuring lower compensated employees are not subject to deferrals, we ensure an appropriate amount of deferred VC for higher earners. We start to defer parts of variable compensation for Material Risk Takers where VC is set at or above € 50,000. For non-MRTs, deferrals start at higher levels of VC. The VC threshold for MRTs requiring at least 60 % deferral is set at € 500,000. Furthermore, Directors and Managing Directors in the Corporate & Investment Bank (CIB) with Fixed Pay in excess of € 500,000 are subject to a VC deferral of 100 %. Material Risk Takers are on average subject to deferral rates in excess of the minimum 40 % (60 % for Senior Management) as required by InstVV.

As detailed in the table below, deferral periods range from three to five years, dependent on employee groups.

Overview on 2018 Award Types (excluding DWS Group)

Award Type	Description	Beneficiaries	Deferral Period	Retention Period	Proportion
Upfront: Cash VC	Upfront cash portion	All eligible employees	N/A	N/A	InstVV MRTs: 50 % of upfront VC Non-MRTs: 100 % of upfront VC
Upfront: Equity Upfront Award (EUA)	Upfront equity portion (linked to Deutsche Bank's share price over the retention period)	All InstVV MRTs with VC >= € 50,000	N/A	Twelve months	50 % of upfront VC
Deferred: Restricted Incentive Award (RIA)	Deferred cash portion	All employees with deferred VC	Equal tranche vesting over CIB: four years Sen. Mgmt.: five years Other: three years[1]	N/A	50 % of deferred VC
Deferred: Restricted Equity Award (REA)	Deferred equity portion (linked to Deutsche Bank's share price over the vesting and retention period)	All employees with deferred VC	Equal tranche vesting over CIB: four years Sen.Mgmt.: five years Other: three years[1]	Twelve months for InstVV MRTs	50 % of deferred VC

N/A – Not applicable
[1] Senior Management, for the purposes of performance year 2018 annual awards, is defined as Deutsche Bank's Senior Leadership Cadre, plus Management Board members of Significant Institutions and their direct reports (excl. non-management/-strategic roles) – excluding DWS Executive Board. All Senior Management employees are also considered InstVV MRTs.

Our employees are not allowed to sell, pledge, transfer or assign a deferred award or any rights in respect to the award. They may not enter into any transaction having an economic effect of hedging any variable compensation, for example offsetting the risk of price movement with respect to the equity-based award. Our Human Resources and Compliance functions, supported by the Compensation Officer, work together to monitor employee trading activity and to ensure that all our employees comply with this requirement.

Ex-post Risk Adjustment of Variable Compensation

We believe that the future conduct and performance of our employees are key elements of deferred VC. As a result, all deferred awards are subject to performance conditions and forfeiture provisions as detailed below.

Overview on Deutsche Bank Group performance conditions and forfeiture provisions of Variable Compensation

Provision	Description	Forfeiture
DB Group's Common Equity Tier 1 Capital Ratio and Liquidity Coverage Ratio	If at the quarter end prior to vesting and delivery the Group CET 1 Capital Ratio, or the Liquidity Coverage Ratio are below a certain threshold	Next tranche of deferred award due for delivery (100 % of all undelivered Equity Upfront Awards)[1]
Group IBIT	If the Management Board determines that prior to delivery Group IBIT is negative	Next tranche of deferred award due for delivery
Divisional IBIT	If the Management Board determines that prior to delivery Divisional IBIT is negative	Next tranche of deferred award due for delivery (applies only to MRTs in Business Divisions)
Forfeiture Provisions[2]	– In the event of an internal policy or procedure breach, breach of any applicable laws or regulations, or a Control Failure – If any award was based on performance measures or assumptions that are later deemed to be materially inaccurate – Where a Significant Adverse Event occurs, and the Participant is considered sufficiently proximate – If forfeiture is required to comply with prevailing regulatory requirements	Up to 100 % of undelivered awards
Clawback	In the event an InstVV MRT participated in conduct that resulted in significant loss or regulatory sanction; or failed to comply with relevant external or internal rules regarding appropriate standards of conduct	100 % of award which has been delivered, before the second anniversary of the last vesting date for the award

[1] For award types subject to cliff-vesting, the whole award will be forfeited if at quarter end prior to vesting or settlement the Group CET 1 Capital Ratio, or the Liquidity Coverage Ratio are below the threshold. For Equity Upfront Awards, the Group CET 1 Capital Ratio, or the Liquidity Coverage Ratio are only assessed at the quarter end prior to delivery.
[2] Forfeiture provisions here are not a complete list, other provisions apply as outlined in the respective plan rules.

Employee Groups with specific Compensation Structures

For some areas of the bank, compensation structures apply that deviate, within regulatory boundaries, in some aspects from the Group Compensation Framework outlined previously.

Postbank units

With effect from May 25, 2018, Deutsche Postbank AG merged with Deutsche Bank Privat- und Geschäftskunden AG to form DB Privat- und Firmenkundenbank AG. For the remainder of 2018, the Postbank units retained their compensation structures with some amendments for Material Risk Takers.

In line with Deutsche Bank Group practice, Postbank units utilize a Group and an Individual VC Component. However, for non-MRTs the Group VC Component is currently still based on Postbank business unit results. For Material Risk Takers, limited to performance year 2018, the Group VC Component reflects a combination of the objective achievement rate of both Postbank units and Deutsche Bank Group. For Senior Management, Material Risk Takers and other executive staff in Postbank units, the Group-wide deferral rules apply.

The compensation for nonexecutive staff in Postbank units is based on frameworks agreed with trade unions or with the respective workers' councils. Where no collective agreements exist, compensation is subject to individual contracts. In general, nonexecutive staff in Postbank units receive VC, but the structure and portion of VC differ between legal entities.

DWS

The vast majority of DWS asset management entities fall under AIFMD or UCITS while a limited number of entities remain in scope of the bank's Group Compensation Framework and InstVV. DWS has established its own compensation governance, policy, and structures, as well as Risk Taker identification process in line with AIFMD/UCITS requirements. These structures and processes are in line with InstVV where required, but tailored towards the Asset Management business.

DWS has implemented a self-imposed fixed-to-variable ratio of 1:2 for AIFMD/UCITS Control Function employees and 1:5 for other employees in order to align the compensation with industry standards. Generally, DWS applies remuneration rules that are equivalent to the Deutsche Bank Group approach, but use DWS Group-related parameters, where possible. Notable deviations from the Group Compensation Framework include the use of share-based instruments linked to DWS shares and fund-linked instruments. These serve to improve the alignment of employee compensation with DWS' shareholders' and investors' interests.

Control Functions

In line with InstVV, the bank has defined control functions that are subject to specific regulatory requirements. These control functions comprise Risk, Compliance, Anti-Financial Crime, Group Audit, parts of Human Resources, and the Compensation Officer and his Deputy. To prevent conflicts of interests, the parameters used to determine the Individual VC Component of these control functions do not follow the same parameters being used for the business they oversee. Based on their risk profile, these functions are subject to a fixed-to-variable pay ratio of 2:1.

In addition, for some additional corporate functions that perform control roles (including Legal, Group Finance, Group Tax, Regulation, and other parts of Human Resources), the bank has determined a voluntary application of a fixed-to-variable pay ratio of 1:1.

Tariff staff

Within Deutsche Bank Group there are more than 21,000 tariff employees in Germany (based on full-time equivalent). These tariff employees are primarily employed by Deutsche Bank AG, DB Privat- und Firmenkundenbank AG, and subsidiaries within the Postbank unit. They are subject to a collective agreement (*Tarifvertrag für das private Bankgewerbe und die öffentlichen Banken*), as negotiated between trade unions and employer associations. Also, former Postbank units are subject to agreements as negotiated with the respective trade unions directly. The remuneration of tariff staff is included in the quantitative disclosures in this report.

Compensation Decisions for 2018

Year-End considerations and decisions for 2018

For the determination of the total amount of VC for 2018, the Management Board considered many factors such as affordability and performance at both the Group and divisional level. The assessment of performance has been complemented by the consideration of other important aspects including the ongoing focus on achieving the bank's strategic objectives, regulatory requirements, the impact of competitive positioning on retaining and motivating employees, and a sustainable balance between shareholder and employee interests as required by the bank's Compensation Strategy.

For the financial year 2018, Deutsche Bank's pre-tax earnings amounted to approximately € 1.3 billion. For the first time since 2014, the bank reported a net profit.

The SECC has monitored Group affordability throughout 2018 and confirmed that the bank's capital and liquidity positions remained comfortably above regulatory minimum requirements throughout the year. As such, the Management Board confirmed that the Group affordability parameters were met and the total amount of VC for performance year 2018 may be awarded.

In the context of the above considerations and taking into account the risk-adjusted financial performance, the Management Board has determined a total amount of performance-based VC for 2018 of € 1.9 billion (including the Individual VC Component, the Group VC Component, Recognition Awards, and VC for Postbank units). The determination of VC for the Management Board of Deutsche Bank AG was not part of this decision, as it was carried out by our Supervisory Board in a separate process (please refer to the Management Board Compensation Report). The VC for the Management Board is, however, included as part of performance-based VC for 2018 in the tables and charts below.

As part of the overall 2018 VC awards granted in March 2019, the Group VC Component was awarded to all eligible employees in line with the assessment of the four defined KPIs, as outlined in the chapter Group Compensation Framework. The Management Board determined a payout rate of 70 % for 2018.

Disclosure of Total Compensation for 2018

The VC for Postbank units will be included as part of performance-based VC from reporting period 2018 onwards.

In line with the new definitions of Fixed Pay and Variable Pay according to the updated Section 2 InstVV, additional compensation elements need to be included in the quantitative disclosures compared to previous years. The disclosed Fixed Pay amounts now also include pension expenses as material benefits. Disclosed Variable Pay now also includes severance payments. For ease of reference, prior year values in the following table have been adjusted to include these two elements as well as VC for Postbank units for the 2017 reporting period as well.

Based on the new definitions, compared to 2017, the Fixed Pay according to § 2 InstVV for 2018 (including pension expenses as required by InstVV) decreased by approximately 3 % from € 8.6 billion to € 8.3 billion, mainly due to headcount reductions. As established by our compensation framework, FP continues to remain the primary compensation component for the majority of our employees, especially those at the lower seniority levels.

The total amount of year-end performance-based VC for 2018 – the amount of VC that Deutsche Bank Group pays to its employees for their performance in 2018 – decreased by approximately 14 % from € 2.3 billion to € 1.9 billion. When excluding VC for the Management Board of Deutsche Bank AG, performance-based VC decreased by approximately 15 % year on year.

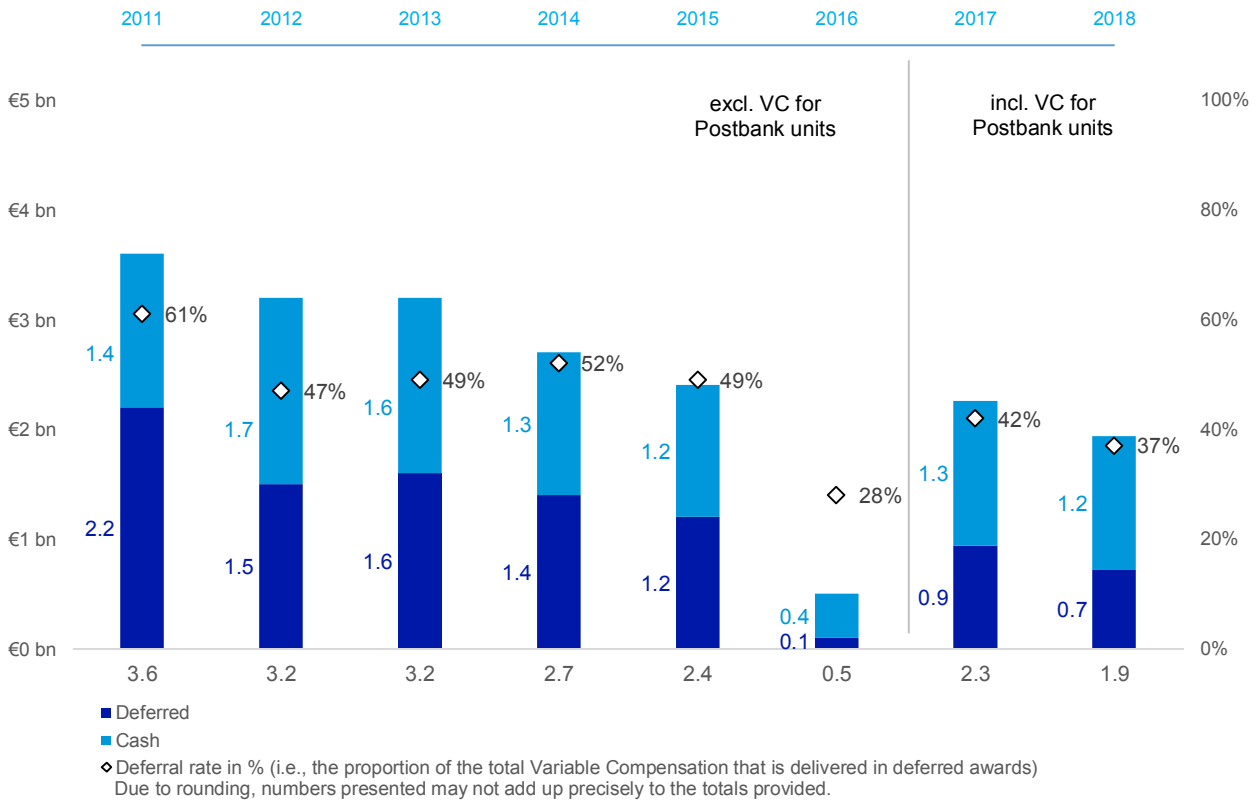
Variable Pay according to § 2 InstVV includes not only performance-based VC but also other VC commitments and severance payments. Compared to 2017, it decreased by approximately 8 %, mainly due to the reduced performance-based VC for 2018 – partially offset by increased severance cost in light of the bank's strategic priorities.

Compensation awards for 2018 – all employees

in € m. (unless stated otherwise)[1]	Supervisory Board[2]	Management Board[3]	CIB[3]	PCB[3]	DWS[3]	Independent Control Functions[3]	Corporate Functions[3]	2018 Group Total	2017 Group Total
Number of employees (full-time equivalent)	20	9	16,373	41,706	4,024	5,676	23,948	91,737	97,535
Total compensation	6	95	3,736	3,449	704	741	1,908	10,633	11,121
Base salary and allowances	6	31	2,381	2,730	440	597	1,506	7,684	7,901
Pension expenses	0	10	173	263	41	54	116	657	726
Fixed Pay according to § 2 InstVV[4]	6	42	2,555	2,992	480	651	1,622	8,341	8,628
Year-end performance-based VC[5]	**0**	**27**	**1,033**	**381**	**175**	**86**	**243**	**1,945**	2,256
Other VC[6]	0	0	104	12	23	1	4	143	113
Severance payments	0	26	45	64	26	4	39	203	123
Variable Pay according to § 2 InstVV[7]	0	53	1,181	457	224	91	286	2,292	2,493
Retention Award Program (Jan 2017)[8]								0	961

N/A – Not applicable
[1] The table may contain marginal rounding differences.
[2] Supervisory Board includes the Deutsche Bank AG board members at year-end. They are not considered for the Group Total Number of employees. Employee representatives are considered with their compensation for the Supervisory Board role only (their employee compensation is included in the relevant divisional column). The remuneration for members of the Deutsche Bank AG Supervisory Board is not reflected in the Group Total.
[3] Management Board includes the respective board members of Deutsche Bank AG at year-end. PCB includes Postbank units. DWS includes DWS Group – irrespective of whether employees are in scope of InstVV or AIFMD/UCITS V. Independent Control Functions includes Chief Risk Officer, Group Audit, Compliance, Anti-Financial Crime. Corporate Functions comprise any infrastructure function which is neither captured as an Independent Control Function nor part of any division.
[4] Fixed Pay according to § 2 InstVV includes base salary, allowances, and pension expenses.
[5] Year-end performance-based VC includes Individual/Group VC Components, Recognition Award, VC for Postbank units (for 2017 and for 2018), VC for Deutsche Bank AG Management Board.
[6] Other VC includes other contractual VC commitments in the period such as sign-on payments and retention awards.
[7] Variable Pay according to § 2 InstVV includes Deutsche Bank's year-end performance-based VC awards for 2018 and other VC commitments in the relevant period, as well as severance payments. € 26 million buyouts for new hires (replacement awards for lost entitlements from previous employers) are not included. Long-term Incentive Plans are not included as they will be considered as VC for the year in which the awards are due.
[8] Retention Award Program (Jan 2017) amount includes forfeitures and was FX-adjusted for 2017. For more information please refer to the Annual Report 2017.

Year-end performance-based Variable Compensation and deferral rates year over year



Due to rounding, numbers presented may not add up precisely to the totals provided.

Recognition and Amortization of Variable Compensation

As of December 31, 2018, including awards for financial year 2018 granted in early March 2019, unamortized deferred VC expenses amount to approximately € 1.6 billion. The following table outlines the amount of VC recognized on the balance sheet for 2018 and the projected future amortization of outstanding deferred VC over the next financial years (future grants and forfeitures excluded).

Year-end performance-based Variable Compensation (including Retention Award Program in 2017), recognized as of December 31, 2018 and projected amortization of deferred compensation granted

			Projected amortization (excluding future grants and forfeitures)		
in € bn.	Recognized on-balance sheet as of Dec 31, 2018	Not yet recognized on-balance sheet as of Dec 31, 2018	2019	2020	2021 - 2024
Upfront Awards - 2018	1.2	0.1	0.1	0.0	-
Deferred - 2018	0.1	0.6	0.3	0.2	0.1
Deferred - 2017 and prior[1]	1.6	1.0	0.5	0.3	0.2
Total	2.9	1.6	0.9	0.5	0.3

Due to rounding, numbers presented may not add up precisely to the totals provided. Including Variable Compensation for Postbank units.
[1] Deferred Variable Compensation granted for performance year 2017 or earlier includes Variable Compensation for Postbank units for 2017 and 2017 Retention Award Program which was not designed to compensate for performance.

Of the year-end performance-based VC for 2018, € 1.3 billion is charged to the income statement for 2018, including the upfront cash VC awards for 2018 amounting to € 1.2 billion as well as € 0.1 billion of deferred awards for 2018 already recognized as of December 31, 2018 due to regulatory requirements. € 0.7 billion will be charged to future years, including € 0.1 billion of Equity Upfront Awards which are granted upfront but amortized over a twelve months retention period as well as € 0.6 billion of Restricted Incentive and Restricted Equity Awards.

In addition, the income statement for 2018 was charged with a VC of € 0.6 billion stemming from prior years' deferrals, recognized and amortized as Other liabilities. € 1.0 billion of prior years' deferrals were recognized in Equity for 2018 as they were still part of the treasury stock distributable as of December 31, 2018. These outstanding share awards will vest and will be recognized as compensation expense during 2019 or in future years. Additional prior years' deferrals amounting to € 1.0 billion will be charged to future years.

Material Risk Taker Compensation Disclosure

On a global basis, 1,913 employees were identified as Material Risk Takers according to InstVV for financial year 2018, compared to 1,907 employees for 2017 (excluding Postbank units: 1,795 MRTs). The remuneration elements for all MRTs identified according to InstVV are detailed in the table below in accordance with Section 16 InstVV and Article 450 CRR.

Aggregate remuneration for Material Risk Takers according to InstVV

in € m. (unless stated otherwise)[1]	Super-visory Board[2]	Manage-ment Board[3]	CIB[3]	PCB[3]	DWS[3]	Inde-pendent Control Functions[3]	Corporate Functions[3]	2018 Group Total	2017 Group Total
Number of MRTs (headcount)	49	45	1,109	334	17	180	179	1,913	1,795
Number of MRTs (FTE)	48	39	1,013	322	15	174	170	1,781	1,772
thereof: Senior Management[4]	0	25	35	119	7	29	37	252	
Total Pay	**7**	**122**	**1,236**	**174**	**27**	**94**	**147**	**1,807**	2,359
Total Fixed Pay	**7**	**57**	**705**	**103**	**12**	**74**	**91**	**1,049**	981
thereof:									
in cash (incl. pension expenses)[5]	5	57	705	103	12	74	91	1,048	
in shares or other instruments[6]	1	0	0	0	0	0	0	1	
Total Variable Pay for period[7]	**0**	**65**	**530**	**71**	**16**	**20**	**56**	**758**	1,379
thereof:									
in cash	0	34	273	38	12	11	30	398	685
in shares or share-based instruments	0	31	257	33	3	9	26	360	689
in other types of instruments	0	0	0	0	1	0	0	0	6
Total Variable Pay for period, deferred	**0**	**42**	**447**	**39**	**5**	**8**	**29**	**569**	1,087
thereof:									
in cash	0	14	223	20	2	4	15	278	535
in shares or share-based instruments	0	27	223	19	2	4	15	291	545
in other types of instruments	0	0	0	0	0	0	0	0	6
Total amount of variable pay still outstanding at the beginning of the year that was deferred in previous years	**0**	**61**	**1,303**	**126**	**24**	**42**	**121**	**1,678**	1,783
thereof:									
vested	0	10	54	14	3	5	9	95	704
vested and paid/delivered	0	9	53	11	3	5	9	90	
unvested	0	51	1,250	112	21	37	112	1,583	1,079
Deferred Variable Pay awarded, paid out or reduced during period									
awarded during period	0	27	683	58	11	20	44	842	762
paid out during period	0	16	315	52	7	17	40	447	639
reduced through explicit risk adjustments[8]	0	0	7	0	0	0	0	7	3
Number of beneficiaries of guaranteed variable remuneration (incl. sign-on payments)	0	0	4	0	0	0	0	4	27
Total amount of guaranteed variable pay (incl. sign-on payments)	0	0	2	0	0	0	0	2	21
Total amount of severance payments granted during period[9]	0	29	15	3	8	0	2	58	21
Number of beneficiaries of severance payments granted during period	1	6	82	7	3	3	6	108	53
Highest severance payment granted to an individual during period	0	11	1	1	4	0	2	11	5

[1] The table may contain marginal rounding differences. Employees are allocated to columns based on their primary role. 2017 values are based on the values disclosed in the 2017 report and include the full value of the Retention Award Program granted to MRTs in 2017.
[2] Supervisory Board includes the Supervisory Board members of all Significant Institutions within Deutsche Bank Group at year-end. Employee representatives solely identified due to their Supervisory Board role are considered with their compensation for the Supervisory Board role only.
[3] Management Board includes the respective board members of all Significant Institutions within Deutsche Bank Group at year-end. PCB includes Postbank units. As the determination of VC for some employees in Postbank units continues even beyond the publication of this report, the VC for MRTs in Postbank units is considered based on preliminary data. Final values will be disclosed in the compensation reports of DB Privat- und Firmenkundenbank AG as well as BHW Bausparkasse AG. DWS includes only InstVV Material Risk Takers within DWS Group. Independent Control Functions include Chief Risk Officer, Group Audit, Compliance, Anti-Financial Crime. Corporate Functions comprise any infrastructure function which is neither captured as an Independent Control Function nor part of any division.
[4] Senior Management is defined as Deutsche Bank's Senior Leadership Cadre, plus Management Board members of Significant Institutions and their direct reports (excl. non-management/-strategic roles) – excluding DWS Executive Board. All Senior Management employees are also considered InstVV MRTs. Management Board members of Significant Institutions are only included in the Management Board column.
[5] Fixed Pay in cash includes base salary, allowances and material benefits (pension expenses).
[6] Fixed Pay in shares is only granted to members of the Deutsche Bank AG Supervisory Board as described in the chapter Compensation System for Supervisory Board Members.
[7] Total Variable Pay for period includes Deutsche Bank's year-end performance-based VC awards for 2018 and other VC commitments in the relevant period, as well as severance payments. Buyouts and Long-term Incentive Plans are not included.
[8] Includes penalty (malus) and clawback.
[9] Severance payments are generally paid out in the year in which they have been granted.

Remuneration of high earners

in €	2018 Number of employees
Total Pay	
1,000,000 to 1,499,999	356
1,500,000 to 1,999,999	125
2,000,000 to 2,499,999	61
2,500,000 to 2,999,999	31
3,000,000 to 3,499,999	15
3,500,000 to 3,999,999	22
4.000,000 to 4,499,999	5
4,500,000 to 4,999,999	3
5,000,000 to 5,999,999	14
6,000,000 to 6,999,999	8
7,000,000 to 7,999,999	1
8,000,000 to 8,999,999	0
9,000,000 to 9,999,999	2
10,000,000 to 10,999,999	0
Total	643

[1] Compared to 2017, high earners in Postbank units and pension expenses as well as severance payments are considered for the first time. Buyouts and Long-term Incentive Plans not included.

In total, 643 employees received a Total Pay of € 1 million or more for 2018, compared to 705 employees in 2017 and 316 employees in 2016. Based on the same definitions as used in previous years – excluding pension expenses and severances – the number of high earners for 2018 would be 607 employees.

The table above does not include the four members of the Group Management Board who left the Management Board in 2018. In addition to the fixed and variable remuneration and the service costs (IFRS) for pension benefits, termination agreements were concluded with all four members of the Management Board in which termination benefits (severance payments and compensation for waiting periods) were agreed to which the members of the Management Board are entitled on the basis of their service contracts (in one case two service contracts). If all compensation components are added, the total amount in one case is between € 4.5 and 5 million, in one case between € 7 and 8 million, in one case between € 13 and 14 million and in one case between € 15 and 16 million. Details of all components are disclosed in the Management Board Compensation Report.

Compensation System for Supervisory Board Members

The compensation principles for Supervisory Board members are set forth in our Articles of Association, which our shareholders amend from time to time at the Annual General Meeting. Such compensation provisions, which were newly conceived in 2013, were last amended by resolution of the Annual General Meeting on May 18, 2017 and became effective on October 5, 2017. Accordingly, the following provisions apply:

The members of the Supervisory Board receive fixed annual compensation ("Supervisory Board Compensation"). The annual base compensation amounts to € 100,000 for each Supervisory Board member. The Supervisory Board Chairman receives twice that amount and the Deputy Chairperson one and a half times that amount.

Members and chairs of the committees of the Supervisory Board are paid additional fixed annual compensation as follows:

	Dec 31, 2018	
Committee in €	Chairperson	Member
Audit Committee	200,000	100,000
Risk Committee	200,000	100,000
Nomination Committee	100,000	50,000
Mediation Committee	0	0
Integrity Committee	200,000	100,000
Chairman's Committee	100,000	50,000
Compensation Control Committee	100,000	50,000
Strategy Committee	100,000	50,000
Technology, Data and Innovation Committee	100,000	50,000

75 % of the compensation determined is disbursed to each Supervisory Board member after submitting invoices within the first three month of the following year. The other 25 % is converted by the company at the same time into company shares based on the average closing price on the Frankfurt Stock Exchange (Xetra or successor system) during the last ten trading days of the preceding January, calculated to three digits after the decimal point. The share value of this number of shares is paid to the respective Supervisory Board member in February of the year following his departure from the Supervisory Board or the expiration of his term of office, based on the average closing price on the Frankfurt Stock Exchange (Xetra or successor system) during the last ten trading days of the preceding January, provided that the member does not leave the Supervisory Board due to important cause which would have justified dismissal.

In case of a change in Supervisory Board membership during the year, compensation for the financial year will be paid on a pro rata basis, rounded up/down to full months. For the year of departure, the entire compensation is paid in cash; a forfeiture regulation applies to 25 % of the compensation for that financial year.

The company reimburses the Supervisory Board members for the cash expenses they incur in the performance of their office, including any value added tax (VAT) on their compensation and reimbursements of expenses. Furthermore, any employer contributions to social security schemes that may be applicable under foreign law to the performance of their Supervisory Board work shall be paid for each Supervisory Board member affected. Finally, the Chairman of the Supervisory Board will be appropriately reimbursed for travel expenses incurred in performing representative tasks that his function requires and for the costs of security measures required on account of his function.

In the interest of the company, the members of the Supervisory Board will be included in an appropriate amount, with a deductible, in any financial liability insurance policy held by the company. The premiums for this are paid by the company.

Supervisory Board Compensation for the 2018 Financial Year

Individual members of the Supervisory Board received the following compensation for the 2018 financial year (excluding value added tax).

	Compensation for fiscal year 2018		Compensation for fiscal year 2017	
Members of the Supervisory Board in €	Fixed	Thereof payable in 1st quarter 2019	Fixed	Thereof paid in 1st quarter 2018
Dr. Paul Achleitner[1]	858,333	643,750	800,000	683,333
Detlef Polaschek[2]	262,500	196,875	0	0
Stefan Rudschäfski[3]	125,000	125,000	300,000	225,000
Ludwig Blomeyer-Bartenstein[2]	175,000	131,250	0	0
Wolfgang Böhr[3]	83,333	83,333	200,000	150,000
Frank Bsirske[4]	279,167	235,417	250,000	187,500
Mayree Carroll Clark[2]	204,167	153,125	0	0
Dina Dublon[5]	175,000	175,000	300,000	225,000
Jan Duscheck[4]	187,500	151,042	100,000	75,000
Dr. Gerhard Eschelbeck[6]	129,167	96,875	58,333	43,750
Katherine Garrett-Cox	241,667	181,250	200,000	150,000
Timo Heider[4]	229,167	192,708	200,000	150,000
Sabine Irrgang[3]	83,333	83,333	200,000	150,000
Prof. Dr. Henning Kagermann[3]	104,167	104,167	250,000	187,500
Martina Klee[4]	170,833	148,958	200,000	150,000
Peter Löscher[7]	0	0	83,333	83,333
Henriette Mark[4]	229,167	192,708	200,000	150,000
Richard Meddings	429,167	321,875	400,000	300,000
Louise Parent[3]	125,000	125,000	400,000	300,000
Gabriele Platscher[4]	258,333	214,583	200,000	150,000
Bernd Rose[4]	229,167	192,708	200,000	150,000
Gerd Alexander Schütz[8]	129,167	107,292	58,333	43,750
Prof. Dr. Stefan Simon	487,500	365,625	216,667	162,500
Stephan Szukalski[2]	116,667	87,500	0	0
Dr. Johannes Teyssen[3]	104,167	104,167	250,000	187,500
John Alexander Thain[2]	116,667	87,500	0	0
Michele Trogni[2]	175,000	131,250	0	0
Prof. Dr. Klaus Rüdiger Trützschler[7]	0	0	83,333	83,333
Prof. Dr. Norbert Winkeljohann[9]	58,333	43,750	0	0
Total	**5,766,669**	**4,676,041**	5,150,000	3,987,500

[1] Member was re-elected on May 18, 2017.
[2] Member since May 24, 2018.
[3] Member until May 24, 2018.
[4] As Employee representatives on April 26, 2018 re-elected.
[5] Member since July 31, 2018.
[6] Member since May 18, 2017.
[7] Member until May 18, 2017.
[8] Member since May 18, 2017. Re-elected on May 24, 2018.
[9] Member since August 1, 2018.

Following the submission of invoices 25 % of the compensation determined for each Supervisory Board member for the 2018 financial year was converted into notional shares of the company on the basis of a share price of € 7.9747 (average closing price on the Frankfurt Stock Exchange (Xetra) during the last ten trading days of January 2019). Members who left the Supervisory Board in 2018 were paid the entire amount of compensation in cash. For members whose term of office ended in 2018, the total compensation for the period until then, was paid fully in cash.

The following table shows the number of notional shares of the Supervisory Board members, to three digits after the decimal point, that were awarded in the first three month 2019 as part of their 2018 compensation as well as the number of notional shares accrued from previous years as part of the compensation 2013 to 2017 accumulated during the respective membership in the Supervisory Board and the total amounts paid out in February 2019 for departed or re-elected members.

	Number of notional shares			
Members of the Supervisory Board	Converted in February 2019 as part of the compensation 2018	Total prior-year amounts as part of the compensation from 2013 to 2017	Total (cumulative)	In February 2019 payable in €[1]
Dr. Paul Achleitner[2]	26,908.013	7,547.235	34,455.248	0
Detlef Polaschek[3]	8,229.150	0	8,229.150	0
Stefan Rudschäfski[4]	0	4,851.794	4,851.794	38,692
Ludwig Blomeyer-Bartenstein[3]	5,486.100	0	5,486.100	0
Wolfgang Böhr[4]	0	5,273.861	5,273.861	42,057
Frank Bsirske[5]	5,486.100	13,855.697	19,341.797	110,495
Mayree Carroll Clark[3]	6,400.450	0	6,400.450	0
Dina Dublon[6]	0	15,297.428	15,297.428	121,992
Jan Duscheck[5]	4,571.750	2,181.701	6,753.451	17,398
Dr. Gerhard Eschelbeck	4,049.264	943.404	4,992.668	0
Katherine Garrett-Cox	7,576.043	4,363.401	11,939.444	0
Timo Heider[5]	4,571.750	11,105.005	15,676.755	88,559
Sabine Irrgang[4]	0	11,105.005	11,105.005	88,559
Prof. Dr. Henning Kagermann[4]	0	14,560.688	14,560.688	116,117
Martina Klee[5]	2,743.050	11,387.001	14,130.051	90,808
Henriette Mark[5]	4,571.750	12,130.752	16,702.502	96,739
Richard Meddings	13,454.007	13,330.645	26,784.652	0
Louise Parent[4]	0	14,763.082	14,763.082	117,731
Gabriele Platscher[5]	5,486.100	11,848.755	17,334.855	94,490
Bernd Rose[5]	4,571.750	11,566.759	16,138.509	92,241
Gerd Alexander Schütz[7]	2,743.050	943.404	3,686.454	7,523
Prof. Dr. Stefan Simon	15,282.707	3,955.622	19,238.329	0
Stephan Szukalski[3]	3,657.400	0	3,657.400	0
Dr. Johannes Teyssen[4]	0	11,015.673	11,015.673	87,847
John Alexander Thain[3]	3,657.400	0	3,657.400	0
Michele Trogni[3]	5,486.100	0	5,486.100	0
Prof. Dr. Norbert Winkeljohann[8]	1,828.700	0	1,828.700	0
Total	**136,760.634**	182,026.912	**318,787.546**	**1,211,250**

[1] At a value of € 7.9747 based on the average closing price on the Frankfurt Stock Exchange (Xetra or successor system) during the last ten trading days of January 2019.
[2] Member was re-elected on May 18, 2017.
[3] Member since May 24, 2018.
[4] Member until May 24, 2018.
[5] As Employee representatives on April 26, 2018 re-elected.
[6] Member until July 31, 2018.
[7] Member since May 18, 2017. On May 24, 2018 re-elected.
[8] Member since August 1, 2018.

All employee representatives on the Supervisory Board, with the exception of Frank Bsirske, Jan Duscheck and Stephan Szukalski, are employed by us. In the 2018 financial year, we paid such members a total amount of € 1.11 million in the form of salary, retirement and pension compensation in addition to their Supervisory Board compensation.

We do not provide members of the Supervisory Board with any benefits after they have left the Supervisory Board, though members who are or were employed by us are entitled to the benefits associated with the termination of such employment. During 2018, we set aside € 0.12 million for pension, retirement or similar benefits for the members of the Supervisory Board who are or were employed by us.

With the agreement of the Bank's Management Board, Dr. Paul Achleitner performs representative functions in various ways on an unpaid basis for the Bank and participates in opportunities for referrals of business for the Bank. These tasks are related to the functional responsibilities of the Chairman of the Supervisory Board of Deutsche Bank AG. In this respect, the reimbursement of costs is provided for in the Articles of Association. On the basis of a separate contractual agreement, the Bank provides Dr. Paul Achleitner with infrastructure and support services free of charge for his services in the interest of the Bank. He is therefore entitled to avail himself of internal resources for preparing and carrying out these activities. The Bank's security and car services are available for Dr. Paul Achleitner for use free of charge for these tasks. The Bank also reimburses travel expenses and attendance fees and covers the taxes for any non-cash benefits provided. On September 24, 2012, the Chairman's Committee approved the conclusion of this agreement. The provisions apply for the duration of Dr. Paul Achleitner's tenure as Chairman of the Supervisory Board and are reviewed on an annual basis for appropriateness. Under this agreement between Deutsche Bank and Dr. Achleitner, support services equivalent to € 225,000 (2017: € 248,000) were provided and reimbursements for expenses amounting to € 218,672 (2017: € 197,679) were paid during the 2018 financial year.

Corporate Responsibility

Our approach to sustainability is grounded on the “triple bottom line” concept that encompasses the dimensions of people, planet and profit. For us, this means sustainable business performance, that balances economic success with environmental and social responsibility

Deutsche Bank’s Code of Conduct comprehends our purpose, values, and beliefs, as well as the minimum standards of conduct to which everybody at the bank has to adhere. While underlining the relevance of effective rules and controls, the Code also outlines our commitment to foster a business approach that considers the direct and indirect economic, social, and environmental impacts of our business decisions on our stakeholders. The principles laid out in our Code of Conduct are reflected in our management structures, policies and processes and control systems. We continually monitor developments in our business environment, and review and adjust our internal frameworks accordingly.

We value open dialogue with our stakeholders and respect their diverse expectations. Together, this helps us make informed decisions while continually shaping our sustainability approach.

Furthermore, our sustainability approach is informed by internationally recognized standards and principles. We seek to align with global agreements such as the UN Sustainable Development Goals, and the Paris Agreement on climate change and voluntarily commit ourselves to best practice principles including the Ten Principles of the UN United Nations Global Compact, the UN Principles for Responsible Investment, and UN Guiding Principles on Business and Human Rights. We reinforce our commitment on specific issues such as climate change and human rights by publicly communicating our support e.g. via signing the Paris Pledge for Action or publishing dedicated statements such as our Human Rights Statement.

Deutsche Bank’s Management Board is responsible for the integration of sustainability across the bank. A centrally organized sustainability team within our Communications & CSR function acts as an interface between internal and external stakeholders. Our Group-wide Sustainability Council acts as advisory body to the Management Board and will further develop and enforce the bank’s sustainability approach.

For more information on sustainability, please visit the consolidated Non-Financial Report 2018 (NFRep 2018) for Deutsche Bank Group. The NFRep 2018 includes the legally required information in accordance with § 315 (3) of the German Commercial Code, marked by a bracket. The NFRep 2018 PDF is published on our Investor Relations website at db.com/annual-reports.

Employees

Group Headcount

As of December 31, 2018, we employed a total of 91,737 staff members compared to 97,535 as of December 31, 2017. We calculate our employee figures on a full-time equivalent basis, meaning we include proportionate numbers of part-time employees.

The following table shows our numbers of full-time equivalent employees as of December 31, 2018, 2017 and 2016.

Employees[1]	Dec 31, 2018	Dec 31, 2017	Dec 31, 2016
Germany	41,669	42,526	44,600
Europe (outside Germany), Middle East and Africa	20,871	23,543	24,062
Asia/Pacific	19,732	20,861	20,099
North America[2]	9,275	10,358	10,611
Latin America	189	247	373
Total employees	**91,737**	97,535	99,744

[1] Full-time equivalent employees; in 2018 BHW KSG aligned its FTE definition to Deutsche Bank which increased the Group number as of December 31, 2018 by 95 (prior periods not restated).
[2] Primarily the United States.

The number of our employees decreased in 2018 by 5,797 or 5.9 % driven by implementation of our targets announced in May 2018:

- Germany (-857; -2.0 %) driven by the implementation of restructuring measures, primarily in Private & Commercial Bank related to closure of branches;
- North America (-1,083; -11.3 %) driven mostly by reductions in Corporate & Investment Bank and in COO;
- Latin America (-58; -23.5 %) due to reductions primarily in Brazil as a result of the implementation of our footprint strategy;
- EMEA ex Germany (-2,672; -11.3 %) particularly a result of the demerger of the private and commercial banking business in Poland;
- Asia/Pacific (-1,128; -5.4 %) primarily driven by reductions in COO (-837).

Employees	Dec 31, 2018	Dec 31, 2017	Dec 31, 2016
Corporate & Investment Bank	17.8 %	18.1 %	18.2 %
Private & Commercial Bank	45.5 %	45.1 %	45.6 %
Asset Management	4.4 %	4.1 %	4.1 %
Non-Core Operations Unit	0.0 %	0.0 %	0.1 %
Infrastructure	32.3 %	32.7 %	32.0 %

- Corporate & Investment Bank (-1,314; -7.4 %) driven by reductions in the global financial centers primarily in the US, UK, Hong Kong and Singapore;
- Private & Commercial Bank (-2,244; -5.1 %) driven by the demerger of the private and commercial banking business in Poland and of reductions in Germany;
- Asset Management/DWS (+11; +0.3 %);
- Infrastructure functions (-2,250; -7.1 %) primarily driven by reductions in COO (-1,746), which were partly offset by insourcing of business critical external roles and further strengthening of Anti-Financial Crime division.

Labor Relations

In Germany, labor unions and employers' associations generally negotiate collective bargaining agreements on salaries and benefits for employees below the management level. Many companies in Germany, including ourselves and our material German subsidiaries, are members of employers' associations and are bound by collective bargaining agreements.

Accordingly, our employers' association, the Arbeitgeberverband des privaten Bankgewerbes e.V., regularly renegotiates the collective bargaining agreements that cover many of our employees. The current agreement reached in July 2016 includes the period from May 2016 onwards. After five months without any pay raise, a first pay raise of 1.5 % takes place from October 2016 on, a second pay rise of 1.1 % from January 2018 on, and a third pay raise of 1.1 % from November 2018 on. The existing collective bargaining agreement lasts until January 31, 2019. Negotiations on a new collective bargaining agreement take place in the first half of 2019.

Our employers' association negotiates with the following unions:

- ver.di (Vereinigte Dienstleistungsgewerkschaft), a union formed in July 2001 resulting from the merger of five unions, including the former bank unions Deutsche Angestellten Gewerkschaft and Gewerkschaft Handel, Banken und Versicherungen;
- Deutscher Bankangestellten Verband (DBV – Gewerkschaft der Finanzdienstleister);
- Deutscher Handels- und Industrieangestellten Verband (DHV – Die Berufsgewerkschaft).

German law prohibits us from asking our employees whether they are members of labor unions. Therefore, we do not know how many of our employees are union members. Approximately 15 % of the employees in the German banking industry are unionized. We estimate that less than 15 % of our employees in Germany are unionized (excluding former Postbank, which itself traditionally has a significantly higher unionization rate of approximately 60 %). On a worldwide basis, we estimate that approximately 15 % of our employees are members of labor unions (including former Postbank, less than 25 %).

As of December 31, 2018, 31 % of former Postbank staff members in Germany are civil servants (full-time equivalent basis), compared to 32 % as of December 31, 2017.

Post-Employment Benefit Plans

We sponsor a number of post-employment benefit plans on behalf of our employees, both defined contribution plans and defined benefit plans.

In our globally coordinated accounting process covering defined benefit plans with a defined benefit obligation exceeding € 2 million our global actuary reviews the valuations provided by locally appointed actuaries in each country.

By applying our global principles for determining the financial and demographic assumptions we ensure that the assumptions are best-estimate, unbiased and mutually compatible, and that they are globally consistent.

For a further discussion on our employee benefit plans see Note 35 “Employee Benefits” to our consolidated financial statements.

Restructuring

The bank’s regions were impacted by different measures. All regions have been impacted by the restructuring measures. Europe (excluding Germany and UK) saw the sharpest decline in employee numbers (-2,672 FTE), largely driven by the sale of the retail business in Poland in the fourth quarter of 2018. In 2018, we continued to insource business-critical external roles, especially in IT.

Talent acquisition

The voluntary staff turnover rate was at 8.4% in 2018 (2017: 7.8%). The slight increase of 0.6 percentage points is primarily due to a higher fluctuation in Asia/Pacific (2018: 18.0%, 2017: 16.8%), whereas voluntary staff turnover rate in Germany remained on a low level (2018: 2.0%, 2017: 2.0%). However, this fluctuation remains at a normal level.

Recruiting talent continues to be a key priority for Deutsche Bank. Filling open positions in front-office roles and operations centers was again a priority in 2018, as was hiring talent to meet the growing demand in regulatory roles (e.g. Anti-Financial Crime, Audit and Compliance). Additionally, talent acquisition focused on insourcing of 1,207 external roles (2017: 1,446), particularly in IT, as well as hiring 1,517 young talents (2017: 1,235), therein 910 graduates (2017: 619) and 607 vocational trainees in Germany (2017: 616).

Promoting internal career mobility

Internal mobility plays a vital role in retaining qualified and talented employees and keeping their expertise and experience within the bank. In 2018, we continued to develop and embed our internal mobility strategy and uphold our commitment to filling vacant positions with suitable internal candidates. All vacant positions are first advertised to internal staff for at least two weeks. Prioritizing internal candidates helps employees affected by restructuring find new roles at the bank. We also promote cross-divisional mobility to enable employees to expand their skills and experience for rounded careers. Furthermore, internal mobility helps reduce the bank’s redundancy and recruitment costs. 37% (2017: 32%) of all job vacancies were filled internally in 2018 (excl. Postbank). In Germany the figure was 65% (2017: 66%) due to redundancies caused by restructuring measures, as well as by changes resulting from digitalization and control functions.

Diversity and Inclusion

As a global organization, Deutsche Bank is committed to an inclusive culture that respects and embraces the diversity of our employees, clients, and communities. As diversity and inclusion are central to the bank's culture, we seek to:

- Build talented and diverse teams to drive business results
- Create a respectful and inclusive environment where people can thrive
- Strengthen our relationship with clients, partners, regulators, communities, and potential employees

We aim to attract, develop, and retain the best people from all cultures, countries, races, ethnicities, genders, sexual orientations, abilities, beliefs, backgrounds, and experiences. To this end, and to prepare for opportunities and challenges arising from changing demographics and digitalization, we follow an integrated and multi-dimensional approach to diversity and inclusion.

Deutsche Bank continued its efforts to advance women in the workplace throughout 2018. The percentage of women on the Supervisory Board stood at 30% at the end of the year (2017: 35%), which met the statutory requirement of 30% for listed and co-determined German companies under gender quota legislation introduced in 2015.

The latest Supervisory Board's target for the Management Board was set in 2017 as at least 20% female members by June 30, 2022. This translates to two women given a Management Board size of between eight and twelve members. With one woman (Chief Regulatory Officer) currently on the Management Board, this target has not yet been met. Within the Diversity Principles of the Suitability Guidelines for selecting the members of the Management Board, the Supervisory Board is working towards the 2022 target.

As of year-end 2018, 20.0% of positions at the first management level below the Management Board were held by female executives (2017: 18%). At the second level below the Management Board, this percentage stood at 21% (2017: 19.6%). In accordance with legal requirement in Germany, the bank set targets for December 31, 2020 of 20% and 25%, respectively.

In 2011, Deutsche Bank signed a voluntary declaration to substantially raise the proportion of female managers globally by the end of 2018. As of year-end 2018, the percentage of female Managing Directors and Directors stood at 22.8% (excluding Postbank 2017: 21.9%). Since 2010, the number of women at this level has increased by 24.1%. The share of female officers was 33.6% (2017: 33.3%).

For the first time in 2018, Deutsche Bank made the list of the top 100 most inclusive companies on the Thomson Reuters D&I Index. Now in its third year, this investable index is informed by ESG data and evaluates companies on various components of inclusion. Deutsche Bank ranks #68 of all the 2,173 companies evaluated. This puts us in the top 100, which is the investible index referenced. In the banking services category, we ranked fourth out of 185 companies and sixth out of 84 German companies.

During almost 20 years of experience in diversity and inclusion, a number of key external partnerships were built across the globe. These partnerships not only help us to drive our internal agenda. They also enable us to share good practice and to positively impact on the societies we are operating in. We are convinced that his helps us to strengthen relationships with clients, partners and communities.

- In Germany the bank is a founding member and currently management board member of the Charta der Vielfalt (Charter of Diversity), an association under the patronage of Chancellor Angela Merkel that actively fosters diversity in the workplace.
- Elsewhere, Deutsche Bank is a founding signatory of the U.K. Treasury's Women in Finance Charter, promoting a more gender-balanced financial services industry, as well as the Charte de la Diversité in Luxembourg, the Charter Diversidad in Spain, the Manifesto for Women's Employment in Italy, and i-Gen, the Portuguese business forum for gender diversity.

Digitalization

Technological developments offer unprecedented opportunities for banks. In their traditional business model, they are increasingly being challenged by providers of disruptive business models. Banks are faced with the task of making their existing business efficient and profitable while developing new business opportunities. Deutsche Bank's aim is to position itself as a technology company, be a leader in digital banking with new ideas, and establish systematic research and development for innovations through combining state-of-the-art technology with analyst know-how, e.g. ROBIN, Deutsche Bank's digital asset management. The continuous need to make decisions in this area demands not only the knowledge and experience of employees, but also a high degree of willingness and ability to develop completely new and hitherto unknown areas.

Designing effective and future-oriented HR work means explaining to existing and future employees the sense, direction, and orientation of Deutsche Bank's path and strategy in our fast-moving and dynamic business environment. Since this is characterized by unpredictability and increasing complexity that make decision-making difficult, the question of how quickly we recognize internal and external changes and how effectively we react to them to offer clients added value will be crucial in the future.

Key employee figures

A few selected employee figures and KPIs are set forth below. For full details on Deutsche Bank's people metrics, as well as its strategic HR priorities and achievements, please refer to the bank's Human Resources Report 2018.

	Dec 31, 2018	Dec 31, 2017	Dec 31, 2016
Female staff (based upon global corporate titles, in FTE)[1]			
Female Managing Directors and Directors	22.8 %	21.9 %	21.3 %
Female officers	33.6 %	33.3 %	32.8 %
Female non-officers	56.5 %	55.8 %	55.6 %
Total female staff	**41.7 %**	41.6 %	41.5 %
Age (in %, headcount)			
up to 29 years	15.5 %	16.2 %	17.1 %
30 - 39 years	29.3 %	30.1 %	29.9 %
40 - 49 years	27.6 %	27.7 %	28.2 %
Over 49 years	27.6 %	26.0 %	24.8 %
Part-time employment (in % of total staff)			
Germany	23.9 %	24.4 %	23.7 %
Europe (outside Germany), Middle East and Africa	6.4 %	6.5 %	6.2 %
Americas	0.5 %	0.4 %	0.4 %
Asia/Pacific	0.2 %	0.2 %	0.2 %
Total part-time employment	**13.1 %**	13.0 %	12.9 %
Apprentices ratio in Germany	3.4 %	3.6 %	3.9 %

	2018	2017	2016
Commitment index[2]			
Germany	50 %	51 %	52 %
UK	51 %	52 %	57 %
Europe (outside Germany & UK), Middle East and Africa	62 %	60 %	63 %
Americas	56 %	54 %	61 %
Asia/Pacific	68 %	67 %	68 %
Total Commitment Index	**57 %**	57 %	58 %
Voluntary staff turnover rate			
Germany	2.0 %	2.0 %	1.8 %
Europe (outside Germany), Middle East and Africa	9.2 %	8.5 %	7.0 %
Americas	14.1 %	13.0 %	11.3 %
Asia/Pacific	18.0 %	16.8 %	17.1 %
Total voluntary staff turnover rate	**8.4 %**	7.8 %	7.2 %
Health rate (in %)[3]	93.9 %	94.2 %	94.3 %

1 Excluding legal entities outside of DB Corporate Title system, primarily former Postbank.
2 Excluding former Postbank.
3 Health rate: 100 - ((total sickness days x 100)/total regular working days); Germany excluding primarily former Postbank.

Internal Control over Financial Reporting

General

Management of Deutsche Bank and its consolidated subsidiaries is responsible for establishing and maintaining adequate internal control over financial reporting (ICOFR). Our internal control over financial reporting is a process designed under the supervision of our chairman and our Chief Financial Officer to provide reasonable assurance regarding the reliability of financial reporting and the preparation of the company's consolidated financial statements for external reporting purposes in accordance with International Financial Reporting Standards (IFRS). ICOFR includes our disclosure controls and procedures designed to prevent misstatements.

Risks in Financial Reporting

The main risks in financial reporting are that either financial statements do not present a true and fair view due to inadvertent or intentional errors (fraud) or the publication of financial statements is not done on a timely basis. These risks may reduce investor confidence or cause reputational damage and may have legal consequences including banking regulatory interventions. A lack of fair presentation arises when one or more financial statement amounts or disclosures contain misstatements (or omissions) that are material. Misstatements are deemed material if they could, individually or collectively, influence economic decisions that users make on the basis of the financial statements.

To confine those risks of financial reporting, management of the Group has established ICOFR with the aim of providing reasonable but not absolute assurance against material misstatements and conducted an assessment of the effectiveness of the Group's internal control over financial reporting based on the framework established in Internal Control Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). COSO recommends the establishment of specific objectives to facilitate the design and evaluate adequacy of a control system. As a result in establishing ICOFR, management has adopted the following financial statement objectives:

- Existence - assets and liabilities exist and transactions have occurred.
- Completeness - all transactions are recorded, account balances are included in the financial statements.
- Valuation - assets, liabilities and transactions are recorded in the financial reports at the appropriate amounts.
- Rights and Obligations and ownership - rights and obligations are appropriately recorded as assets and liabilities.
- Presentation and disclosures - classification, disclosure and presentation of financial reporting is appropriate.
- Safeguarding of assets - unauthorized acquisition, use or disposition of assets is prevented or detected in a timely manner.

However, any internal control system, including ICOFR, no matter how well conceived and operated, can provide only reasonable, but not absolute assurance that the objectives of that control system are met. As such, disclosure controls and procedures or systems for ICOFR may not prevent all errors and fraud. Also, projections of any evaluation of effectiveness to future periods, are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with policies or procedures may deteriorate. Further, the design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs.

On January 1, 2018, we adopted IFRS 9 and have updated and modified certain internal controls over financial reporting as a result of the new accounting standard.

Controls to Minimize the Risk of Financial Reporting Misstatement

The system of ICOFR includes those policies and procedures that:

- Pertain to the maintenance of records, that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the company's assets;
- Provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of the company's management and;
- Provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use of disposition of the company's assets that could have a material effect on the financial statements.

Measuring Effectiveness of Internal Control

Each year, management of the Group undertakes a formal evaluation of the adequacy and effectiveness of the system of ICOFR. This evaluation incorporates an assessment of the effectiveness of the control environment as well as individual controls which make up the system of ICOFR taking into account:

- The financial misstatement risk of the financial statement line items, considering such factors as materiality and the susceptibility of the particular financial statement item to misstatement.
- The susceptibility of identified controls to failure, considering such factors as the degree of automation, complexity, and risk of management override, competence of personnel and the level of judgment required.

These factors determine in their entirety the type and scope of the evidence required by § 315 HGB, which the management needs to assess whether or not the established ICOFR is effective. The evidence itself is generated from procedures integrated within the daily responsibilities of staff or from procedures implemented specifically for purposes of the ICOFR evaluation. Information from other sources also form an important component of the evaluation since such evidence may either bring additional control issues to the attention of management or may corroborate findings. Such information sources include:

- Reports on audits carried out by or on behalf of regulatory authorities;
- External Auditor reports; and,
- Reports commissioned to evaluate the effectiveness of outsourced processes to third parties.

In addition, Group Audit evaluates the design and operating effectiveness of ICOFR by performing periodic and ad-hoc risk-based audits. Reports are produced summarizing the results from each audit performed which are distributed to the responsible managers for the activities concerned. These reports also provide evidence to support the annual evaluation by management of the overall operating effectiveness of the ICOFR.

As a result of the evaluation, management has concluded that ICOFR is appropriately designed and operating effectively as of December 31, 2018.

The Group's independent auditors, KPMG AG, have issued an unqualified opinion on the effectiveness of the Group's internal control over financial reporting as of December 31, 2018, as stated in their report, which appears herein.

Information pursuant to Section 315a (1) of the German Commercial Code and Explanatory Report

Structure of the Share Capital including Authorized and Conditional Capital

For information regarding Deutsche Bank's share capital please refer to Note 34 "Common Shares" to the Consolidated Financial Statements.

Restrictions on Voting Rights or the Transfer of Shares

Under Section 136 of the German Stock Corporation Act the voting right of the affected shares is excluded by law. As far as the bank held own shares as of December 31, 2018 in its portfolio according to Section 71b of the German Stock Corporation Act no rights could be exercised. We are not aware of any other restrictions on voting rights or the transfer of shares.

Shareholdings which Exceed 10% of the Voting Rights

The German Securities Trading Act (Wertpapierhandelsgesetz) requires that any investor whose share of voting rights reaches, exceeds or falls below certain thresholds as the result of purchases, disposals or otherwise, must notify us and the German Federal Financial Supervisory Authority (BaFin) thereof. The lowest threshold is 3 %. We are not aware of any shareholder holding directly or indirectly 10 % or more of the voting rights.

Shares with Special Control Rights

Shares which confer special control rights have not been issued.

System of Control of any Employee Share Scheme where the Control Rights are not Exercised Directly by the Employees

The employees, who hold Deutsche Bank shares, exercise their control rights as other shareholders in accordance with applicable law and the Articles of Association (Satzung).

Rules Governing the Appointment and Replacement of Members of the Management Board

Pursuant to the German Stock Corporation Act (Section 84) and the Articles of Association of Deutsche Bank (Section 6) the members of the Management Board are appointed by the Supervisory Board. The number of Management Board members is determined by the Supervisory Board. According to the Articles of Association, the Management Board has at least three members. The Supervisory Board may appoint one or two members of the Management Board as Chairpersons of the Management Board. Members of the Management Board may be appointed for a maximum term of up to five years. They may be reappointed or have their term extended for one or more terms of up to a maximum of five years each. The German Co-Determination Act (Mitbestimmungsgesetz; Section 31) requires a majority of at least two thirds of the members of the Supervisory Board to appoint members of the Management Board. If such majority is not achieved, the Mediation Committee shall give, within one month, a recommendation for the appointment to the Management Board. The Supervisory Board will then appoint the members of the Management Board with the majority of its members. If such appointment fails, the Chairperson of the Supervisory Board shall have two votes in a new vote. If a required member of the Management Board has not been appointed, the Local Court (Amtsgericht) in Frankfurt am Main shall, in urgent cases, make the necessary appointments upon motion by any party concerned (Section 85 of the Stock Corporation Act).

Pursuant to the German Banking Act (Kreditwesengesetz) and Regulation (EU) No 468/2014 of the European Central Bank (SSM Framework Regulation) evidence must be provided to the European Central Bank (ECB), the German Federal Financial Supervisory Authority (BaFin) and the Deutsche Bundesbank that the member of the Management Board has adequate theoretical and practical experience of the businesses of the Bank as well as managerial experience before the member is appointed (Sections 24 (1) No. 1 and 25c (1) of the Banking Act, Article 93 of the SSM Framework Regulation).

The Supervisory Board may revoke the appointment of an individual as member of the Management Board or as Chairperson of the Management Board for good cause. Such cause includes in particular a gross breach of duties, the inability to manage the Bank properly or a vote of no-confidence by the shareholders' meeting (Hauptversammlung, referred to as the General Meeting), unless such vote of no-confidence was made for obviously arbitrary reasons.

The ECB or the BaFin may appoint a special representative and transfer to such special representative the responsibility and powers of individual members of the Management Board if such members are not trustworthy or do not have the required competencies or if the credit institution does not have the required number of Management Board members. In any such case, the responsibility and powers of the Management Board members concerned are suspended (Section 45c (1) through (3) of the Banking Act, Article 93 (2) of the SSM Framework Regulation).

If the discharge of a bank's obligations to its creditors is endangered or if there are valid concerns that effective supervision of the bank is not possible, the BaFin may take temporary measures to avert that risk. It may also prohibit members of the Management Board from carrying out their activities or impose limitations on such activities (Section 46 (1) of the Banking Act). In such case, the Local Court Frankfurt am Main shall, at the request of the BaFin appoint the necessary members of the Management Board, if, as a result of such prohibition, the Management Board no longer has the necessary number of members in order to conduct the business (Section 46 (2) of the Banking Act).

Rules Governing the Amendment of the Articles of Association

Any amendment of the Articles of Association requires a resolution of the General Meeting (Section 179 of the Stock Corporation Act). The authority to amend the Articles of Association in so far as such amendments merely relate to the wording, such as changes of the share capital as a result of the issuance of authorized capital, has been assigned to the Supervisory Board by the Articles of Association of Deutsche Bank (Section 20 (3)). Pursuant to the Articles of Association, the resolutions of the General Meeting are taken by a simple majority of votes and, in so far as a majority of capital stock is required, by a simple majority of capital stock, except where law or the Articles of Association determine otherwise (Section 20 (1)). Amendments to the Articles of Association become effective upon their entry in the Commercial Register (Section 181 (3) of the Stock Corporation Act).

Powers of the Management Board to Issue or Buy Back Shares

The Annual General Meeting of May 18, 2017 authorized the Management Board pursuant to Section 71 (1) No. 7 of the Stock Corporation Act to buy and sell, for the purpose of securities trading, own shares of Deutsche Bank AG on or before April 30, 2022, at prices which do not exceed or fall short by more than 10 % of the average of the share prices (closing auction prices of the Deutsche Bank share in Xetra trading and/or in a comparable successor system on the Frankfurt Stock Exchange) on the respective three preceding stock exchange trading days. In this context, the shares acquired for this purpose may not, at the end of any day, exceed 5 % of the share capital of Deutsche Bank AG.

The Annual General Meeting of May 24, 2018 authorized the Management Board pursuant to Section 71 (1) No. 8 of the Stock Corporation Act to buy, on or before April 30, 2023, own shares of Deutsche Bank AG in a total volume of up to 10 % of the share capital at the time the resolution was taken or – if the value is lower – of the share capital at the time this authorization is exercised. Together with own shares acquired for trading purposes and/or for other reasons and which are from time to time in the company's possession or attributable to the company pursuant to Sections 71a et seq. of the Stock Corporation Act, the own shares purchased on the basis of this authorization may not at any time exceed 10 % of the company's respectively applicable share capital. The own shares may be bought through the stock exchange or by means of a public purchase offer to all shareholders. The countervalue for the purchase of shares (excluding ancillary purchase costs) through the stock exchange may not be more than 10 % higher or more than 20 % lower than the average of the share prices (closing auction prices of the Deutsche Bank share in Xetra trading and/or in a comparable successor system on the Frankfurt Stock Exchange) on the last three stock exchange trading days before the obligation to purchase. In the case of a public purchase offer, it may not be more than 10 % higher or more than 20 % lower than the average of the share prices (closing auction prices of the Deutsche Bank share in Xetra trading and/or in a comparable successor system on the Frankfurt Stock Exchange) on the last three stock exchange trading days before the day of publication of the offer. If the volume of shares offered in a public purchase offer exceeds the planned buyback volume, acceptance must be in proportion to the shares offered in each case. The preferred acceptance of small quantities of up to 50 of the company's shares offered for purchase per shareholder may be provided for.

The Management Board has also been authorized to dispose of the purchased shares and of any shares purchased on the basis of previous authorizations pursuant to Section 71 (1) No. 8 of the Stock Corporation Act on the stock exchange or by an offer to all shareholders. The Management Board has been authorized to dispose of the purchased shares against contribution-in kind and with the exclusion of shareholders' pre-emptive rights for the purpose of acquiring companies or shareholdings in companies or other assets that serve the company's business operations. In addition, the Management Board has been authorized, in case it disposes of such own shares by offer to all shareholders, to grant to the holders of the option rights, convertible bonds and convertible participatory rights issued by the company and its affiliated companies pre-emptive rights to the shares to the extent that they would be entitled to such rights if they exercised their option and/or conversion rights. Shareholders' pre-emptive rights are excluded for these cases and to this extent.

The Management Board has also been authorized to use shares purchased on the basis of authorizations pursuant to § 71 (1) No. 8 Stock Corporation Act to issue staff shares, with the exclusion of shareholders' pre-emptive rights, to employees and retired employees of the company and its affiliated companies or to use them to service option rights on shares of the company and/or rights or duties to purchase shares of the company granted to employees or members of executive or non-executive management bodies of the company and of affiliated companies.

Furthermore, the Management Board has been authorized, with the exclusion of shareholders' pre-emptive rights, to sell such own shares to third parties against cash payment if the purchase price is not substantially lower than the price of the shares on the stock exchange at the time of sale. Use may only be made of this authorization if it has been ensured that the number of shares sold on the basis of this authorization does not exceed 10 % of the company's share capital at the time this authorization becomes effective or – if the amount is lower – at the time this authorization is exercised. Shares that are issued or sold during the validity of this authorization with the exclusion of pre-emptive rights, in direct or analogous application of Section 186 (3) sentence 4 Stock Corporation Act, are to be included in the maximum limit of 10 % of the share capital. Also to be included are shares that are to be issued to service option and/or conversion rights from convertible bonds, bonds with warrants, convertible participatory rights or participatory rights, if these bond or participatory rights are issued during the validity of this authorization with the exclusion of pre-emptive rights in corresponding application of Section 186 (3) sentence 4 Stock Corporation Act.

The Management Board has also been authorized to cancel shares acquired on the basis of this or a preceding authorization without the execution of this cancellation process requiring a further resolution by the General Meeting.

The Annual General Meeting of May 24, 2018 authorized the Management Board pursuant to Section 71 (1) No. 8 of the Stock Corporation Act to execute the purchase of shares under the resolved authorization also with the use of put and call options or forward purchase contracts. The company may accordingly sell to third parties put options based on physical delivery and buy call options from third parties if it is ensured by the option conditions that these options are fulfilled only with shares which themselves were acquired subject to compliance with the principle of equal treatment. All share purchases based on put or call options are limited to shares in a maximum volume of 5 % of the actual share capital at the time of the resolution by the General Meeting on this authorization. The term of the options must be selected such that the share purchase upon exercising the option is carried out at the latest on April 30, 2023.

The purchase price to be paid for the shares upon exercise of the put options or upon the maturity of the forward purchase may not exceed more than 10 % or fall below 10 % of the average of the share prices (closing auction prices of the Deutsche Bank share in Xetra trading and/or in a comparable successor system on the Frankfurt Stock Exchange) on the last three stock exchange trading days before conclusion of the respective transaction in each case excluding ancillary purchase costs but taking into account the option premium received. The call options may only be exercised if the purchase price to be paid does not exceed by more than 10 % or fall below 10 % of the average of the share prices (closing auction prices of the Deutsche Bank share in Xetra trading and/or in a comparable successor system on the Frankfurt Stock Exchange) on the last three stock exchange trading days before the acquisition of the shares.

To the sale and cancellation of shares acquired with the use of derivatives the general rules established by the General Meeting apply.

Own shares may continue to be purchased using existing derivatives that were agreed on the basis and during the existence of previous authorizations.

Significant Agreements which Take Effect, Alter or Terminate upon a Change of Control of the Company Following a Takeover Bid

Significant agreements which take effect, alter or terminate upon a change of control of the company following a takeover bid have not been entered into.

Agreements for Compensation in Case of a Takeover Bid

If a member of the Management Board leaves the bank within the scope of a change of control, she or he receives a one-off compensation payment described in greater detail in the Compensation Report.

Corporate Governance Statement pursuant to Sections 289f and 315d of the German Commercial Code

The entire Corporate Governance Statement according to sections 289f and 315d of the German Commercial Code is available on our website under https://www.db.com/ir/en/reports.htm as well as in the chapter “3 – Corporate Governance Statement according to Sections 289f, 315d of the German Commercial Code / Corporate Governance Report”.

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Consolidated Statement of Income

in € m.	Notes	2018	2017	2016
Interest and similar income[1]	5	24,793	23,542	25,143
Interest expense	5	11,601	11,164	10,436
Net interest income	5	**13,192**	12,378	14,707
Provision for credit losses	21	525	525	1,383
Net interest income after provision for credit losses		**12,667**	11,853	13,324
Commissions and fee income	6	10,039	11,002	11,744
Net gains (losses) on financial assets/liabilities at fair value through profit or loss	5	1,332	2,926	1,401
Net gains (losses) on financial assets at amortized cost		2	N/A	N/A
Net gains (losses) on financial assets at fair value through other comprehensive income		317	N/A	N/A
Net gains (losses) on financial assets available for sale	7	N/A	479	653
Net income (loss) from equity method investments	18	219	137	455
Other income (loss)	8	215	(475)	1,053
Total noninterest income		**12,124**	14,070	15,307
Compensation and benefits	35	11,814	12,253	11,874
General and administrative expenses	9	11,286	11,973	15,454
Policyholder benefits and claims		0	0	374
Impairment of goodwill and other intangible assets	25	0	21	1,256
Restructuring activities	10	360	447	484
Total noninterest expenses		**23,461**	24,695	29,442
Income (loss) before income taxes		**1,330**	1,228	(810)
Income tax expense (benefit)	36	989	1,963	546
Net income (loss)		**341**	(735)	(1,356)
Net income (loss) attributable to noncontrolling interests		75	15	45
Net income (loss) attributable to Deutsche Bank shareholders and additional equity components		267	(751)	(1,402)

[1] Interest and similar income included € 16.8 billion for the year ended December 31, 2018 calculated based on effective interest method.

Earnings per Share

in € m.	Notes	2018	2017	2016
Earnings per share:[1,2]	11			
Basic		(€ 0.01)	(€ 0.53)	(€ 1.08)
Diluted		(€ 0.01)	(€ 0.53)	(€ 1.08)
Number of shares in million:[1]				
Denominator for basic earnings per share – weighted-average shares outstanding		2,102.2	1,967.7	1,555.3
Denominator for diluted earnings per share – adjusted weighted-average shares after assumed conversions[3]		2,102.2	1,967.7	1,555.3

[1] The number of average basic and diluted shares outstanding has been adjusted for all periods before April 2017 in order to reflect the effect of the bonus component of subscription rights issued in April 2017 in connection with the capital increase.
[2] Earnings were adjusted by € 292 and € 298 and € 276 million net of tax for the coupons paid on Additional Tier 1 Notes in April 2018, April 2017 and April 2016. In accordance with IAS 33 the coupons paid on Additional Tier 1 Notes are not attributable to Deutsche Bank shareholders and therefore need to be deducted in the calculation. This adjustment created a net loss situation for Earnings per Common Share for 2018.
[3] Due to the net loss situation for 2018, 2017 and 2016 potentially dilutive shares are generally not considered for the earnings per share calculation, because to do so would decrease the net loss per share. Under a net income situation however, the number of adjusted weighted average shares after assumed conversion would have been increased by 53 million shares for 2018, 62 million shares for 2017 and 27 million shares for 2016.

The accompanying notes are an integral part of the Consolidated Financial Statements.

Consolidated Statement of Comprehensive Income

in € m.	2018	2017	2016
Net income (loss) recognized in the income statement	**341**	(735)	(1,356)
Other comprehensive income			
Items that will not be reclassified to profit or loss			
Remeasurement gains (losses) related to defined benefit plans, before tax	(216)	(69)	(861)
Net fair value gains (losses) attributable to credit risk related to financial liabilities designated as at fair value through profit or loss, before tax	52	N/A	N/A
Total of income tax related to items that will not be reclassified to profit or loss	10	(23)	344
Items that are or may be reclassified to profit or loss			
Financial assets available for sale			
Unrealized net gains (losses) arising during the period, before tax	N/A	197	(2)
Realized net (gains) losses arising during the period (reclassified to profit or loss), before tax	N/A	(523)	(571)
Financial assets at fair value through other comprehensive income			
Unrealized net gains (losses) arising during the period, before tax	(245)	N/A	N/A
Realized net (gains) losses arising during the period (reclassified to profit or loss), before tax	(317)	N/A	N/A
Derivatives hedging variability of cash flows			
Unrealized net gains (losses) arising during the period, before tax	(3)	(34)	62
Realized net (gains) losses arising during the period (reclassified to profit or loss), before tax	0	(137)	(2)
Assets classified as held for sale			
Unrealized net gains (losses) arising during the period, before tax	2	(162)	529
Realized net (gains) losses arising during the period (reclassified to profit or loss), before tax	(2)	162	(1,191)
Foreign currency translation			
Unrealized net gains (losses) arising during the period, before tax	457	(2,699)	203
Realized net (gains) losses arising during the period (reclassified to profit or loss), before tax	0	20	(2)
Equity Method Investments			
Net gains (losses) arising during the period	(10)	(36)	11
Total of income tax related to items that are or may be reclassified to profit or loss	228	146	117
Other comprehensive income (loss), net of tax	**(43)**	(3,157)	(1,364)
Total comprehensive income (loss), net of tax	**298**	(3,892)	(2,721)
Attributable to:			
Noncontrolling interests	116	(20)	52
Deutsche Bank shareholders and additional equity components	182	(3,872)	(2,773)

The accompanying notes are an integral part of the Consolidated Financial Statements.

Consolidated Balance Sheet

in € m.	Notes	Dec 31, 2018	Dec 31, 2017
Assets:			
Cash and central bank balances		188,731	225,655
Interbank balances (w/o central banks)		8,881	9,265
Central bank funds sold and securities purchased under resale agreements	22	8,222	9,971
Securities borrowed	22	3,396	16,732
Financial assets at fair value through profit or loss			
Trading assets		152,738	184,661
Positive market values from derivative financial instruments		320,058	361,032
Non-trading financial assets mandatory at fair value through profit and loss		100,444	N/A
Financial assets designated at fair value through profit or loss		104	91,276
Total financial assets at fair value through profit or loss	12, 13, 22, 37	573,344	636,970
Financial assets at fair value through other comprehensive income	16	51,182	N/A
Financial assets available for sale	15, 22	N/A	49,397
Equity method investments	18	879	866
Loans at amortized cost	20, 21, 22	400,297	401,699
Securities held to maturity	17	N/A	3,170
Property and equipment	23	2,421	2,663
Goodwill and other intangible assets	25	9,141	8,839
Other assets	26, 27	93,444	101,491
Assets for current tax	36	970	1,215
Deferred tax assets	36	7,230	6,799
Total assets		**1,348,137**	1,474,732
Liabilities and equity:			
Deposits	28	564,405	581,873
Central bank funds purchased and securities sold under repurchase agreements	22	4,867	18,105
Securities loaned	22	3,359	6,688
Financial liabilities at fair value through profit or loss			
Trading liabilities		59,924	71,462
Negative market values from derivative financial instruments		301,487	342,726
Financial liabilities designated at fair value through profit or loss		53,757	63,874
Investment contract liabilities		512	574
Total financial liabilities at fair value through profit or loss	12, 13, 37	415,680	478,636
Other short-term borrowings	31	14,158	18,411
Other liabilities	26, 27	117,513	132,208
Provisions	21, 29	2,711	4,158
Liabilities for current tax	36	944	1,001
Deferred tax liabilities	36	512	346
Long-term debt	32	152,083	159,715
Trust preferred securities	32	3,168	5,491
Obligation to purchase common shares		0	0
Total liabilities		**1,279,400**	1,406,633
Common shares, no par value, nominal value of € 2.56	34	5,291	5,291
Additional paid-in capital		40,252	39,918
Retained earnings		16,714	17,454
Common shares in treasury, at cost	34	(15)	(9)
Equity classified as obligation to purchase common shares		0	0
Accumulated other comprehensive income (loss), net of tax		253	520
Total shareholders' equity		**62,495**	63,174
Additional equity components		4,675	4,675
Noncontrolling interests		1,568	250
Total equity		**68,737**	68,099
Total liabilities and equity		**1,348,137**	1,474,732

The accompanying notes are an integral part of the Consolidated Financial Statements.

Consolidated Statement of Changes in Equity

in € m.	Common shares (no par value)	Additional paid-in capital	Retained earnings	Common shares in treasury, at cost
Balance as of December 31, 2017 (IAS 39)	5,291	39,918	17,454	(9)
IFRS 9 Introduction Impact	0	(2)	(301)	0
Balance as of January 1, 2018 (IFRS 9)	**5,291**	**39,916**	**17,153**	**(9)**
Total comprehensive income (loss), net of tax[1]	0	0	267	0
Gains (losses) attributable to equity instruments designated as at fair value through other comprehensive income, net of tax	0	0	0	0
Gains (losses) upon early extinguishment attributable to change in own credit risk of financial liabilities designated as at fair value through profit and loss, net of tax	0	0	0	0
Common shares issued	0	0	0	0
Cash dividends paid	0	0	(227)	0
Coupon on additional equity components, net of tax	0	0	(292)	0
Remeasurement gains (losses) related to defined benefit plans, net of tax	0	0	(186)	0
Net change in share awards in the reporting period	0	90	0	0
Treasury shares distributed under share-based compensation plans	0	0	0	199
Tax benefits related to share-based compensation plans	0	(5)	0	0
Option premiums and other effects from options on common shares	0	0	0	0
Purchases of treasury shares	0	0	0	(4,119)
Sale of treasury shares	0	0	0	3,914
Net gains (losses) on treasury shares sold	0	(2)	0	0
Other	0	253[2]	0	0
Balance as of December 31, 2018	**5,291**	**40,252**	**16,714**	**(15)**

[1] Excluding remeasurement gains (losses) related to defined benefit plans, net of tax.
[2] Includes the impact from the initial public offering of DWS Group GmbH & Co. KGaA.

	Unrealized net gains (losses)							
in € m.	On financial assets available for sale, net of tax[2]	On financial assets at fair value through other comprehensive income, net of tax[2]	Attributable to change in own credit risk of financial liabilities designated as at fair value through profit and loss, net of tax[2]	On derivatives hedging variability of cash flows, net of tax[2]	On assets classified as held for sale, net of tax[2]	Foreign currency translation, net of tax[2]	Unrealized net gains (losses) from equity method investments	Accumulated other comprehensive income, net of tax[1]
Balance as of December 31, 2017 (IAS 39)	689	0	0	18	0	(227)	40	520
IFRS 9 Introduction Impact	(689)	394	(16)	0	0	(45)	(12)	(368)
Balance as of January 1, 2018 (IFRS 9)	**0**	**394**	**(16)**	**18**	**0**	**(272)**	**28**	**152**
Total comprehensive income (loss), net of tax[1]	0	(428)	44	(1)	0	500	(14)	101
Gains (losses) attributable to equity instruments designated as at fair value through other comprehensive income, net of tax	0	0	0	0	0	0	0	0
Gains (losses) upon early extinguishment attributable to change in own credit risk of financial liabilities designated as at fair value through profit and loss, net of tax	0	0	0	0	0	0	0	0
Common shares issued	0	0	0	0	0	0	0	0
Cash dividends paid	0	0	0	0	0	0	0	0
Coupon on additional equity components, net of tax	0	0	0	0	0	0	0	0
Remeasurement gains (losses) related to defined benefit plans, net of tax	0	0	0	0	0	0	0	0
Net change in share awards in the reporting period	0	0	0	0	0	0	0	0
Treasury shares distributed under share-based compensation plans	0	0	0	0	0	0	0	0
Tax benefits related to share-based compensation plans	0	0	0	0	0	0	0	0
Option premiums and other effects from options on common shares	0	0	0	0	0	0	0	0
Purchases of treasury shares	0	0	0	0	0	0	0	0
Sale of treasury shares	0	0	0	0	0	0	0	0
Net gains (losses) on treasury shares sold	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0
Balance as of December 31, 2018	**0**	**(34)**	**28**	**17**	**0**	**228**	**15**	**253**

[1] Excluding remeasurement gains (losses) related to defined benefit plans, net of tax.
[2] Excluding unrealized net gains (losses) from equity method investments.

in € m.	Total shareholders' equity	Additional equity components[2]	Noncontrolling interests	Total equity
Balance as of December 31, 2017 (IAS 39)	**63,174**	4,675	250	**68,099**
IFRS 9 Introduction Impact	(671)	0	(1)	(672)
Balance as of January 1, 2018 (IFRS 9)	**62,503**	4,675	249	**67,427**
Total comprehensive income (loss), net of tax[1]	368	0	122	490
Gains (losses) attributable to equity instruments designated as at fair value through other comprehensive income, net of tax	0	0	0	0
Gains (losses) upon early extinguishment attributable to change in own credit risk of financial liabilities designated as at fair value through profit and loss, net of tax	0	0	0	0
Common shares issued	0	0	0	0
Cash dividends paid	(227)	0	(8)	(235)
Coupon on additional equity components, net of tax	(292)	0	0	(292)
Remeasurement gains (losses) related to defined benefit plans, net of tax	(186)	0	(12)	(198)
Net change in share awards in the reporting period	90	0	23	112
Treasury shares distributed under share-based compensation plans	199	0	0	199
Tax benefits related to share-based compensation plans	(5)	0	1	(4)
Option premiums and other effects from options on common shares	0	0	0	0
Purchases of treasury shares	(4,119)	0	0	(4,119)
Sale of treasury shares	3,914	0	0	3,914
Net gains (losses) on treasury shares sold	(2)	0	0	(2)
Other	253	0	1,193[3]	1,446
Balance as of December 31, 2018	**62,495**	4,675	1,568	**68,737**

[1] Excluding remeasurement gains (losses) related to defined benefit plans, net of tax.
[2] Includes Additional Tier 1 Notes, which constitute unsecured and subordinated notes of Deutsche Bank and are classified as equity in accordance with IFRS.
[3] Includes the impact from the initial public offering of DWS Group GmbH & Co. KGaA.

in € m.	Common shares (no par value)	Additional paid-in capital	Retained earnings	Common shares in treasury, at cost
Balance as of December 31, 2015	3,531	33,572	21,182	(10)
Total comprehensive income (loss), net of tax[1]	0	0	(1,402)	0
Common shares issued	0	0	0	0
Cash dividends paid	0	0	0	0
Coupon on additional equity components, net of tax	0	0	(276)	0
Remeasurement gains (losses) related to defined benefit plans, net of tax	0	0	(517)	0
Net change in share awards in the reporting period	0	64	0	0
Treasury shares distributed under share-based compensation plans	0	0	0	239
Tax benefits related to share-based compensation plans	0	2	0	0
Option premiums and other effects from options on common shares	0	(129)	0	0
Purchases of treasury shares	0	0	0	(5,264)
Sale of treasury shares	0	0	0	5,035
Net gains (losses) on treasury shares sold	0	(7)	0	0
Other	0	263	0	0
Balance as of December 31, 2016	3,531	33,765	18,987	0
Total comprehensive income (loss), net of tax[1]	0	0	(751)	0
Common shares issued	1,760	6,277	0	0
Cash dividends paid	0	0	(392)	0
Coupon on additional equity components, net of tax	0	0	(298)	0
Remeasurement gains (losses) related to defined benefit plans, net of tax	0	0	(91)	0
Net change in share awards in the reporting period	0	(51)	0	0
Treasury shares distributed under share-based compensation plans	0	0	0	424
Tax benefits related to share-based compensation plans	0	3	0	0
Option premiums and other effects from options on common shares	0	(104)	0	0
Purchases of treasury shares	0	0	0	(7,912)
Sale of treasury shares	0	0	0	7,479
Net gains (losses) on treasury shares sold	0	6	0	0
Other	0	22	0	0
Balance as of December 31, 2017	5,291	39,918	17,454	(9)

[1] Excluding remeasurement gains (losses) related to defined benefit plans, net of tax.

	Unrealized net gains (losses)							
in € m.	On financial assets available for sale, net of tax[2]	On financial assets at fair value through other comprehensive income, net of tax[2]	Attributable to change in own credit risk of financial liabilities designated as at fair value through profit and loss, net of tax[2]	On derivatives hedging variability of cash flows, net of tax[2]	On assets classified as held for sale, net of tax[2]	Foreign currency translation, net of tax[2]	Unrealized net gains (losses) from equity method investments	Accumulated other comprehensive income, net of tax[1]
Balance as of December 31, 2015	**1,384**	**0**	**0**	**97**	**662**	**2,196**	**66**	**4,404**
Total comprehensive income (loss), net of tax[1]	(472)	0	0	46	(662)	223	11	(854)
Common shares issued	0	0	0	0	0	0	0	0
Cash dividends paid	0	0	0	0	0	0	0	0
Coupon on additional equity components, net of tax	0	0	0	0	0	0	0	0
Remeasurement gains (losses) related to defined benefit plans, net of tax	0	0	0	0	0	0	0	0
Net change in share awards in the reporting period	0	0	0	0	0	0	0	0
Treasury shares distributed under share-based compensation plans	0	0	0	0	0	0	0	0
Tax benefits related to share-based compensation plans	0	0	0	0	0	0	0	0
Option premiums and other effects from options on common shares	0	0	0	0	0	0	0	0
Purchases of treasury shares	0	0	0	0	0	0	0	0
Sale of treasury shares	0	0	0	0	0	0	0	0
Net gains (losses) on treasury shares sold	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0
Balance as of December 31, 2016	**912**	**0**	**0**	**143**	**0**	**2,418**	**77**	**3,550**
Total comprehensive income (loss), net of tax[1]	(223)	0	0	(125)	0	(2,646)	(36)	(3,030)
Common shares issued	0	0	0	0	0	0	0	0
Cash dividends paid	0	0	0	0	0	0	0	0
Coupon on additional equity components, net of tax	0	0	0	0	0	0	0	0
Remeasurement gains (losses) related to defined benefit plans, net of tax	0	0	0	0	0	0	0	0
Net change in share awards in the reporting period	0	0	0	0	0	0	0	0
Treasury shares distributed under share-based compensation plans	0	0	0	0	0	0	0	0
Tax benefits related to share-based compensation plans	0	0	0	0	0	0	0	0
Option premiums and other effects from options on common shares	0	0	0	0	0	0	0	0
Purchases of treasury shares	0	0	0	0	0	0	0	0
Sale of treasury shares	0	0	0	0	0	0	0	0
Net gains (losses) on treasury shares sold	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0
Balance as of December 31, 2017	**689**	**0**	**0**	**18**	**0**	**(227)**	**40**	**520**

[1] Excluding remeasurement gains (losses) related to defined benefit plans, net of tax.
[2] Excluding unrealized net gains (losses) from equity method investments.

in € m.	Total shareholders' equity	Additional equity components[2]	Noncontrolling interests	Total equity
Balance as of December 31, 2015	**62,678**	4,675	270	**67,624**
Total comprehensive income (loss), net of tax[1]	(2,256)	0	52	(2,204)
Common shares issued	0	0	0	0
Cash dividends paid	0	0	(11)	(11)
Coupon on additional equity components, net of tax	(276)	0	0	(276)
Remeasurement gains (losses) related to defined benefit plans, net of tax	(517)	0	0	(517)
Net change in share awards in the reporting period	64	0	0	64
Treasury shares distributed under share-based compensation plans	239	0	0	239
Tax benefits related to share-based compensation plans	2	0	0	2
Option premiums and other effects from options on common shares	(129)	0	0	(129)
Purchases of treasury shares	(5,264)	0	0	(5,264)
Sale of treasury shares	5,035	0	0	5,035
Net gains (losses) on treasury shares sold	(7)	0	0	(7)
Other	263	(6)[3]	4	262
Balance as of December 31, 2016	**59,833**	4,669	316	**64,819**
Total comprehensive income (loss), net of tax[1]	(3,781)	0	(20)	(3,800)
Common shares issued	8,037	0	0	8,037
Cash dividends paid	(392)	0	(11)	(403)
Coupon on additional equity components, net of tax	(298)	0	0	(298)
Remeasurement gains (losses) related to defined benefit plans, net of tax	(91)	0	0	(91)
Net change in share awards in the reporting period	(51)	0	0	(51)
Treasury shares distributed under share-based compensation plans	424	0	0	424
Tax benefits related to share-based compensation plans	3	0	0	3
Option premiums and other effects from options on common shares	(104)	0	0	(104)
Purchases of treasury shares	(7,912)	0	0	(7,912)
Sale of treasury shares	7,479	0	0	7,479
Net gains (losses) on treasury shares sold	6	0	0	6
Other	22	6[3]	(36)	(9)
Balance as of December 31, 2017	**63,174**	4,675	250	**68,099**

[1] Excluding remeasurement gains (losses) related to defined benefit plans, net of tax.
[2] Includes Additional Tier 1 Notes, which constitute unsecured and subordinated notes of Deutsche Bank and are classified as equity in accordance with IFRS.
[3] Includes net proceeds from purchase and sale of Additional Equity Components.

Consolidated Statement of Cash Flows

in € m.	2018	2017	2016
Net Income (loss)	**341**	(735)	(1,356)
Cash flows from operating activities:			
Adjustments to reconcile net income to net cash provided by (used in) operating activities:			
Provision for credit losses	525	525	1,383
Restructuring activities	360	447	484
Gain on sale of financial assets available for sale and securities held to maturity	N/A	(516)	(695)
Gain on sale of financial assets at fair value through other comprehensive income, equity method investments and other	(619)	(59)	(203)
Deferred income taxes, net	276	1,234	(312)
Impairment, depreciation and other amortization, and accretion	2,391	2,159	3,745
Share of net income from equity method investments	(129)	(141)	(183)
Income (loss) adjusted for non-cash charges, credits and other items	**3,145**	2,914	2,862
Adjustments for net change in operating assets and liabilities:			
Interest-earning time deposits with central banks and banks	(10,954)	966	(2,814)
Central bank funds sold, securities purchased under resale agreements, securities borrowed	15,004	8,560	19,440
Non-Trading financial assets mandatory at fair value through profit and loss	(98,560)	N/A	N/A
Financial assets designated at fair value through profit or loss	91,176	(6,721)	20,337
Loans at amortized cost	302	2,759	18,190
Other assets	6,284	21,970	(7,847)
Deposits	(16,763)	34,601	(15,237)
Financial liabilities designated at fair value through profit or loss and investment contract liabilities[1]	(10,549)	5,461	8,686
Central bank funds purchased, securities sold under repurchase agreements, securities loaned	(16,716)	(3,355)	16,362
Other short-term borrowings	(4,266)	1,148	(10,632)
Other liabilities	(19,119)	(23,107)	(12,888)
Senior long-term debt[2]	(6,840)	(12,728)	12,328
Trading assets and liabilities, positive and negative market values from derivative financial instruments, net	20,542	1,596	30,341
Other, net	(6,752)	5,512	(8,518)
Net cash provided by (used in) operating activities	**(54,066)**	39,576	70,610
Cash flows from investing activities:			
Proceeds from:			
Sale of financial assets at fair value through other comprehensive income	22,126	N/A	N/A
Maturities of financial assets at fair value through other comprehensive income	26,001	N/A	N/A
Sale of debt securities held to collect at amortized cost	94	N/A	N/A
Maturities of debt securities held to collect at amortized cost	1,904	N/A	N/A
Sale of financial assets available for sale	N/A	10,657	26,855
Maturities of financial assets available for sale	N/A	6,798	6,029
Maturities of securities held to maturity	N/A	0	0
Sale of equity method investments	30	80	50
Sale of property and equipment	356	113	206
Purchase of:			
Financial assets at fair value through other comprehensive income	(41,031)	N/A	N/A
Debt Securities held to collect at amortized cost	(309)	N/A	N/A
Financial assets available for sale	N/A	(13,472)	(21,639)
Securities held to maturity	N/A	0	0
Equity method investments	(1)	(12)	(81)
Property and equipment	(465)	(485)	(725)
Net cash received in (paid for) business combinations/divestitures	114	82	2,023
Other, net	(1,291)	(1,328)	(1,479)
Net cash provided by (used in) investing activities	**7,528**	2,433	11,239

in € m.	2018	2017	2016
Cash flows from financing activities:			
Issuances of subordinated long-term debt	68[3]	881	815
Repayments and extinguishments of subordinated long-term debt	(1,171)[3]	(176)	(1,102)
Issuances of trust preferred securities	4[4]	266	121
Repayments and extinguishments of trust preferred securities	(2,733)[4]	(666)	(840)
Common shares issued	0	8,037	0
Purchases of treasury shares	(4,119)	(7,912)	(5,264)
Sale of treasury shares	3,912	7,471	4,983
Additional Equity Components (AT1) issued	0	0	0
Purchases of Additional Equity Components (AT1)	(236)	(205)	(207)
Sale of Additional Equity Components (AT1)	234	217	202
Coupon on additional equity components, pre tax	(315)	(335)	(333)
Dividends paid to noncontrolling interests	(8)	(11)	(11)
Net change in noncontrolling interests	1,205	(37)	(13)
Cash dividends paid to Deutsche Bank shareholders	(227)	(392)	0
Other, net	52	0	0
Net cash provided by (used in) financing activities	**(3,334)**	7,138	(1,649)
Net effect of exchange rate changes on cash and cash equivalents	**1,668**	(5,772)	(28)
Net increase (decrease) in cash and cash equivalents	(48,203)	43,376	80,172
Cash and cash equivalents at beginning of period	229,025	185,649	105,478
Cash and cash equivalents at end of period	180,822	229,025	185,649
Net cash provided by (used in) operating activities include			
Income taxes paid (received), net	468	689	1,572
Interest paid	11,743	11,784	10,808
Interest received	22,408	21,095	22,579
Dividends received	2,186	3,006	3,256
Cash and cash equivalents comprise			
Cash and central bank balances (not included: Interest-earning time deposits with central banks)	174,059	222,451	178,105
Interbank balances (w/o central banks) (not included: time deposits with banks of € 16.8 billion as of December 31, 2018, € 5.9 billion as of December 31, 2017 and € 7.1 billion as of December 31, 2016)	6,763	6,574	7,544
Total	**180,822**	229,025	185,649

[1] Included are senior long-term debt issuances of € 5.3 billion and € 5.0 billion and repayments and extinguishments of € 5.2 billion and € 4.6 billion through December 31, 2018 and December 31, 2017, respectively.
[2] Included are issuances of € 27.4 billion and € 33.4 billion and repayments and extinguishments of € 32.8 billion and € 41.3 billion through December 31, 2018 and December 31, 2017, respectively.
[3] Non-cash changes for Subordinated Long Term Debt are € 148 million in total and driven by FX movements € 162 million and FV changes of € (39) million.
[4] Non-cash changes for Trust Preferred Securities are € 407 million in total and driven by FV changes of € 178 million and FX movements of € 168 million.

The accompanying notes are an integral part of the Consolidated Financial Statements.

Notes to the Consolidated Financial Statements

01 – Significant Accounting Policies and Critical Accounting Estimates

Basis of Accounting

Deutsche Bank Aktiengesellschaft ("Deutsche Bank" or the "Parent") is a stock corporation organized under the laws of the Federal Republic of Germany. Deutsche Bank together with all entities in which Deutsche Bank has a controlling financial interest (the "Group") is a global provider of a full range of corporate and investment banking, private clients and asset management products and services.

The accompanying consolidated financial statements are stated in euros, the presentation currency of the Group. All financial information presented in million euros has been rounded to the nearest million. The consolidated financial statements have been prepared in accordance with International Financial Reporting Standards ("IFRS") as issued by the International Accounting Standards Board ("IASB") and endorsed by the European Union ("EU"). The Group's application of IFRS results in no differences between IFRS as issued by the IASB and IFRS as endorsed by the EU.

Disclosures about the nature and the extent of risks arising from financial instruments as required by IFRS 7, "Financial Instruments: Disclosures" are set forth in the Risk Report section of the Management Report and are an integral part of the Consolidated Financial Statements. These audited disclosures are identified by bracketing in the margins of the Risk Report.

Discount Rate for Defined Benefit Pension Plans

In 2017 the Group moved to a more standardized, simpler approach to set its discount rate used to value its defined benefit plans in the Eurozone; similar approaches are generally accepted and are already used for the Group's other major pension plans in the United Kingdom and the United States. The refinement resulted in no change in the discount rate and so no effect on the Group's Consolidated Statement of Comprehensive Income in 2017.

Adjustment of Impairment Methodology for Shipping Loans

In the third quarter of 2017, the Group has adjusted the parameters for shipping loans being assessed for impairment under a going concern or gone concern scenario. This change in parameters resulted in a change in the estimated impairment charge of € 70 million increase. The Group also revised its general haircut applied to shipping loans with gone concern exposures, which also resulted in a change in estimate of € 36 million additional impairment. These changes in estimates are reflected in the allowance for credit losses.

Home Savings Contracts

In the second quarter of 2018, the Group changed its accounting policy for the obligations related to interest bonuses on home savings contracts. Such bonuses are typically paid to depositors who abstain from entering into a mortgage loan when qualifying for utilization and decide to terminate the contract and receive repayment of the deposit amount plus accrued interest and bonus coupon. Previously, the Group accounted for the obligation to pay an interest bonus as a provision under IAS 37. Developments in market practice resulted in the Group analyzing its accounting policy and deciding to account for the home savings deposit, in its entirety, in accordance with IFRS 9 as it provides more reliable and relevant information about the product. The change in accounting policy resulted in a reclassification of € 1.1 billion and € 1.1 billion from Provisions to Deposits in the Group's consolidated balance sheet as of June 30, 2018 and December 31, 2017, respectively. The re-measurement of the obligations related to interest bonuses under IFRS 9 compared to IAS 37 resulted in an immaterial effect on the Group's Consolidated Statement of Comprehensive Income and the Group's total shareholders' equity in the current and all comparative periods, and therefore they were not adjusted.

Critical Accounting Estimates

The preparation of financial statements under IFRS requires management to make estimates and assumptions for certain categories of assets and liabilities. These estimates and assumptions affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the balance sheet date, and the reported amounts of revenue and expenses during the reporting period. Actual results could differ from management's estimates. The Group's significant accounting policies are described in "Significant Accounting Policies".

Certain of the Group's accounting policies require critical accounting estimates that involve complex and subjective judgments and the use of assumptions, some of which may be for matters that are inherently uncertain and susceptible to change. Such critical accounting estimates could change from period to period and may have a material impact on the Group's financial condition, changes in financial condition or results of operations. Critical accounting estimates could also involve estimates where management could have reasonably used another estimate in the current accounting period. The Group has identified the following significant accounting policies that involve critical accounting estimates:

- the impairment of associates (see "Associates" below)
- the impairment of financial assets at fair value through other comprehensive income (see "Financial Assets (IFRS 9 - 2018 only) – Financial Assets at Fair Value through Other Comprehensive Income" below)
- the impairment of financial assets available for sale (see "Financial Assets (IAS 39 - prior periods only) – Financial Assets Classified as Available for Sale" below)
- the determination of fair value (see "Determination of Fair Value" below)
- the recognition of trade date profit (see "Recognition of Trade Date Profit" below)
- the impairment of loans and provisions for off-balance sheet positions (see "Impairment of Loans and Provision for Off-balance Sheet Positions" below)
- the impairment of goodwill and other intangibles (see "Goodwill and Other Intangible Assets" below)
- the recognition and measurement of deferred tax assets (see "Income Taxes" below)
- the accounting for legal and regulatory contingencies and uncertain tax positions (see "Provisions" below)

Significant Accounting Policies

The following is a description of the significant accounting policies of the Group. Except for the changes in accounting policies and changes in accounting estimates described previously and noted below these policies have been consistently applied for 2016, 2017 and 2018.

Principles of Consolidation

The financial information in the Consolidated Financial Statements includes the parent company, Deutsche Bank AG, together with its consolidated subsidiaries, including certain structured entities presented as a single economic unit.

Subsidiaries

The Group's subsidiaries are those entities which it directly or indirectly controls. Control over an entity is evidenced by the Group's ability to exercise its power in order to affect any variable returns that the Group is exposed to through its involvement with the entity.

The Group sponsors the formation of structured entities and interacts with structured entities sponsored by third parties for a variety of reasons, including allowing clients to hold investments in separate legal entities, allowing clients to invest jointly in alternative assets, for asset securitization transactions, and for buying or selling credit protection.

When assessing whether to consolidate an entity, the Group evaluates a range of control factors, namely:

- the purpose and design of the entity
- the relevant activities and how these are determined
- whether the Group's rights result in the ability to direct the relevant activities
- whether the Group has exposure or rights to variable returns
- whether the Group has the ability to use its power to affect the amount of its returns

Where voting rights are relevant, the Group is deemed to have control where it holds, directly or indirectly, more than half of the voting rights over an entity unless there is evidence that another investor has the practical ability to unilaterally direct the relevant activities.

Potential voting rights that are deemed to be substantive are also considered when assessing control.

Likewise, the Group also assesses existence of control where it does not control the majority of the voting power but has the practical ability to unilaterally direct the relevant activities. This may arise in circumstances where the size and dispersion of holdings of the shareholders give the Group the power to direct the activities of the investee.

Subsidiaries are consolidated from the date on which control is transferred to the Group and are deconsolidated from the date that control ceases.

The Group reassesses the consolidation status at least at every quarterly reporting date. Therefore, any changes in the structure leading to a change in one or more of the control factors, require reassessment when they occur. This includes changes in decision making rights, changes in contractual arrangements, changes in the financing, ownership or capital structure as well as changes following a trigger event which was anticipated in the original documentation.

All intercompany transactions, balances and unrealized gains on transactions between Group companies are eliminated on consolidation.

Consistent accounting policies are applied throughout the Group for the purposes of consolidation. Issuances of a subsidiary's stock to third parties are treated as noncontrolling interests. Profit or loss attributable to noncontrolling interests are reported separately in the Consolidated Statement of Income and Consolidated Statement of Comprehensive Income.

At the date that control of a subsidiary is lost, the Group a) derecognizes the assets (including attributable goodwill) and liabilities of the subsidiary at their carrying amounts, b) derecognizes the carrying amount of any noncontrolling interests in the former subsidiary, c) recognizes the fair value of the consideration received and any distribution of the shares of the subsidiary, d) recognizes any investment retained in the former subsidiary at its fair value and e) recognizes any resulting difference of the above items as a gain or loss in the income statement. Any amounts recognized in prior periods in other comprehensive income in relation to that subsidiary would be reclassified to the Consolidated Statement of Income or transferred directly to retained earnings if required by other IFRSs.

Associates

An associate is an entity in which the Group has significant influence, but not a controlling interest, over the operating and financial management policy decisions of the entity. Significant influence is generally presumed when the Group holds between 20 % and 50 % of the voting rights. The existence and effect of potential voting rights that are currently exercisable or convertible are considered in assessing whether the Group has significant influence. Among the other factors that are considered in determining whether the Group has significant influence are representation on the board of directors (supervisory board in the case of German stock corporations) and material intercompany transactions. The existence of these factors could require the application of the equity method of accounting for a particular investment even though the Group's investment is less than 20 % of the voting stock.

Investments in associates are accounted for under the equity method of accounting. The Group's share of the results of associates is adjusted to conform to the accounting policies of the Group and is reported in the Consolidated Statement of Income as Net income (loss) from equity method investments. The Group's share in the associate's profits and losses resulting from intercompany sales is eliminated on consolidation.

Under the equity method of accounting, the Group's investments in associates and jointly controlled entities are initially recorded at cost including any directly related transaction costs incurred in acquiring the associate, and subsequently increased (or decreased) to reflect both the Group's pro-rata share of the post-acquisition net income (or loss) of the associate or jointly controlled entity and other movements included directly in the equity of the associate or jointly controlled entity. Goodwill arising on the acquisition of an associate or a jointly controlled entity is included in the carrying value of the investment (net of any accumulated impairment loss). As goodwill is not reported separately it is not specifically tested for impairment. Rather, the entire equity method investment is tested for impairment at each balance sheet date.

If there is objective evidence of impairment, an impairment test is performed by comparing the investment's recoverable amount, which is the higher of its value in use and fair value less costs to sell, with its carrying amount. An impairment loss recognized in prior periods is only reversed if there has been a change in the estimates used to determine the investment's recoverable amount since the last impairment loss was recognized. If this is the case the carrying amount of the investment is increased to its higher recoverable amount. The increased carrying amount of the investment in associate attributable to a reversal of an impairment loss shall not exceed the carrying amount that would have been determined had no impairment loss been recognized for the investment in prior years.

At the date that the Group ceases to have significant influence over the associate or jointly controlled entity the Group recognizes a gain or loss on the disposal of the equity method investment equal to the difference between the sum of the fair value of any retained investment and the proceeds from disposing of the associate and the carrying amount of the investment. Amounts recognized in prior periods in other comprehensive income in relation to the associate are accounted for on the same basis as would have been required if the investee had directly disposed of the related assets or liabilities.

Critical Accounting Estimates: As the assessment of whether there is objective evidence of impairment may require significant management judgment and the estimates for impairment could change from period to period based on future events that may or may not occur, the Group considers this to be a critical accounting estimate.

Foreign Currency Translation

The Consolidated Financial Statements are prepared in euro, which is the presentation currency of the Group. Various entities in the Group use a different functional currency, being the currency of the primary economic environment in which the entity operates.

An entity records foreign currency revenues, expenses, gains and losses in its functional currency using the exchange rates prevailing at the dates of recognition.

Monetary assets and liabilities denominated in currencies other than the entity's functional currency are translated at the period end closing rate. Foreign exchange gains and losses resulting from the translation and settlement of these items are recognized in the Consolidated Statement of Income as net gains (losses) on financial assets/liabilities at fair value through profit or loss in order to align the translation amounts with those recognized from foreign currency related transactions (derivatives) which hedge these monetary assets and liabilities.

Nonmonetary items that are measured at historical cost are translated using the historical exchange rate at the date of the transaction. Translation differences on nonmonetary items which are held at fair value through profit or loss are recognized in profit or loss. Translation differences on available for sale nonmonetary items (equity securities) are included in other comprehensive income and recognized in the Consolidated Statement of Income when the non-monetary item is sold as part of the overall gain or loss on sale of the item.

For purposes of translation into the presentation currency, assets and liabilities of foreign operations are translated at the period end closing rate and items of income and expense are translated into euros at the rates prevailing on the dates of the transactions, or average rates of exchange where these approximate actual rates. The exchange differences arising on the translation of a foreign operation are included in other comprehensive income. For foreign operations that are subsidiaries, the amount of exchange differences attributable to any noncontrolling interests is recognized in noncontrolling interests.

Upon disposal of a foreign subsidiary and associate (which results in loss of control or significant influence over that operation) the total cumulative exchange differences recognized in other comprehensive income are reclassified to profit or loss.

Upon partial disposal of a foreign operation that is a subsidiary and which does not result in loss of control, the proportionate share of cumulative exchange differences is reclassified from other comprehensive income to noncontrolling interests as this is deemed a transaction with equity holders. For a partial disposal of an associate which does not result in a loss of significant influence, the proportionate share of cumulative exchange differences is reclassified from other comprehensive income to profit or loss.

Interest, Commissions and Fees (IFRS 9 and IFRS 15 - 2018 only)

Net Interest Income – Interest income and expense from all interest-bearing assets and liabilities is recognized as net interest income using the effective interest method. The effective interest rate (EIR) is a method of calculating the amortized cost of a financial asset or a financial liability and of allocating the interest income or expense over the relevant period using the estimated future cash flows.

The estimated future cash flows used in the EIR calculation include those determined by all of the contractual terms of the asset or liability, all fees (including commissions) that are considered to be integral to the effective interest rate, direct and incremental transaction costs and all other premiums or discounts. However, if the financial instrument is carried at fair value through profit or loss, any associated fees are recognized in trading income when the instrument is initially recognized, provided there are no significant unobservable inputs used in determining its fair value.

If a financial asset is credit-impaired interest revenue is calculated by applying the effective interest rate to the gross carrying amount. The gross carrying amount of a financial asset is the amortized cost of a financial asset gross of any impairment allowance. For assets which are initially recognized as purchased or credit-impaired, interest revenue is calculated through the use of a credit-adjusted effective interest rate which takes into consideration expected credit losses.

The Group recognizes income from government grants which are associated to interest-bearing assets and liabilities in net interest income when there is reasonable assurance that it will receive the grants and will comply with the conditions attached to the grants.

As a result of the amendments to International Accounting Standard 1: “Presentation of Financial Statements” (IAS 1) following the adoption of IFRS 9, the Group presents interest income and expense calculated using the EIR method separately in the income statement.

Commissions and Fee Income –The Group applies the IFRS 15, “Revenue from Contracts with Customers” five-step revenue recognition model to the recognition of Commissions and Fee Income, under which income must be recognized when control of goods and services is transferred, hence the contractual performance obligations to the customer has been satisfied.

Accordingly, after a contract with a customer has been identified in the first step, the second step is to identify the performance obligation – or a series of distinct performance obligations – provided to the customer. The Group must examine whether the service is capable of being distinct and is actually distinct within the context of the contract. A promised service is distinct if the customer can benefit from the service either on its own or together with other resources that are readily available to the customer, and the promise to transfer the service to the customer is separately identifiable from other promises in the contract. The amount of income is measured on the basis of the contractually agreed transaction price for the performance obligation defined in the contract. If a contract includes variable consideration, the Group estimates the amount of consideration to which it will be entitled in exchange for transferring the promised goods or services to a customer. Income is recognized in profit and loss when the identified performance obligation has been satisfied.

The Group provides asset management services that give rise to asset management and performance fees and constitute a single performance obligation. The asset management and performance fee components are variable considerations such that at each reporting date the Group estimates the fee amount to which it will be entitled in exchange for transferring the promised services to the customer. The benefits arising from the asset management services are simultaneously received and consumed by the customer over time. The Group recognizes revenue over time by measuring the progress towards complete satisfaction of that performance obligation, subject to the removal of any uncertainty as to whether it is highly probable that a significant reversal in the cumulative amount of revenue recognized would occur or not. For the management fee component this is the end of the monthly or quarterly service period. For performance fees this date is when any uncertainty related to the performance component has been fully removed.

Loan commitment fees related to commitments that are accounted for off-balance sheet are recognized in commissions and fee income over the life of the commitment if it is unlikely that the Group will enter into a specific lending arrangement. If it is probable that the Group will enter into a specific lending arrangement, the loan commitment fee is deferred until the origination of a loan and recognized as an adjustment to the loan’s effective interest rate.

The following Commissions and Fee Income is predominantly earned from services that are received and consumed by the customer over time: Administration, assets under management, foreign commercial business, loan processing and guarantees sundry other customer services. Commissions and Fee Income predominantly earned from providing services at a point in time or transaction-type services include: other securities, underwriting and advisory fees, brokerage fees, local payments, foreign currency/ exchange business and intermediary fees.

Expenses that are directly related and incremental to the generation of Commissions and Fee Income are presented net in Commissions and Fee Income. This includes income and associated expense where the Group contractually owns the performance obligation (i.e. as Principal) in relation to the service that gives rise to the revenue and associated expense. In contrast, it does not include situations where the Group does not contractually own the performance obligation and is acting as agent. The determination of whether the Group is acting as principal or agent is based on the contractual terms of the underlying service arrangement. The gross Commissions and Fee Income and Expense amounts are disclosed in "Note 6 – Commissions and Fee Income".

Interest, Commissions and Fees (IAS 18 - prior periods only)

The Group applied the revenue recognition requirements of IAS 18, "Revenue" (IAS 18). Revenue was recognized when the amount of revenue and associated costs could be reliably measured, it is probable that economic benefits associated with the transaction will be realized and the stage of completion of the transaction could be reliably measured. This concept was applied to the key revenue generating activities of the Group as follows.

Net Interest Income – Interest from all interest-bearing assets and liabilities was recognized as net interest income using the effective interest method. The effective interest rate is a method of calculating the amortized cost of a financial asset or a financial liability and of allocating the interest income or expense over the relevant period using the estimated future cash flows. The estimated future cash flows used in this calculation include those determined by the contractual terms of the asset or liability, all fees that are considered to be integral to the effective interest rate, direct and incremental transaction costs and all other premiums or discounts.

Once an impairment loss was recognized on a loan, held-to-maturity investment or available for sale debt instruments, although the accrual of interest in accordance with the contractual terms of the instrument was discontinued, interest income was recognized based on the rate of interest that was used to discount future cash flows for the purpose of measuring the impairment loss. For a loan and held to maturity investment this would be the original effective interest rate, but a new effective interest rate was established each time an available for sale debt instrument was impaired as impairment was measured to fair value and based on a current market rate.

The Group recognized income from government grants which are associated to interest-bearing assets and liabilities in net interest income when there was reasonable assurance that it will receive the grants and will comply with the conditions attached to the grants.

Commissions and Fee Income – The recognition of fee revenue (including commissions) was determined by the purpose of the fees and the basis of accounting for any associated financial instruments. If there was an associated financial instrument, fees that are an integral part of the effective interest rate of that financial instrument are included within the effective yield calculation. However, if the financial instrument was carried at fair value through profit or loss, any associated fees are recognized in profit or loss when the instrument was initially recognized, provided there was no significant unobservable inputs used in determining its fair value. Fees earned from services that are provided over a specified service period were recognized over that service period. Fees earned for the completion of a specific service or significant event were recognized when the service was completed or the event occurred.

Loan commitment fees related to commitments that are accounted for off-balance sheet were recognized in commissions and fee income over the life of the commitment if it is unlikely that the Group will enter into a specific lending arrangement. If it was probable that the Group will enter into a specific lending arrangement, the loan commitment fee was deferred until the origination of a loan and recognized as an adjustment to the loan's effective interest rate.

Performance-linked fees or fee components were recognized when the performance criteria are fulfilled.

The following fee income was predominantly earned from services that were provided over a period of time: investment fund management fees, fiduciary fees, custodian fees, portfolio and other management and advisory fees, credit-related fees and commission income. Fees predominantly earned from providing transaction-type services include underwriting fees, corporate finance fees and brokerage fees.

Expenses that were directly related and incremental to the generation of fee income were presented net in Commissions and Fee Income.

Financial Assets (IFRS 9 – 2018 only)

The Group classifies financial assets in line with the classification and measurement requirements of IFRS 9, "Financial Instruments" (IFRS 9) where financial assets are classified based on both the business model used for managing the financial assets and the contractual cash flow characteristics of the financial asset (known as Solely Payments of Principal and Interest or "SPPI"). There are three business models available:

- Hold to Collect - Financial assets held with the objective to collect contractual cash flows. They are subsequently measured at amortized cost and are recorded in multiple lines on the Group's consolidated balance sheet.
- Hold to Collect and Sell - Financial assets held with the objective of both collecting contractual cash flows and selling financial assets. They are recorded as Financial assets at Fair Value through Other Comprehensive Income on the Group's consolidated balance sheet.
- Other - Financial assets that do not meet the criteria of either "Hold to Collect" or "Hold to Collect and Sell". They are recorded as Financial Assets at Fair Value through Profit or Loss on the Group's consolidated balance sheet.

The assessment of business model requires judgment based on facts and circumstances at the date of the adoption on January 1, 2018 and upon initial measurement. As part of this assessment, the Group considers quantitative factors (e.g., the expected frequency and volume of sales) and qualitative factors such as how the performance of the business model and the financial assets held within that business model are evaluated and reported to the Group's key management personnel. In addition to taking into consideration the risks that affect the performance of the business model and the financial assets held within that business model, in particular, the way in which those market and credit risks are managed; and how managers of the business are compensated (e.g., whether the compensation is based on the fair value of the assets managed or on the contractual cash flows collected). This assessment results in an asset being classified in either a Hold to Collect, Hold to Collect and Sell or Other business model.

If the Group holds a financial asset either in a Hold to Collect or a Hold to Collect and Sell business model, then an assessment at initial recognition to determine whether the contractual cash flows of the financial asset are Solely Payments of Principal and Interest on the principal amount outstanding at initial recognition is required to determine the classification. Contractual cash flows, that are SPPI on the principal amount outstanding, are consistent with a basic lending arrangement. Interest in a basic lending arrangement is consideration for the time value of money and the credit risk associated with the principal amount outstanding during a particular period of time. It can also include consideration for other basic lending risks (e.g., liquidity risk) and costs (e.g., administrative costs) associated with holding the financial asset for a particular period of time; and a profit margin that is consistent with a basic lending arrangement.

Financial Assets at Fair Value through Profit or Loss

Financial assets are classified at fair value through profit or loss if they are held in the other business model because they are either held for trading or because they do not meet the criteria for Hold to Collect or Hold to Collect and Sell. In addition, it includes financial assets that meet the criteria for Hold to Collect or Hold to Collect and Sell business model, but the financial asset fails SPPI or where the Group designated the financial assets under the fair value option.

Financial assets classified as Financial Assets at fair value through profit or loss are measured at fair value with realized and unrealized gains and losses included in Net gains (losses) on financial assets/liabilities at fair value through profit or loss. Interest on interest earning assets such as trading loans and debt securities and dividends on equity instruments are presented in Interest and Similar Income.

Financial assets classified at fair value through profit or loss are recognized or derecognized on trade date. Trade date is the date on which the Group commits to purchase or sell the asset.

Trading Assets – Financial assets are classified as held for trading if they have been originated, acquired or incurred principally for the purpose of selling or repurchasing them in the near term, or they form part of a portfolio of identified financial instruments that are managed together and for which there is evidence of a recent actual pattern of short-term profit-taking. Trading assets include debt and equity securities, derivatives held for trading purposes, and trading loans. This also includes loan commitments that are allocated to the Other business model and that are classified as derivatives held for trading.

Non-Trading Financial Assets Mandatory at Fair Value through Profit and Loss –The Group assigns any non-trading financial asset that does not fall into the Hold to Collect nor Hold to Collect and Sell business models into the Other business model and classifies them as Non-Trading Financial Assets mandatory at Fair Value through Profit and Loss. This includes predominately reverse repurchase agreements which are managed on a fair value basis. Additionally, any financial asset that falls into the Hold to Collect or Hold to Collect and Sell business models for which the contractual cash flow characteristics are not SPPI is classified by the Group as Non-Trading Financial Assets Mandatory at Fair Value through Profit and Loss.

Financial Assets Designated at Fair Value through Profit or Loss – Certain financial assets that would otherwise be measured subsequently at amortized cost or at fair value through other comprehensive income, may be designated at Fair Value through Profit or Loss if the designation eliminates or significantly reduces a measurement or recognition inconsistency. The use of the fair value option under IFRS 9 is limited. The Group allows the fair value option to be designated only for those financial instruments for which a reliable estimate of fair value can be obtained.

Financial Assets at Fair Value through Other Comprehensive Income

A financial asset shall be classified and measured at Fair Value through Other Comprehensive Income ("FVOCI"), if the financial asset is held in a Hold to Collect and Sell business model and the contractual cash flows are SPPI, unless designated under the fair value option.

Under FVOCI, a financial asset is measured at its fair value with any changes being recognized in Other Comprehensive Income ("OCI") and is assessed for impairment under the IFRS 9 expected credit loss model where provisions are recorded through profit or loss are recognized based on expectations of potential credit losses. The Group's impairment policy is described further in the section "Impairment of Loans and Provision for Off-Balance Sheet Positions (IFRS 9 – 2018 only)". The foreign currency translation effect for FVOCI assets is recognized in profit or loss, as is the interest component by using the effective interest method. The amortization of premiums and accretion of discounts are recorded in net interest income. Realized gains and losses are reported in net gains (losses) on financial assets at FVOCI. Generally, the weighted-average cost method is used to determine the cost of FVOCI financial assets.

Financial assets classified as FVOCI are recognized or derecognized on trade date. Trade date is the date on which the Group commits to purchase or sell the asset.

It is possible to designate non-trading equity instruments as FVOCI. However, this category is expected to have limited usage by the Group and has not been used to date.

Financial Assets at Amortized Cost

A financial asset is classified and subsequently measured at amortized cost if the financial asset is held in a Hold to Collect business model and the contractual cash flows are SPPI.

Under this measurement category, the financial asset is measured at fair value at initial recognition. Subsequently the carrying amount is reduced for principal payments, plus or minus the cumulative amortization using the effective interest method. The financial asset is assessed for impairment under the IFRS 9 expected credit loss model where provisions are recognized based on expectations of potential credit losses. The Group's impairment of financial instruments policy is described further in the section "Impairment of Loans and Provision for Off-Balance Sheet Positions (IFRS 9 – 2018 only)". Financial assets measured at amortized cost are recognized on a settlement date basis.

Financial Assets at Amortized Cost include predominately Loans at amortized costs, Central bank funds sold and securities purchased under resale agreements, Securities borrowed and certain receivables presented in Other Assets.

Modification of Financial Assets

When the terms of a financial asset are renegotiated or modified and the modification does not result in derecognition, a gain or loss is recognized in the income statement as the difference between the original contractual cash flows and the modified cash flows discounted at the original effective interest rate. The modified financial asset will continue to accrue interest at its original EIR.

Noncredit related or commercial renegotiations where an obligor has not experienced a significant increase in credit risk since origination, and has a readily exercisable right to early terminate the financial asset results in derecognition of the original agreement and recognition of a new financial asset based on the newly negotiated commercial terms.

For credit related modifications (i.e., those modifications due to significant increase in credit risk since inception) or those where the obligor does not have the readily exercisable right to early terminate, the Group assesses whether the modified terms result in the financial asset being significantly modified and therefore derecognized. This assessment includes a quantitative assessment of the impact of the change in cash flows from the modification of contractual terms and additionally where necessary a qualitative assessment of the impact of the change in the contractual terms. Where these modifications are not concluded to be significant, the financial asset is not derecognized and is accounted for as a modification as described above.

If the changes are concluded to be significant, the old instrument is derecognized and a new instrument recognized. Where a modification results in a new financial asset being recognized, the date of the modification is the date of initial recognition of the new financial asset. The Group then recognizes a credit loss allowance based on 12-month expected credit losses at each reporting date. However, if following a modification that results in a derecognition of the original financial asset, there is evidence that the new financial asset is credit-impaired on initial recognition, then the new financial asset should be recognized as an originated credit-impaired financial asset and initially classified in Stage 3 (refer to section “Impairment of Loans and Provision for Off-Balance Sheet Positions (IFRS 9 – 2018 only)” below).

Financial Assets (IAS 39 - prior periods only)

The Group applied the classification and measurement requirements of IAS 39, “Financial Instruments: Recognition and Measurement” in prior periods.

The Group classified its financial assets into the following categories: financial assets at fair value through profit or loss, loans, held-to-maturity and financial assets available for sale (“AFS”). Appropriate classification of financial assets was determined at the time of initial recognition or when reclassified in the consolidated balance sheet.

Financial assets classified at fair value through profit or loss and financial assets classified as AFS were recognized or derecognized on trade date if a regular way period for the instrument exists. Trade date is the date on which the Group commits to purchase or sell the asset or issue or repurchase the financial liability. Financial instruments measured at amortized cost were recognized on a settlement date basis.

Financial Assets at Fair Value through Profit or Loss

The Group classified certain financial assets either as held for trading or designated at fair value through profit or loss. They were carried at fair value and presented as financial assets at fair value through profit or loss. Related realized and unrealized gains and losses are included in net gains (losses) on financial assets/liabilities at fair value through profit or loss. Interest on interest earning assets such as trading loans and debt securities and dividends on equity instruments were presented in interest and similar income for financial instruments at fair value through profit or loss.

Trading Assets – Financial assets were classified as held for trading if they have been originated or acquired principally for the purpose of selling or repurchasing them in the near term, or they formed part of a portfolio of identified financial assets that were managed together and for which there was evidence of a recent actual pattern of short-term profit-taking. Trading assets included debt and equity securities, derivatives held for trading purposes, commodities and trading loans.

Financial Assets Designated at Fair Value through Profit or Loss – Certain financial assets that did not meet the definition of trading assets were designated at fair value through profit or loss using the fair value option. To be designated at fair value through profit or loss, financial assets had to meet one of the following criteria: (1) the designation eliminates or significantly reduced a measurement or recognition inconsistency; (2) a group of financial assets or liabilities or both was managed and its performance is evaluated on a fair value basis in accordance with a documented risk management or investment strategy; or (3) the instrument contains one or more embedded derivatives, unless: (a) the embedded derivative does not significantly modify the cash flows that otherwise would be required by the contract; or (b) it is clear with little or no analysis that separation is prohibited. In addition, the Group allowed the fair value option to be designated only for those financial instruments for which a reliable estimate of fair value can be obtained. Financial assets which were designated at fair value through profit or loss, under the fair value option, include repurchase and reverse repurchase agreements, certain loans and loan commitments and debt and equity securities.

Loans

Loans included originated and purchased non-derivative financial assets with fixed or determinable payments that were not quoted in an active market and which were not classified as financial assets at fair value through profit or loss, held-to-maturity or financial assets AFS. An active market exists when quoted prices are readily and regularly available from an exchange, dealer, broker, industry group, pricing service or regulatory agency and those prices represent actual and regularly occurring market transactions on an arm's length basis.

Loans not acquired in a business combination or in an asset purchase were initially recognized at their transaction price representing the fair value, which is the cash amount advanced to the borrower. In addition, the net of direct and incremental transaction costs and fees were included in the initial carrying amount of loans. These loans were subsequently measured at amortized cost using the effective interest method less impairment.

Loans which have been acquired as either part of a business combination or as an asset purchase were initially recognized at fair value at the acquisition date. This included loans for which an impairment loss had been established by the acquiree before their initial recognition by the Group. The fair value at the acquisition date incorporated expected cash flows which considered the credit quality of these loans including any incurred losses, which became the new amortized cost base. Interest income was recognized using the effective interest method. Subsequent to the acquisition date the Group assessed whether there was objective evidence of impairment in line with the policies described in the section entitled "Impairment of Loans and Provision for Off-Balance Sheet Positions (IAS 39 Prior Periods)". If the loans were determined to be impaired then a loan loss allowance was recognized with a corresponding charge to the provision for credit losses line in the Consolidated Statement of Income. Releases of such loan loss allowances established after their initial recognition were included in the provision for credit losses line. Subsequent improvements in the credit quality of such loans for which no loss allowance had been recorded were recognized immediately through an adjustment to the current carrying value and a corresponding gain was recognized in interest income.

Held-to-Maturity Investments

Held-to-maturity investments were non-derivative financial assets with fixed or determinable payments and a fixed maturity that the Group had the positive intention and ability to hold to maturity and which were not classified as financial assets at fair value through profit or loss, loans or financial assets AFS.

Held-to-maturity investments were initially recorded at fair value plus any directly attributable transaction costs and were subsequently measured at amortized cost using the effective interest method. Subsequent to the acquisition date, the Group assessed whether there was objective evidence of impairment in line with the policies described in the section entitled "Impairment of Loans and Provision for Off-Balance Sheet provisions (IAS 39 Prior Periods only)". If a held-to-maturity investment was considered impaired, then an impairment loss was recognized in the Consolidated Statement of Income.

Financial Assets Classified as Available for Sale

Financial assets that were classified as AFS are initially recognized at its fair value plus transaction costs that were directly attributable to the acquisition of the financial asset. The amortization of premiums and accretion of discount were recorded in net interest income. Financial assets classified as AFS were carried at fair value with the changes in fair value reported in other comprehensive income, unless the asset was subject to a fair value hedge, in which case changes in fair value resulting from the risk being hedged were recorded in other income. For monetary financial assets classified as AFS (debt instruments), changes in carrying amounts relating to changes in foreign exchange rate were recognized in the Consolidated Statement of Income and other changes in carrying amount were recognized in other comprehensive income as indicated above. For financial assets classified as AFS that were nonmonetary items (equity instruments), the fair value gain or loss was recognized in other comprehensive income, which also includes any related foreign exchange component.

Equity investments classified as AFS were assessed for impairment if, objective evidence demonstrates a significant or prolonged decline in the fair value of the investment below cost. In the case of debt securities classified as AFS, impairment was assessed based on the same criteria as for loans.

If there was evidence of impairment, any amounts previously recognized in other comprehensive income was recognized in the Consolidated Statement of Income for the period, reported in net gains (losses) on financial assets available for sale. This impairment loss for the period was determined as the difference between the acquisition cost (net of any principal repayments and amortization) and current fair value of the asset less any impairment loss on that investment previously recognized in the Consolidated Statement of Income.

When an AFS debt security was impaired, any subsequent decreases in fair value were recognized in the Consolidated Statement of Income as it was considered further impairment. Any subsequent increases were also recognized in the Consolidated Statement of Income until the asset is no longer considered impaired. When the fair value of the AFS debt security recovered to at least amortized cost it was no longer considered impaired and subsequent changes in fair value were reported in other comprehensive income.

Reversals of impairment losses on equity investments classified as AFS were not reversed through the Consolidated Statement of Income; increases in their fair value after impairment were recognized in other comprehensive income.

Realized gains and losses were reported in net gains (losses) on financial assets available for sale. Generally, the weighted-average cost method was used to determine the cost of financial assets. Unrealized gains and losses recorded in other comprehensive income were transferred to the Consolidated Statement of Income on disposal of an available for sale asset and reported in net gains (losses) on financial assets available for sale.

Critical Accounting Estimates – Because the assessment of objective evidence of impairment required significant management judgment and the estimate of impairment could change from period to period based upon future events that may or may not occur, the Group considered the impairment of Financial Assets classified as Available for Sale to be a critical accounting estimate. For additional information see Note 7 “Net Gains (Losses) on Financial Assets Available for Sale”.

Loan Commitments

Loan commitments remain off-balance sheet, unless classified as derivatives held for trading or designated at fair value through profit or loss under the fair value option (IAS 39 only). The Group does not recognize and measure changes in fair value of these off-balance sheet loan commitments that result from changes in market interest rates or credit spreads. However, as specified in the sections “Impairment of Loans and Provision for Off-Balance Sheet Positions (IFRS 9 – 2018 only)” and “Impairment of Loans and Provision for Off-Balance Sheet Positions (IAS 39 prior periods only)” below, these off-balance sheet loan commitments are assessed for impairment individually and where appropriate, collectively.

Financial Liabilities (IFRS 9 in 2018 and IAS 39 in prior periods)

Under both IFRS 9 and IAS 39, financial liabilities are measured at amortized cost using the effective interest method, except for financial liabilities at fair value through profit or loss.

Financial Liabilities at Fair Value through Profit or Loss

Financial liabilities at fair value through profit or loss include Trading Liabilities, Financial Liabilities Designated at Fair Value through Profit or Loss and Non-Participating Investment Contracts (“Investment Contracts”). Under IFRS 9 and IAS 39 they are carried at fair value with realized and unrealized gains and losses included in net gains (losses) on financial assets and liabilities at fair value through profit or loss. However under IFRS 9, for financial liabilities designated at fair value through profit and loss the fair value movements attributable to the Group’s own credit component for fair value movements is recognized in Other Comprehensive Income rather than in the Statement of Income as under IAS 39.

Financial liabilities classified at fair value through profit or loss are recognized or derecognized on trade date. Trade date is the date on which the Group commits to issue or repurchase the financial liability.

Interest on interest paying liabilities are presented in interest expense for financial instruments at fair value through profit or loss.

Trading Liabilities - Financial liabilities are classified as held for trading if they have been originated or incurred principally for the purpose of repurchasing them in the near term. Trading liabilities consist primarily of derivative liabilities (including certain loan commitments) and short positions. This also includes loan commitments that are allocated to the other business model and that are classified as derivatives held for trading.

Financial Liabilities Designated at Fair Value through Profit or Loss - Certain financial liabilities that do not meet the definition of trading liabilities are designated at fair value through profit or loss using the fair value option. To be designated at fair value through profit or loss, financial liabilities must meet one of the following criteria: (1) the designation eliminates or significantly reduces a measurement or recognition inconsistency; (2) a group of financial liabilities is managed and its performance is evaluated on a fair value basis in accordance with a documented risk management or investment strategy; or (3) the instrument contains one or more embedded derivatives unless: (a) the embedded derivative does not significantly modify the cash flows that otherwise would be required by the contract; or (b) it is clear with little or no analysis that separation is prohibited. In addition, the Group allows the fair value option to be designated only for those financial instruments for which a reliable estimate of fair value can be obtained. Financial liabilities which are designated at fair value through profit or loss, under the fair value option, include repurchase agreements, loan commitments and structured note liabilities.

Investment Contracts - All of the Group's investment contracts are unit-linked and do not contain significant insurance risk or discretionary participation features. The contract liabilities are determined using current unit prices multiplied by the number of units attributed to the contract holders as of the balance sheet date. As this amount represents fair value, the liabilities have been classified as financial liabilities at fair value through profit or loss. Deposits collected under investment contracts are accounted for as an adjustment to the investment contract liabilities. Investment income attributable to investment contracts is included in the consolidated statement of Income. Investment contract claims reflect the excess of amounts paid over the account balance released. Investment contract policyholders are charged fees for policy administration, investment management, surrenders or other contract services.

Embedded Derivatives

Some hybrid financial liability contracts contain both a derivative and a non-derivative component. In such cases, the derivative component is termed an embedded derivative, with the non-derivative component representing the host financial liability contract. If the economic characteristics and risks of embedded derivatives are not closely related to those of the host financial liability contract and the hybrid financial liability contract itself is not carried at fair value through profit or loss, the embedded derivative is bifurcated and reported at fair value, with gains and losses recognized in net gains (losses) on financial assets/liabilities at fair value through profit or loss. The host financial liability contract will continue to be accounted for in accordance with the appropriate accounting standard. The carrying amount of an embedded derivative is reported in the same consolidated balance sheet line item as the host financial liability contract. Certain hybrid financial liability instruments have been designated at fair value through profit or loss using the fair value option.

Financial Liabilities at Amortized Cost

Financial liabilities measured at amortized cost include long-term and short-term debt issued which are initially measured at fair value, which is the consideration received, net of transaction costs incurred. Repurchases of issued debt in the market are treated as extinguishments and any related gain or loss is recorded in the Consolidated Statement of Income. A subsequent sale of own bonds in the market is treated as a reissuance of debt. Financial liabilities measured at amortized cost are recognized on a settlement date basis.

Offsetting of Financial Instruments

Financial assets and liabilities are offset, with the net amount presented in the consolidated balance sheet, only if the Group holds a currently enforceable legal right to set off the recognized amounts and there is an intention to settle on a net basis or to realize an asset and settle the liability simultaneously. The legal right to set off the recognized amounts must be enforceable in both the normal course of business and in the event of default, insolvency or bankruptcy of both the Group and its counterparty. In all other situations they are presented gross. When financial assets and financial liabilities are offset in the consolidated balance sheet, the associated income and expense items will also be offset in the Consolidated Statement of Income, unless specifically prohibited by an applicable accounting standard.

The majority of the offsetting applied by the Group relates to derivatives and repurchase and reverse repurchase agreements. A significant portion of offsetting is applied to interest rate derivatives and related cash margin balances, which are cleared through central clearing parties such as the London Clearing House. For further information please refer to Note 19 "Offsetting Financial Assets and Financial Liabilities".

Determination of Fair Value

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an arm's length transaction between market participants at the measurement date. The fair value of instruments that are quoted in active markets is determined using the quoted prices where they represent those at which regularly and recently occurring transactions take place. The Group measures certain portfolios of financial assets and financial liabilities on the basis of their net risk exposures when the following criteria are met:

- The group of financial assets and liabilities is managed on the basis of its net exposure to a particular market risk (or risks) or to the credit risk of a particular counterparty, in accordance with a documented risk management strategy,
- The fair values are provided to key management personnel, and
- The financial assets and liabilities are measured at fair value through profit or loss.

This portfolio valuation approach is consistent with how the Group manages its net exposures to market and counterparty credit risks.

Critical Accounting Estimates – The Group uses valuation techniques to establish the fair value of instruments where prices quoted in active markets are not available. Therefore, where possible, parameter inputs to the valuation techniques are based on observable data derived from prices of relevant instruments traded in an active market. These valuation techniques involve some level of management estimation and judgment, the degree of which will depend on the price transparency for the instrument or market and the instrument's complexity.

In reaching estimates of fair value management judgment needs to be exercised. The areas requiring significant management judgment are identified, documented and reported to senior management as part of the valuation control process and the standard monthly reporting cycle. The specialist model validation and valuation control groups focus attention on the areas of subjectivity and judgment.

The level of management judgment required in establishing fair value of financial instruments for which there is a quoted price in an active market is usually minimal. Similarly there is little subjectivity or judgment required for instruments valued using valuation models which are standard across the industry and where all parameter inputs are quoted in active markets.

The level of subjectivity and degree of management judgment required is more significant for those instruments valued using specialized and sophisticated models and where some or all of the parameter inputs are less liquid or less observable. Management judgment is required in the selection and application of appropriate parameters, assumptions and modelling techniques. In particular, where data are obtained from infrequent market transactions then extrapolation and interpolation techniques must be applied. Where no market data are available for a particular instrument then pricing inputs are determined by assessing other relevant sources of information such as historical data, fundamental analysis of the economics of the transaction and proxy information from similar transactions, and making appropriate adjustment to reflect the actual instrument being valued and current market conditions. Where different valuation techniques indicate a range of possible fair values for an instrument then management has to decide what point within the range of estimates appropriately represents the fair value. Further, some valuation adjustments may require the exercise of management judgment to achieve fair value.

Financial assets and liabilities carried at fair value are required to be disclosed according to the inputs to the valuation method that are used to determine their fair value. Specifically, segmentation is required between those valued using quoted market prices in an active market (level 1), valuation techniques based on observable parameters (level 2) and valuation techniques using significant unobservable parameters (level 3). Management judgment is required in determining the category to which certain instruments should be allocated. This specifically arises when the valuation is determined by a number of parameters, some of which are observable and others are not. Further, the classification of an instrument can change over time to reflect changes in market liquidity and therefore price transparency.

The Group provides a sensitivity analysis of the impact upon the level 3 financial instruments of using a reasonably possible alternative for the unobservable parameter. The determination of reasonably possible alternatives requires significant management judgment.

For financial instruments measured at amortized cost (which includes loans, deposits and short and long term debt issued) the Group discloses the fair value. Generally there is limited or no trading activity in these instruments and therefore the fair value determination requires significant management judgment.

For further discussion of the valuation methods and controls and quantitative disclosures with respect to the determination of fair value, please refer to Note 13 "Financial Instruments carried at Fair Value" and Note 14 "Fair Value of Financial Instruments not carried at Fair Value".

Recognition of Trade Date Profit

If there are significant unobservable inputs used in the valuation technique, the financial instrument is recognized at the transaction price and any profit implied from the valuation technique at trade date is deferred.

Using systematic methods, the deferred amount is recognized over the period between trade date and the date when the market is expected to become observable, or over the life of the trade (whichever is shorter). Such methodology is used because it reflects the changing economic and risk profile of the instrument as the market develops or as the instrument itself progresses to maturity. Any remaining trade date deferred profit is recognized in the Consolidated Statement of Income when the transaction becomes observable or the Group enters into offsetting transactions that substantially eliminate the instrument's risk. In the rare circumstances that a trade date loss arises, it would be recognized at inception of the transaction to the extent that it is probable that a loss has been incurred and a reliable estimate of the loss amount can be made.

Critical Accounting Estimates – Management judgment is required in determining whether there exist significant unobservable inputs in the valuation technique. Once deferred, the decision to subsequently recognize the trade date profit requires a careful assessment of the then current facts and circumstances supporting observability of parameters and/or risk mitigation.

Derivatives and Hedge Accounting

Derivatives are used to manage exposures to interest rate, foreign currency, credit and other market price risks, including exposures arising from forecast transactions. All freestanding contracts that are considered derivatives for accounting purposes are carried at fair value on the consolidated balance sheet regardless of whether they are held for trading or non-trading purposes.

The changes in fair value on derivatives held for trading are included in net gains (losses) on financial assets/liabilities at fair value through profit or loss.

Hedge Accounting

IFRS 9 includes an accounting policy choice to defer the adoption of IFRS 9 hedge accounting and to continue with IAS 39 hedge accounting. The Group decided to exercise this accounting policy choice and did not adopt IFRS 9 hedge accounting as of January 1, 2018.

For accounting purposes there are three possible types of hedges: (1) hedges of changes in the fair value of assets, liabilities or unrecognized firm commitments (fair value hedges); (2) hedges of the variability of future cash flows from highly probable forecast transactions and floating rate assets and liabilities (cash flow hedges); and (3) hedges of the translation adjustments resulting from translating the functional currency financial statements of foreign operations into the presentation currency of the parent (hedges of net investments in foreign operations).

When hedge accounting is applied, the Group designates and documents the relationship between the hedging instrument and the hedged item as well as its risk management objective and strategy for undertaking the hedging transactions and the nature of the risk being hedged. This documentation includes a description of how the Group will assess the hedging instrument's effectiveness in offsetting the exposure to changes in the hedged item's fair value or cash flows attributable to the hedged risk. Hedge effectiveness is assessed at inception and throughout the term of each hedging relationship. Hedge effectiveness is always assessed, even when the terms of the derivative and hedged item are matched.

Hedging derivatives are reported as other assets and other liabilities. In the event that a derivative is subsequently de-designated from a hedging relationship, it is transferred to financial assets/liabilities at fair value through profit or loss.

For hedges of changes in fair value, the changes in the fair value of the hedged asset, liability or unrecognized firm commitment, or a portion thereof, attributable to the risk being hedged, are recognized in the Consolidated Statement of Income along with changes in the entire fair value of the derivative. When hedging interest rate risk, any interest accrued or paid on both the derivative and the hedged item is reported in interest income or expense and the unrealized gains and losses from the hedge accounting fair value adjustments are reported in other revenue. When the foreign exchange risk of an AFS equity security was hedged in prior accounting periods, the fair value adjustments related to the security's foreign exchange exposures were also recorded in other revenue. Hedge ineffectiveness is reported in other revenue and is measured as the net effect of changes in the fair value of the hedging instrument and changes in the fair value of the hedged item arising from changes in the market rate or price related to the risk(s) being hedged.

If a fair value hedge of a debt instrument is discontinued prior to the instrument's maturity because the derivative is terminated or the relationship is de-designated, any remaining interest rate-related fair value adjustments made to the carrying amount of the debt instrument (basis adjustments) are amortized to interest income or expense over the remaining term of the original hedging relationship. For other types of fair value adjustments and whenever a fair value hedged asset or liability is sold or otherwise derecognized, any basis adjustments are included in the calculation of the gain or loss on derecognition.

For hedges of variability in future cash flows, there is no change to the accounting for the hedged item and the derivative is carried at fair value, with changes in value reported initially in other comprehensive income to the extent the hedge is effective. These amounts initially recorded in other comprehensive income are subsequently reclassified into the Consolidated Statement of Income in the same periods during which the forecast transaction affects the Consolidated Statement of Income. Thus, for hedges of interest rate risk, the amounts are amortized into interest income or expense at the same time as the interest is accrued on the hedged transaction.

Hedge ineffectiveness is recorded in other income and is measured as changes in the excess (if any) in the absolute cumulative change in fair value of the actual hedging derivative over the absolute cumulative change in the fair value of the hypothetically perfect hedge.

When hedges of variability in cash flows attributable to interest rate risk are discontinued, amounts remaining in accumulated other comprehensive income are amortized to interest income or expense over the remaining life of the original hedge relationship, unless the hedged transaction is no longer expected to occur in which case the amount will be reclassified into other income immediately. When hedges of variability in cash flows attributable to other risks are discontinued, the related amounts in accumulated other comprehensive income are reclassified into either the same Consolidated Statement of Income caption and period as profit or loss from the forecast transaction, or into other income when the forecast transaction is no longer expected to occur.

For hedges of the translation adjustments resulting from translating the functional currency financial statements of foreign operations (hedges of net investments in foreign operations) into the functional currency of the parent, the portion of the change in fair value of the derivative due to changes in the spot foreign exchange rates is recorded as a foreign currency translation adjustment in other comprehensive income to the extent the hedge is effective; the remainder is recorded as other income in the Consolidated Statement of Income.

Changes in fair value of the hedging instrument relating to the effective portion of the hedge are subsequently recognized in profit or loss on disposal of the foreign operations.

Impairment of Loans and Provision for Off-Balance Sheet Positions (IFRS 9 – 2018 only)

The impairment requirements of IFRS 9 apply to all credit exposures that are measured at amortized cost or FVOCI, and to off-balance sheet lending commitments such as loan commitments and financial guarantees. For purposes of the impairment policy below, these instruments are referred to as ("Financial Assets").

The determination of impairment losses and allowance moves from an incurred credit loss model whereby credit losses are recognized when a defined loss event occurs under IAS 39, to an expected credit loss model under IFRS 9, where allowances are taken upon initial recognition of the Financial Asset, based on expectations of potential credit losses at the time of initial recognition.

Staged Approach to the Determination of Expected Credit Losses

IFRS 9 introduces a three stage approach to impairment for Financial Assets that are not credit-impaired at the date of origination or purchase. This approach is summarized as follows:

- Stage 1: The Group recognizes a credit loss allowance at an amount equal to 12-month expected credit losses. This represents the portion of lifetime expected credit losses from default events that are expected within 12 months of the reporting date, assuming that credit risk has not increased significantly after initial recognition.
- Stage 2: The Group recognizes a credit loss allowance at an amount equal to lifetime expected credit losses for those Financial Assets which are considered to have experienced a significant increase in credit risk since initial recognition. This requires the computation of ECL based on lifetime probability of default, lifetime loss given default and lifetime exposure at default that represents the probability of default occurring over the remaining lifetime of the Financial Asset. Allowance for credit losses are higher in this stage because of an increase in credit risk and the impact of a longer time horizon being considered compared to 12 months in Stage 1.
- Stage 3: The Group recognizes a loss allowance at an amount equal to lifetime expected credit losses, reflecting a Probability of Default of 100 %, via the expected recoverable cash flows for the asset, for those Financial Assets that are credit-impaired. The Group's definition of default is aligned with the regulatory definition. Financial Assets that are credit-impaired upon initial recognition are categorized within Stage 3 with a carrying value already reflecting the lifetime expected credit losses. The accounting treatment for these purchased or originated credit-impaired ("POCI") assets is discussed further below.

Significant Increase in Credit Risk

Under IFRS 9, when determining whether the credit risk (i.e., risk of default) of a Financial Asset has increased significantly since initial recognition, the Group considers reasonable and supportable information that is relevant and available without undue cost or effort. This includes quantitative and qualitative information based on the Group's historical experience, credit risk assessment and forward-looking information (including macro-economic factors). The assessment of significant credit deterioration is key in determining when to move from measuring an allowance based on 12-month ECLs to one that is based on lifetime ECLs (i.e., transfer from Stage 1 to Stage 2).

The Group's framework for determining if there has been a significant increase in credit risk aligns with the internal Credit Risk Management ("CRM") process and covers rating related and process related indicators which are discussed further in section "IFRS 9 Impairment Approach" in the Risk Report.

Credit-impaired Financial Assets in Stage 3

The Group has aligned its definition of credit-impaired under IFRS 9 to when a Financial Asset has defaulted for regulatory purposes, according to the Capital Requirements Regulation under Art. 178.

The determination of whether a Financial Asset is credit-impaired and therefore in Stage 3 focusses exclusively on default risk, without taking into consideration the effects of credit risk mitigants such as collateral or guarantees. Specifically, a Financial Asset is credit-impaired and in Stage 3 when:

- The Group considers the obligor is unlikely to pay its credit obligations to the Group. Determination may include forbearance actions, where a concession has been granted to the borrower or economic or legal reasons that are qualitative indicators of credit impairment; or
- Contractual payments of either principal or interest by the obligor are past due by more than 90 days.

For Financial Assets considered to be credit-impaired, the ECL allowance covers the amount of loss the Group is expected to suffer. The estimation of ECLs is done on a case-by-case basis for non-homogeneous portfolios, or by applying portfolio based parameters to individual Financial Assets in these portfolios via the Group's ECL model for homogeneous portfolios. This estimate includes the use of discounted cash flows that are adjusted for scenarios.

Forecasts of future economic conditions when calculating ECLs are considered. The lifetime expected losses are estimated based on the probability-weighted present value of the difference between the contractual cash flows that are due to the Group under the contract; and the cash flows that the Group expects to receive.

A Financial Asset can be classified as credit-impaired in Stage 3 but without an allowance for credit losses (i.e., no impairment loss is expected). This may be due to the value of collateral. The Group's engine based ECL calculation is conducted on a monthly basis, whereas the case-by-case assessment of ECL in Stage 3 for non-homogeneous portfolio has to be performed at least on a quarterly basis.

Purchased or Originated Credit-Impaired Financial Assets in Stage 3

A Financial Asset is considered purchased or originated credit-impaired if there is objective evidence of impairment at the time of initial recognition. Such credit-impaired Financial Assets are termed POCI Financial Assets. POCI Financial Assets are measured to reflect lifetime expected credit losses, and all subsequent changes in lifetime expected credit losses, whether positive or negative, are recognized in the income statement as a component of the provision for credit losses. POCI Financial Assets can only be classified in Stage 3 over the life of the Financial Asset.

Write-Offs

The Group reduces the gross carrying amount of a Financial Asset when there is no reasonable expectation of recovery. Write-offs can relate to a Financial Asset in its entirety, or to a portion of it, and constitute a derecognition event. The Group considers all relevant information in making this determination, including but not limited to:

- Foreclosure actions taken by the Group which have not been successful or have a high probability of not being successful
- Collateral liquidation which has not, or will not lead to further considerable recoveries
- Situations where no further recoveries are reasonably expected

Write-offs can take place before legal actions against the borrower to recover the debt have been concluded, and a write-off does not involve the Group forfeiting its legal right to recover the debt.

Collateral for Financial Assets Considered in the Impairment Analysis

IFRS 9 requires cash flows expected from collateral and other credit enhancement to be reflected in the ECL calculation. The following are key aspects with respect to collateral and guarantees:

- Eligibility of collateral, i.e. which collateral should be considered in the ECL calculation;
- Collateral evaluation, i.e. what collateral (liquidation) value should be used; and
- Projection of the available collateral amount over the life of a transaction.

These concepts are outlined in more detail in section “IFRS 9 Impairment Approach” in the Risk Report.

Critical Accounting Estimates – The accounting estimates and judgments related to the impairment of Financial Assets is a critical accounting estimate because the underlying assumptions used can change from period to period and may significantly affect the Group’s results of operations.

In assessing assets for impairments, management judgment is required, particularly in projecting future economic information and scenarios in particular where circumstances of economic and financial uncertainty, when developments and changes to expected cash flows can occur both with greater rapidity and less predictability. The actual amount of the future cash flows and their timing may differ from the estimates used by management and consequently may cause actual losses to differ from reported allowances.

For those non-homogeneous loans in Stage 3 the determination of the impairment allowance often requires the use of considerable judgment concerning such matters as local economic conditions, the financial performance of the counterparty and the value of any collateral held, for which there may not be a readily accessible market.

The determination of the expected credit losses in Stages 1 and 2 and for homogeneous loans in Stage 3 is calculated using statistical expected loss models. The model incorporates numerous estimates and judgments. The Group performs a regular review of the model and underlying data and assumptions. The probability of defaults, loss recovery rates and judgments concerning ability of borrowers in foreign countries to transfer the foreign currency necessary to comply with debt repayments, amongst other things, are incorporated into this review.

The quantitative disclosures are provided in Note 20 “Loans” and Note 21 “Allowance for Credit Losses”.

Impairment of Loans and Provision for Off-Balance Sheet Positions (IAS 39 - prior periods only)

The Group applied the impairment requirements of IAS 39 "Financial Instruments: Recognition and Measurement" and IAS 37, "Provisions, Contingent Liabilities and Contingent Assets" in prior periods.

The Group first assessed whether objective evidence of impairment existed individually for loans that were individually significant. It then assessed collectively for loans that were not individually significant and loans which were significant but for which there was no objective evidence of impairment under the individual assessment.

To allow management to determine whether a loss event has occurred on an individual basis, all significant counterparty relationships were reviewed periodically. This evaluation considered information and events related to the counterparty, such as the counterparty experiencing significant financial difficulty or a breach of contract, for example, default or delinquency in interest or principal payments.

If there was evidence of impairment leading to an impairment loss for an individual counterparty relationship, then the amount of the loss was determined as the difference between the carrying amount of the loan(s), including accrued interest, and the present value of expected future cash flows discounted at the loan's original effective interest rate or the effective interest rate established upon reclassification to loans, including cash flows that may result from foreclosure less costs for obtaining and selling the collateral. The carrying amount of the loans was reduced by the use of an allowance account and the amount of the loss was recognized in the Consolidated Statement of Income as a component of the provision for credit losses.

The collective assessment of impairment was to establish an allowance amount relating to loans that were either individually significant but for which there was no objective evidence of impairment, or were not individually significant but for which there was, on a portfolio basis, a loss amount that was probable of having occurred and was reasonably estimable. The loss amount had three components. The first component was an amount for transfer and currency convertibility risks for loan exposures in countries where there were serious doubts about the ability of counterparties to comply with the repayment terms due to the economic or political situation prevailing in the respective country of domicile. This amount was calculated using ratings for country risk and transfer risk which were established and regularly reviewed for each country in which the Group does business. The second component was an allowance amount representing the incurred losses on the portfolio of smaller-balance homogeneous loans, which were loans to individuals and small business customers of the private and retail business. The loans were grouped according to similar credit risk characteristics and the allowance for each group was determined using statistical models based on historical experience. The third component represented an estimate of incurred losses inherent in the group of loans that had not yet been individually identified or measured as part of the smaller-balance homogeneous loans. Loans that were found not to be impaired when evaluated on an individual basis were included in the scope of this component of the allowance.

Once a loan was identified as impaired, although the accrual of interest in accordance with the contractual terms of the loan was discontinued, the accretion of the net present value of the written down amount of the loan due to the passage of time was recognized as interest income based on the original effective interest rate of the loan.

At each balance sheet date, all impaired loans were reviewed for changes to the present value of expected future cash flows discounted at the loan's original effective interest rate. Any change to the previously recognized impairment loss was recognized as a change to the allowance account and recorded in the Consolidated Statement of Income as a component of the provision for credit losses.

When it was considered that there was no realistic prospect of recovery and all collateral had been realized or transferred to the Group, the loan and any associated allowance was charged off (the loan and the related allowance were removed from the balance sheet). Individually significant loans where specific loan loss provisions were in place were evaluated at least quarterly on a case-by-case basis. For this category of loans, the number of days past due was an indicator for a charge-off but was not a determining factor. A charge-off would only take place after considering all relevant information, such as the occurrence of a significant change in the borrower's financial position such that the borrower could no longer pay the obligation, or the proceeds from the collateral were insufficient to completely satisfy the current carrying amount of the loan.

For collectively assessed loans, which were primarily mortgages and consumer finance loans, the timing of a charge-off depended on whether there was any underlying collateral and the Group's estimate of the amount collectible and the legal requirements in the jurisdiction in which the loan was originated.

Subsequent recoveries, if any, were credited to the allowance account and were recorded in the Consolidated Statement of Income as a component of the provision for credit losses.

The process to determine the provision for off-balance sheet positions is similar to the methodology used for loans. Any loss amounts were recognized as an allowance in the consolidated balance sheet within provisions and charged to the Consolidated Statement of Income as a component of the provision for credit losses.

If in a subsequent period the amount of a previously recognized impairment loss decreased and the decrease was due to an event occurring after the impairment was recognized, the impairment loss was reversed by reducing the allowance account accordingly. Such reversal was recognized in profit or loss.

Critical Accounting Estimates –The accounting estimates and judgments related to the impairment of loans and provision for off-balance sheet positions was a critical accounting estimate because the underlying assumptions used for both the individually and collectively assessed impairment can change from period to period and may significantly affect the Group's results of operations.

The quantitative disclosures are provided in Note 20 "Loans" and Note 21 "Allowance for Credit Losses".

Derecognition of Financial Assets and Liabilities

Financial Asset Derecognition

A financial asset is considered for derecognition when the contractual rights to the cash flows from the financial asset expire, or the Group has either transferred the contractual right to receive the cash flows from that asset, or has assumed an obligation to pay those cash flows to one or more recipients, subject to certain criteria.

The Group derecognizes a transferred financial asset if it transfers substantially all the risks and rewards of ownership.

The Group enters into transactions in which it transfers previously recognized financial assets but retains substantially all the associated risks and rewards of those assets; for example, a sale to a third party in which the Group enters into a concurrent total return swap with the same counterparty. These types of transactions are accounted for as secured financing transactions.

In transactions in which substantially all the risks and rewards of ownership of a financial asset are neither retained nor transferred, the Group derecognizes the transferred asset if control over that asset is not retained, i.e., if the transferee has the practical ability to sell the transferred asset. The rights and obligations retained in the transfer are recognized separately as assets and liabilities, as appropriate. If control over the asset is retained, the Group continues to recognize the asset to the extent of its continuing involvement, which is determined by the extent to which it remains exposed to changes in the value of the transferred asset.

The derecognition criteria are also applied to the transfer of part of an asset, rather than the asset as a whole, or to a group of similar financial assets in their entirety, when applicable. If transferring a part of an asset, such part must be a specifically identified cash flow, a fully proportionate share of the asset, or a fully proportionate share of a specifically-identified cash flow.

If an existing financial asset is replaced by another asset from the same counterparty on substantially different terms, or if the terms of the financial asset are substantially modified (due to forbearance measures or otherwise), the existing financial asset is derecognized and a new asset is recognized. Any difference between the respective carrying amounts is recognized in the Consolidated Statement of Income.

Securitization

The Group securitizes various consumer and commercial financial assets, which is achieved via the transfer of these assets to a structured entity, which issues securities to investors to finance the acquisition of the assets. Financial assets awaiting securitization are classified and measured as appropriate under the policies in the "Financial Assets and Liabilities" section. If the structured entity is not consolidated then the transferred assets may qualify for derecognition in full or in part, under the policy on derecognition of financial assets. Synthetic securitization structures typically involve derivative financial instruments for which the policies in the "Derivatives and Hedge Accounting" section would apply. Those transfers that do not qualify for derecognition may be reported as secured financing or result in the recognition of continuing involvement liabilities. The investors and the securitization vehicles generally have no recourse to the Group's other assets in cases where the issuers of the financial assets fail to perform under the original terms of those assets.

Interests in the securitized financial assets may be retained in the form of senior or subordinated tranches, interest only strips or other residual interests (collectively referred to as "retained interests"). Provided the Group's retained interests do not result in consolidation of a structured entity, nor in continued recognition of the transferred assets, these interests are typically recorded in financial assets at fair value through profit or loss and carried at fair value. Consistent with the valuation of similar financial instruments, the fair value of retained tranches or the financial assets is initially and subsequently determined using market price quotations where available or internal pricing models that utilize variables such as yield curves, prepayment speeds, default rates, loss severity, interest rate volatilities and spreads. The assumptions used for pricing are based on observable transactions in similar securities and are verified by external pricing sources, where available. Where observable transactions in similar securities and other external pricing sources are not available, management judgment must be used to determine fair value. The Group may also periodically hold interests in securitized financial assets and record them at amortized cost.

In situations where the Group has a present obligation (either legal or constructive) to provide financial support to an unconsolidated securitization entity a provision will be created if the obligation can be reliably measured and it is probable that there will be an outflow of economic resources required to settle it.

When an asset is derecognized a gain or loss equal to the difference between the consideration received and the carrying amount of the transferred asset is recorded. When a part of an asset is derecognized, gains or losses on securitization depend in part on the carrying amount of the transferred financial assets, allocated between the financial assets derecognized and the retained interests based on their relative fair values at the date of the transfer.

Derecognition of Financial Liabilities

A financial liability is derecognized when the obligation under the liability is discharged or cancelled or expires. If an existing financial liability is replaced by another from the same lender on substantially different terms, or the terms of the existing liability are substantially modified, such an exchange or modification is treated as a derecognition of the original liability and the recognition of a new liability, and the difference in the respective carrying amounts is recognized in the Consolidated Statement of Income.

Repurchase and Reverse Repurchase Agreements

Securities purchased under resale agreements ("reverse repurchase agreements") and securities sold under agreements to repurchase ("repurchase agreements") are treated as collateralized financings and are recognized initially at fair value, being the amount of cash disbursed and received, respectively. The party disbursing the cash takes possession of the securities serving as collateral for the financing and having a market value equal to, or in excess of, the principal amount loaned. The securities received under reverse repurchase agreements and securities delivered under repurchase agreements are not recognized on, or derecognized from, the balance sheet, because the risks and rewards of ownership are not obtained nor relinquished. Securities delivered under repurchase agreements which are not derecognized from the balance sheet and where the counterparty has the right by contract or custom to sell or repledge the collateral are disclosed in Note 22 "Transfer of Financial Assets, Assets Pledged and Received as Collateral".

Under IFRS 9 the Group allocates reverse repurchase portfolios that are managed on a fair value basis to the other business model and classifies them as "Non-trading financial assets mandatory at fair value through profit or loss". Under IAS 39 the Group choose to apply the fair value option to certain repurchase and reverse repurchase portfolios that were managed on a fair value basis.

Interest earned on reverse repurchase agreements and interest incurred on repurchase agreements is reported as interest income and interest expense, respectively.

Securities Borrowed and Securities Loaned

Securities borrowed transactions generally require the Group to deposit cash with the securities lender. In a securities loaned transaction, the Group generally receives either cash collateral, in an amount equal to or in excess of the market value of securities loaned, or securities. The Group monitors the fair value of securities borrowed and securities loaned and additional collateral is disbursed or obtained, if necessary.

The securities borrowed are not themselves recognized in the financial statements. If they are sold to third parties, the obligation to return the securities is recorded as a financial liability at fair value through profit or loss and any subsequent gain or loss is included in the Consolidated Statement of Income in net gains (losses) on financial assets/liabilities at fair value through profit or loss. Securities lent to counterparties are also retained on the consolidated balance sheet.

Under IFRS 9 and IAS 39 the Group records the amount of cash advanced or received as securities borrowed and securities loaned, respectively, in the consolidated balance sheet.

Fees received or paid are reported in interest income and interest expense, respectively. Securities lent to counterparties which are not derecognized from the consolidated balance sheet and where the counterparty has the right by contract or custom to sell or repledge the collateral are disclosed in Note 22 “Transfer of Financial Assets, Assets Pledged and Received as Collateral”.

Goodwill and Other Intangible Assets

Goodwill arises on the acquisition of subsidiaries and associates and represents the excess of the aggregate of the cost of an acquisition and any noncontrolling interests in the acquiree over the fair value of the identifiable net assets acquired at the date of the acquisition.

For the purpose of calculating goodwill, fair values of acquired assets, liabilities and contingent liabilities are determined by reference to market values or by discounting expected future cash flows to present value. This discounting is either performed using market rates or by using risk-free rates and risk-adjusted expected future cash flows. Any noncontrolling interests in the acquiree is measured either at fair value or at the noncontrolling interests’ proportionate share of the acquiree’s identifiable net assets (this is determined for each business combination).

Goodwill on the acquisition of subsidiaries is capitalized and reviewed for impairment annually or more frequently if there are indications that impairment may have occurred. For the purposes of impairment testing, goodwill acquired in a business combination is allocated to cash-generating units (“CGUs”), which are the smallest identifiable groups of assets that generate cash inflows largely independent of the cash inflows from other assets or groups of assets and that are expected to benefit from the synergies of the combination and considering the business level at which goodwill is monitored for internal management purposes. In identifying whether cash inflows from an asset (or a group of assets) are largely independent of the cash inflows from other assets (or groups of assets) various factors are considered, including how management monitors the entity’s operations or makes decisions about continuing or disposing of the entity’s assets and operations.

If goodwill has been allocated to a CGU and an operation within that unit is disposed of, the attributable goodwill is included in the carrying amount of the operation when determining the gain or loss on its disposal.

Certain non-integrated investments are not allocated to a CGU. Impairment testing is performed individually for each of these assets.

Corporate assets are allocated to a CGU when the allocation can be done on a reasonable and consistent basis. If this is not possible, the individual CGU is tested without the corporate assets. They are then tested on the level of the minimum collection of CGUs to which they can be allocated on a reasonable and consistent basis.

Intangible assets are recognized separately from goodwill when they are separable or arise from contractual or other legal rights and their fair value can be measured reliably. Intangible assets that have a finite useful life are stated at cost less any accumulated amortization and accumulated impairment losses. Customer-related intangible assets that have a finite useful life are amortized over periods of between 1 and 20 years on a straight-line basis based on their expected useful life. These assets are tested for impairment and their useful lives reaffirmed at least annually.

Certain intangible assets have an indefinite useful life and hence are not amortized, but are tested for impairment at least annually or more frequently if events or changes in circumstances indicate that impairment may have occurred.

Costs related to software developed or obtained for internal use are capitalized if it is probable that future economic benefits will flow to the Group and the cost can be measured reliably. Capitalized costs are amortized using the straight-line method over the asset's useful life which is deemed to be either three, five or ten years. Eligible costs include external direct costs for materials and services, as well as payroll and payroll-related costs for employees directly associated with an internal-use software project. Overhead costs, as well as costs incurred during the research phase or after software is ready for use, are expensed as incurred. Capitalized software costs are tested for impairment either annually if still under development or any time when there is an indication of impairment once the software is in use.

Critical Accounting Estimates – The determination of the recoverable amount in the impairment assessment of non-financial assets requires estimates based on quoted market prices, prices of comparable businesses, present value or other valuation techniques, or a combination thereof, necessitating management to make subjective judgments and assumptions. Because these estimates and assumptions could result in significant differences to the amounts reported if underlying circumstances were to change, the Group considers these estimates to be critical.

The quantitative disclosures are provided in Note 25 "Goodwill and Other Intangible Assets".

Provisions

Provisions are recognized if the Group has a present legal or constructive obligation as a result of past events, if it is probable that an outflow of resources will be required to settle the obligation, and a reliable estimate can be made of the amount of the obligation.

The amount recognized as a provision is the best estimate of the consideration required to settle the present obligation as of the balance sheet date, taking into account the risks and uncertainties surrounding the obligation.

If the effect of the time value of money is material, provisions are discounted and measured at the present value of the expenditure expected to be required to settle the obligation, using a pre-tax rate that reflects the current market assessments of the time value of money and the risks specific to the obligation. The increase in the provision due to the passage of time is recognized as interest expense.

When some or all of the economic benefits required to settle a provision are expected to be recovered from a third party (for example, because the obligation is covered by an insurance policy), an asset is recognized if it is virtually certain that reimbursement will be received.

Critical Accounting Estimates – The use of estimates is important in determining provisions for potential losses that may arise from litigation, regulatory proceedings and uncertain income tax positions. The Group estimates and provides for potential losses that may arise out of litigation, regulatory proceedings and uncertain income tax positions to the extent that such losses are probable and can be estimated, in accordance with IAS 37, "Provisions, Contingent Liabilities and Contingent Assets" or IAS 12, "Income Taxes", respectively. Significant judgment is required in making these estimates and the Group's final liabilities may ultimately be materially different.

Contingencies in respect of legal matters are subject to many uncertainties and the outcome of individual matters is not predictable with assurance. Significant judgment is required in assessing probability and making estimates in respect of contingencies, and the Group's final liability may ultimately be materially different. The Group's total liability in respect of litigation, arbitration and regulatory proceedings is determined on a case-by-case basis and represents an estimate of probable losses after considering, among other factors, the progress of each case, the Group's experience and the experience of others in similar cases, and the opinions and views of legal counsel. Predicting the outcome of the Group's litigation matters is inherently difficult, particularly in cases in which claimants seek substantial or indeterminate damages. See Note 29 "Provisions" for information on the Group's judicial, regulatory and arbitration proceedings.

Income Taxes

The Group recognizes the current and deferred tax consequences of transactions that have been included in the consolidated financial statements using the provisions of the respective jurisdictions' tax laws. Current and deferred taxes are recognized in profit or loss except to the extent that the tax relates to items that are recognized directly in equity or other comprehensive income in which case the related tax is recognized either directly in equity or other comprehensive income accordingly.

Deferred tax assets and liabilities are recognized for future tax consequences attributable to temporary differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases, unused tax losses and unused tax credits. Deferred tax assets are recognized only to the extent that it is probable that sufficient taxable profit will be available against which those unused tax losses, unused tax credits and deductible temporary differences can be utilized.

Deferred tax assets and liabilities are measured based on the tax rates that are expected to apply in the period that the asset is realized or the liability is settled, based on tax rates and tax laws that have been enacted or substantively enacted at the balance sheet date.

Current tax assets and liabilities are offset when (1) they arise from the same tax reporting entity or tax group of reporting entities, (2) the legally enforceable right to offset exists and (3) they are intended to be settled net or realized simultaneously.

Deferred tax assets and liabilities are offset when the legally enforceable right to offset current tax assets and liabilities exists and the deferred tax assets and liabilities relate to income taxes levied by the same taxing authority on either the same tax reporting entity or tax group of reporting entities.

Deferred tax liabilities are provided on taxable temporary differences arising from investments in subsidiaries, branches and associates and interests in joint ventures except when the timing of the reversal of the temporary difference is controlled by the Group and it is probable that the difference will not reverse in the foreseeable future. Deferred income tax assets are provided on deductible temporary differences arising from such investments only to the extent that it is probable that the differences will reverse in the foreseeable future and sufficient taxable income will be available against which those temporary differences can be utilized.

Deferred tax related to fair value remeasurement of financial assets classified as AFS under IAS 39 and as FVTOCI under IFRS 9, cash flow hedges and other items, which are charged or credited directly to other comprehensive income, is also credited or charged directly to other comprehensive income and subsequently recognized in the Consolidated Statement of Income once the underlying transaction or event to which the deferred tax relates is recognized in the Consolidated Statement of Income.

For share-based payment transactions, the Group may receive a tax deduction related to the compensation paid in shares. The amount deductible for tax purposes may differ from the cumulative compensation expense recorded. At any reporting date, the Group must estimate the expected future tax deduction based on the current share price. The associated current and deferred tax consequences are recognized as income or expense in the Consolidated Statement of Income for the period. If the amount deductible, or expected to be deductible, for tax purposes exceeds the cumulative compensation expense, the excess tax benefit is recognized directly in equity.

Critical Accounting Estimates – In determining the amount of deferred tax assets, the Group uses historical tax capacity and profitability information and, if relevant, forecasted operating results based upon approved business plans, including a review of the eligible carry-forward periods, available tax planning opportunities and other relevant considerations. Each quarter, the Group re-evaluates its estimate related to deferred tax assets, including its assumptions about future profitability.

The Group believes that the accounting estimate related to the deferred tax assets is a critical accounting estimate because the underlying assumptions can change from period to period and requires significant management judgment. For example, tax law changes or variances in future projected operating performance could result in a change of the deferred tax asset. If the Group was not able to realize all or part of its net deferred tax assets in the future, an adjustment to its deferred tax assets would be charged to income tax expense or directly to equity in the period such determination was made. If the Group was to recognize previously unrecognized deferred tax assets in the future, an adjustment to its deferred tax asset would be credited to income tax expense or directly to equity in the period such determination was made.

For further information on the Group's deferred taxes (including quantitative disclosures on recognized deferred tax assets) see Note 36 "Income Taxes".

Business Combinations and Noncontrolling Interests

The Group uses the acquisition method to account for business combinations. At the date the Group obtains control of the subsidiary, the cost of an acquisition is measured at the fair value of the consideration given, including any cash or non-cash consideration (equity instruments) transferred, any contingent consideration, any previously held equity interest in the acquiree and liabilities incurred or assumed. The excess of the aggregate of the cost of an acquisition and any noncontrolling interests in the acquiree over the Group's share of the fair value of the identifiable net assets acquired is recorded as goodwill. If the aggregate of the acquisition cost and any noncontrolling interests is below the fair value of the identifiable net assets (negative goodwill), a gain is reported in other income. Acquisition-related costs are recognized as expenses in the period in which they are incurred.

In business combinations achieved in stages ("step acquisitions"), a previously held equity interest in the acquiree is remeasured to its acquisition-date fair value and the resulting gain or loss, if any, is recognized in profit or loss. Amounts recognized in prior periods in other comprehensive income associated with the previously held investment would be recognized on the same basis as would be required if the Group had directly disposed of the previously held equity interest.

Noncontrolling interests are shown in the consolidated balance sheet as a separate component of equity, which is distinct from the Group's shareholders' equity. The net income attributable to noncontrolling interests is separately disclosed on the face of the Consolidated Statement of Income. Changes in the ownership interest in subsidiaries which do not result in a change of control are treated as transactions between equity holders and are reported in additional paid-in capital ("APIC").

Non-Current Assets Held for Sale

Individual non-current non-financial assets (and disposal groups) are classified as held for sale if they are available for immediate sale in their present condition subject only to the customary sales terms of such assets (and disposal groups) and their sale is considered highly probable. For a sale to be highly probable, management must be committed to a sales plan and actively looking for a buyer. Furthermore, the assets (and disposal groups) must be actively marketed at a reasonable sales price in relation to their current fair value and the sale should be expected to be completed within one year. Non-current non-financial assets (and disposal groups) which meet the criteria for held for sale classification are measured at the lower of their carrying amount and fair value less costs to sell and are presented within "Other assets" and "Other liabilities" in the balance sheet. The comparatives are not represented when non-current assets (and disposal groups) are classified as held for sale. If the disposal group contains financial instruments, no adjustment to their carrying amounts is permitted.

Property and Equipment

Property and equipment includes own-use properties, leasehold improvements, furniture and equipment and software (operating systems only). Own-use properties are carried at cost less accumulated depreciation and accumulated impairment losses. Depreciation is generally recognized using the straight-line method over the estimated useful lives of the assets. The range of estimated useful lives is 25 to 50 years for property and 3 to 10 years for furniture and equipment (including initial improvements to purchased buildings). Leasehold improvements are capitalized and subsequently depreciated on a straight-line basis over the shorter of the term of the lease and the estimated useful life of the improvement, which generally ranges from 3 to 18 years. Depreciation of property and equipment is included in general and administrative expenses. Maintenance and repairs are also charged to general and administrative expenses. Gains and losses on disposals are included in other income.

Property and equipment are assessed for any indication of impairment at each quarterly reporting date. If such indication exists, the recoverable amount, which is the higher of fair value less costs to sell and value in use, must be estimated and an impairment charge is recorded to the extent the recoverable amount is less than its carrying amount. Value in use is the present value of the future cash flows expected to be derived from the asset. After the recognition of impairment of an asset, the depreciation charge is adjusted in future periods to reflect the asset's revised carrying amount. If an impairment is later reversed, the depreciation charge is adjusted prospectively.

Properties leased under a finance lease are capitalized as assets in property and equipment and depreciated over the terms of the leases.

Financial Guarantees

Financial guarantee contracts are contracts that require the issuer to make specified payments to reimburse the holder for a loss it incurs because a specified debtor fails to make payments when due in accordance with the terms of a debt instrument.

The Group has chosen to apply the fair value option to certain written financial guarantees that are managed on a fair value basis. Financial guarantees that the Group has not designated at fair value are recognized initially in the financial statements at fair value on the date the guarantee is given. Subsequent to initial recognition, the Group's liabilities under such guarantees are measured at the higher of the amount initially recognized, less cumulative amortization, and the best estimate of the expenditure required to settle any financial obligation as of the balance sheet date. These estimates are determined based on experience with similar transactions and history of past losses, and management's determination of the best estimate.

Any increase in the liability relating to guarantees is recorded in the Consolidated Statement of Income in provision for credit losses.

Leasing Transactions

The Group enters into lease contracts, predominantly for premises, as a lessee. The terms and conditions of these contracts are assessed and the leases are classified as operating leases or finance leases according to their economic substance at inception of the lease.

Assets held under finance leases are initially recognized on the consolidated balance sheet at an amount equal to the fair value of the leased property or, if lower, the present value of the minimum lease payments. The corresponding liability to the lessor is included in the Consolidated balance sheet as a finance lease obligation. The discount rate used in calculating the present value of the minimum lease payments is either the interest rate implicit in the lease, if it is practicable to determine, or the incremental borrowing rate. Contingent rentals are recognized as an expense in the periods in which they are incurred.

Operating lease rentals payable are recognized as an expense on a straight-line basis over the lease term, which commences when the lessee controls the physical use of the property. Lease incentives are treated as a reduction of rental expense and are also recognized over the lease term on a straight-line basis. Contingent rentals arising under operating leases are recognized as an expense in the period in which they are incurred.

Employee Benefits

Pension Benefits

The Group provides a number of pension plans. In addition to defined contribution plans, there are retirement benefit plans accounted for as defined benefit plans. The assets of all the Group's defined contribution plans are held in independently administered funds. Contributions are generally determined as a percentage of salary and are expensed based on employee services rendered, generally in the year of contribution.

All retirement benefit plans accounted for as defined benefit plans are valued using the projected unit-credit method to determine the present value of the defined benefit obligation and the related service costs. Under this method, the determination is based on actuarial calculations which include assumptions about demographics, salary increases and interest and inflation rates. Actuarial gains and losses are recognized in other comprehensive income and presented in equity in the period in which they occur. The majority of the Group's benefit plans is funded.

Other Post-Employment Benefits

In addition, the Group maintains unfunded contributory post-employment medical plans for a number of current and retired employees who are mainly located in the United States. These plans pay stated percentages of eligible medical and dental expenses of retirees after a stated deductible has been met. The Group funds these plans on a cash basis as benefits are due. Analogous to retirement benefit plans these plans are valued using the projected unit-credit method. Actuarial gains and losses are recognized in full in the period in which they occur in other comprehensive income and presented in equity.

Refer to Note 35 "Employee Benefits" for further information on the accounting for pension benefits and other post-employment benefits.

Termination benefits

Termination benefits arise when employment is terminated by the Group before the normal retirement date or whenever an employee accepts voluntary redundancy in exchange for these benefits. The Group recognizes termination benefits as a liability and an expense if the Group is demonstrably committed to a detailed formal plan without realistic possibility of withdrawal. In the case of an offer made to encourage voluntary redundancy, termination benefits are measured based on the number of employees expected to accept the offer. Benefits falling due more than twelve months after the end of the reporting period are discounted to their present value. The discount rate is determined by reference to market yields on high-quality corporate bonds.

Share-Based Compensation

Compensation expense for awards classified as equity instruments is measured at the grant date based on the fair value of the share-based award. For share awards, the fair value is the quoted market price of the share reduced by the present value of the expected dividends that will not be received by the employee and adjusted for the effect, if any, of restrictions beyond the vesting date. In case an award is modified such that its fair value immediately after modification exceeds its fair value immediately prior to modification, a remeasurement takes place and the resulting increase in fair value is recognized as additional compensation expense.

The Group records the offsetting amount to the recognized compensation expense in additional paid-in capital ("APIC"). Compensation expense is recorded on a straight-line basis over the period in which employees perform services to which the awards relate or over the period of the tranches for those awards delivered in tranches. Estimates of expected forfeitures are periodically adjusted in the event of actual forfeitures or for changes in expectations. The timing of expense recognition relating to grants which, due to early retirement provisions, include a nominal but non-substantive service period are accelerated by shortening the amortization period of the expense from the grant date to the date when the employee meets the eligibility criteria for the award, and not the vesting date. For awards that are delivered in tranches, each tranche is considered a separate award and amortized separately.

Compensation expense for share-based awards payable in cash is remeasured to fair value at each balance sheet date and recognized over the vesting period in which the related employee services are rendered. The related obligations are included in other liabilities until paid.

Obligations to Purchase Common Shares

Forward purchases of Deutsche Bank shares, and written put options where Deutsche Bank shares are the underlying, are reported as obligations to purchase common shares if the number of shares is fixed and physical settlement for a fixed amount of cash is required. At inception, the obligation is recorded at the present value of the settlement amount of the forward or option. For forward purchases and written put options of Deutsche Bank shares, a corresponding charge is made to shareholders' equity and reported as equity classified as an obligation to purchase common shares.

The liabilities are accounted for on an accrual basis, and interest costs, which consist of time value of money and dividends, on the liability are reported as interest expense. Upon settlement of such forward purchases and written put options, the liability is extinguished and the charge to equity is reclassified to common shares in treasury.

Deutsche Bank common shares subject to such forward contracts are not considered to be outstanding for purposes of basic earnings per share calculations, but are for dilutive earnings per share calculations to the extent that they are, in fact, dilutive.

Option and forward contracts on Deutsche Bank shares are classified as equity if the number of shares is fixed and physical settlement is required. All other contracts in which Deutsche Bank shares are the underlying are recorded as financial assets or liabilities at fair value through profit or loss.

Consolidated Statement of Cash Flows

For purposes of the consolidated statement of cash flows, the Group's cash and cash equivalents include highly liquid investments that are readily convertible into cash and which are subject to an insignificant risk of change in value. Such investments include cash and balances at central banks and demand deposits with banks.

The Group's assignment of cash flows to the operating, investing or financing category depends on the business model ("management approach"). For the Group the primary operating activity is to manage financial assets and financial liabilities. Therefore, the issuance and management of long-term borrowings is a core operating activity which is different than for a non-financial company, where borrowing is not a principal revenue producing activity and thus is part of the financing category.

The Group views the issuance of senior long-term debt as an operating activity. Senior long-term debt comprises structured notes and asset-backed securities, which are designed and executed by Corporate & Investment Bank business lines and which are revenue generating activities. The other component is debt issued by Treasury, which is considered interchangeable with other funding sources; all of the funding costs are allocated to business activities to establish their profitability.

Cash flows related to subordinated long-term debt and trust preferred securities are viewed differently than those related to senior-long term debt because they are managed as an integral part of the Group's capital, primarily to meet regulatory capital requirements. As a result they are not interchangeable with other operating liabilities, but can only be interchanged with equity and thus are considered part of the financing category.

The amounts shown in the consolidated statement of cash flows do not precisely match the movements in the consolidated balance sheet from one period to the next as they exclude non-cash items such as movements due to foreign exchange translation and movements due to changes in the group of consolidated companies.

Movements in balances carried at fair value through profit or loss represent all changes affecting the carrying value. This includes the effects of market movements and cash inflows and outflows. The movements in balances carried at fair value are usually presented in operating cash flows.

02 – Recently Adopted and New Accounting Pronouncements

Recently Adopted Accounting Pronouncements

The following are those accounting pronouncements which are relevant to the Group and which have been adopted during 2018 in the preparation of these consolidated financial statements.

IFRS 2 Share-based Payments

On January 1, 2018, the Group adopted amendments to IFRS 2, "Share-based Payment" which clarify the accounting for certain types of share-based payment transactions. The amendments which were developed through the IFRS Interpretations Committee clarify the accounting for cash-settled share-based payment transactions that include a performance condition, the classification of share-based payment transactions with net settlement features and the accounting for modifications of share-based payment transactions from cash-settled to equity-settled. The amendments did not have a material impact on the Group's consolidated financial statements.

IFRS 9 Financial Instruments

On January 1, 2018, the Group adopted IFRS 9 "Financial Instruments", which replaces IAS 39, "Financial Instruments: Recognition and Measurement". IFRS 9 introduces new requirements on how an entity should classify and measure financial assets, requires changes to the reporting of 'own credit' with respect to issued debt liabilities that are designated at fair value, replaces the rules for impairment of financial assets and amends the requirements for hedge accounting. The standard also requires entities to provide users of financial statements with more informative and relevant disclosures. The standard has been endorsed by the European Union (EU).

As a result of IFRS 9, Deutsche Bank has introduced changes to the financial statements presentation. These changes relate to specific line items in the consolidated income statement and consolidated balance sheet.

IFRS 9 incorporates new hedge accounting rules that intend to better align hedge accounting with risk management practices. Generally, some restrictions under IAS 39 rules have been removed and a greater variety of hedging instruments and hedged items become available for hedge accounting. IFRS 9 includes an accounting policy choice to defer the adoption of IFRS 9 hedge accounting and to continue with IAS 39 hedge accounting. The Group has decided to exercise this accounting policy choice and did not adopt IFRS 9 hedge accounting as of January 1, 2018. However, the Group implemented the revised hedge accounting disclosures that are required by the IFRS 9 related amendments to IFRS 7 “Financial Instruments: Disclosures”.

In October 2017, the IASB issued an amendment to IFRS 9 "Prepayment Features with Negative Compensation", which allows entities to measure particular pre-payable financial assets with so-called negative compensation (also known as two way break clauses) at amortized cost or at fair value through other comprehensive income if the prepayment amount substantially represents unpaid principal and interest and reasonable compensation. Reasonable compensation may be positive or negative. Prior to this amendment financial assets with this negative compensation feature would have failed the solely payments of principal and interest test and have been mandatorily measured at fair value through profit or loss. The amendment has been endorsed by the EU and is effective for annual periods beginning on or after January 1, 2019, with early adoption allowed. In the second quarter of 2018, the Group adopted the amendments to IFRS 9 “Prepayment Features with Negative Compensation”. The amendments did not have a material impact on the IFRS 9 Transition Impact Analysis.

IFRS 9 Transition Impact Analysis

The purpose of this section is to describe the key aspects of the changes following the adoption of IFRS 9 with regards to classification and measurement and impairment as well as to provide an overview of the impact on key ratios, regulatory capital, Total Shareholders’ Equity and Risk Weighted Assets (RWA) at Deutsche Bank. This section provides a movement analysis from IAS 39 reported numbers as included in the Deutsche Bank Annual Report 2017 to IFRS 9 numbers as adopted from January 1, 2018.

The transition rules of IFRS 9 do not require a retrospective application to prior periods, accordingly the initial adoption effect is reflected in the opening balance of Shareholders’ equity for the financial year 2018. Comparative periods in this report are presented in the structure according to IAS 39.

Key metrics

		IAS 39 Dec 31, 2017	IFRS 9 Jan 1, 2018 [1]	Impact
IFRS Total shareholders’ equity	in € m	63,174	62,503	(671)
Common Equity Tier 1 capital fully loaded	in € m	48,300	47,907	(393)
Risk Weighted Assets	in € bn	344	345	0.5
Tier 1 Capital fully loaded	in € m	52,921	52,528	(393)
CET 1 Ratio fully loaded	in %	14.0	13.9	(13)[2]
Leverage Exposure	in € bn	1,395	1,395	(0.4)
Leverage Ratio fully loaded	in %	3.8	3.8	(3)[2]
Leverage Ratio phase-in	in %	4.1	4.1	(3)[2]

[1] Pro forma.
[2] In bps.

The implementation of IFRS 9 as of January 1, 2018 led to a decrease of Deutsche Bank’s Shareholders’ equity of € 671 million including a tax benefit of € 199 million. Regulatory capital decreased by € 393 million due to a lower deduction of expected credit losses exceeding impairments for these exposures under the regulatory internal rating based approach (IRBA). Fully loaded CET 1 ratio decreased by 13 basis points, higher than earlier estimates due to refinements to the calculation of the impact of reducing the deduction for expected credit losses, and fully loaded Leverage Ratio is lower by 3 basis points.

Deutsche Bank decided not to apply transitional rules for calculating regulatory ratios pursuant to CRR Art. 473a. This section will therefore only refer to the full IFRS 9 impact.

Impact on Regulatory Capital, RWA, and Leverage Exposure

Fully loaded

in € m.	Total shareholders' equity per accounting balance sheet	Common Equity Tier 1 capital	Tier 1 Capital
Balance as of Dec 31, 2017	**63,174**	**48,300**	**52,921**
IFRS 9 changes from	(870)	(870)	(870)
Classification and Measurement	(193)	(193)	(193)
Impairments	(677)	(677)	(677)
Tax effects from	199	199	199
Classification and Measurement	65	65	65
Impairments	134	134	134
IFRS 9 impact net of tax	(671)	(671)	(671)
Changes to regulatory deductions			
Negative amounts resulting from the calculation of expected loss amounts		278	278
Balance as of Jan 1, 2018[1]	**62,503**	**47,907**	**52,528**

[1] Pro forma.

in € bn	Risk Weighted Assets	Leverage Exposure
Balance as of Dec 31, 2017	**344**	**1,395**
Changes from	0	(0)
DTA RWA / Change of Total Assets	1	(1)
SA RWA/ Lower Deductions	(0)	0
Balance as of Jan 1, 2018[1]	**345**	**1,395**
Ratios as of Dec 31, 2017	14.0 %	3.8 %
Ratios as of Jan 1, 2018[1]	13.9 %	3.8 %
Change in bps	(13)	(3)

[1] Pro forma.

Transitional rules

in € m.	Total shareholders' equity per accounting balance sheet	Common Equity Tier 1 capital	Tier 1 Capital
Balance as of Dec 31, 2017	**63,174**	**50,808**	**57,631**
IFRS 9 changes from	(870)	(870)	(870)
Classification and Measurement	(193)	(193)	(193)
Impairments	(677)	(677)	(677)
Tax effects from	199	199	199
Classification and Measurement	65	65	65
Impairments	134	134	134
IFRS 9 impact net of tax	(671)	(671)	(671)
Changes to regulatory deductions			
Negative amounts resulting from the calculation of expected loss amounts		223	278
Balance as of Jan 1, 2018[1]	**62,503**	**50,359[2]**	**57,238**

[1] Pro forma.
[2] Pro forma view considering 80 % phase-in according to CRR transitional rules.

in € bn	Risk Weighted Assets	Leverage Exposure
Balance as of Dec 31, 2017	**343**	**1,396**
Changes from	0	0
DTA RWA / Change of Total Assets	1	0
SA RWA/ Lower Deductions	(0)	0
Balance as of Jan 1, 2018[1]	**344**	**1,396**
Ratios as of Dec 31, 2017	14.8 %	4.1 %
Ratios as of Jan 1, 2018[1]	14.6 %	4.1 %
Change in bps	(15)	(3)

[1] Pro forma.

Main Credit Exposure Categories by Business Divisions

With the introduction of IFRS 9 Deutsche Bank reviewed the way how credit risk exposure is presented within the Risk Report. The definition of the Main Credit Exposure Categories were expanded and instead of only showing a certain subset of products, it was decided to show all products, regardless of their classification and measurement under IFRS 9. The below table presents the 2017 comparative amounts for each Main Credit Exposure Category. A description of the categories is included in the "Credit Risk Exposure" section of the Risk Report.

	Loans		Off-balance sheet		OTC derivatives		Debt securities		Repo and repo-style transactions		Total	
in € m.	Dec 31, 2018	Dec 31, 2017	Dec 31, 2018	Dec 31, 2017	Dec 31, 2018	Dec 31, 2017	Dec 31, 2018	Dec 31, 2017	Dec 31, 2018	Dec 31, 2017	Dec 31, 2018	Dec 31, 2017
Corporate & Investment Bank	164,163	153,473	217,203	206,021	27,028	30,993	90,062	86,272	76,032	99,335	574,488	576,094
Private & Commercial Bank	269,384	270,398	45,969	46,082	353	422	12,387	14,421	260	835	328,353	332,158
Asset Management	68	87	131	69	0	0	419	106	0	0	618	262
Corporate & Other	216	26	351	159	37	15	39,989	42,187	5,175	4,630	45,768	47,017
Total	**433,832**	423,984	**263,654**	252,331	**27,417**	31,430	**142,857**	142,986	**81,467**	104,800	**949,227**	955,531

Classification and Measurement

The following table provides an overview of the impact of the changes to total assets under classification and measurement from IAS 39 as of December 31, 2017 to IFRS 9 as of January 1, 2018, excluding allowances for On- and Off-Balance Sheet positions, affected by IFRS 9.

in € m.	IAS 39 carrying amount Dec 31, 2017 (i)	Reclassifications (ii)	Remeasurements (iii)	IFRS 9 carrying amount Jan 1, 2018 (iv=i+ii+iii)
Fair Value through Profit or Loss				
From Available for Sale (IAS 39)	-	2,535	(3)	-
From Amortized Cost (IAS 39)	-	41,914	(3)	-
To Amortized Cost (IFRS 9)	-	(5,900)	-	-
To Fair Value through Other Comprehensive Income (IFRS 9)	-	(6,508)	-	-
Total Fair Value through Profit or Loss	636,970	32,041	(6)	669,004
Fair Value through Other Comprehensive Income				
From Available for Sale (IAS 39)	-	41,219	(104)	-
From Amortized Cost (IAS 39)	-	9,943	64	-
From Fair Value through Profit or Loss (IAS 39)	-	6,508	-	-
To Amortized Cost (IFRS 9)	-	-	-	-
To Fair Value through Profit or Loss (IFRS 9)	-	-	-	-
Total Fair Value through Other Comprehensive Income	-	57,671	(40)	57,631
Amortized Cost				
From Amortized Cost (IAS 39)	-	-	-	-
From Available for Sale (IAS 39)	-	5,642	24	-
From Fair Value through Profit or Loss (IAS 39)	-	5,900	(184)	-
To Fair Value through Other Comprehensive Income (IFRS 9)	-	(6,773)	-	-
To Fair Value through Profit or Loss (IFRS 9)	-	(41,914)	-	-
Total Amortized Cost	780,721	(37,145)	(159)	743,417
Tax Assets	8,396	-	230	8,626
Available for Sale (IAS 39)	49,397	(49,397)	-	-
Held to Maturity (IAS 39)	3,170	(3,170)	-	-
Total Financial Asset balances affected by IFRS 9, Reclassifications and Remeasurements	1,478,654	0	24	1,478,678

Impairment

The following table provides an overview of IAS 39 allowance for all debt instruments that are measured at amortized costs or fair value through other comprehensive income and off-balance sheet lending commitments, including financial guarantees (referred to as On- and Off-Balance Sheet positions in the table below) as of December 31, 2017 to the IFRS 9 expected credit loss allowance as of January 1, 2018.

in € m.	IAS 39 Allowance for On-and Off-Balance Sheet positions as at Dec 31, 2017 (i)	Changes due to reclassifications (ii)	Changes due to the introduction of the IFRS 9 ECL model (iii)	IFRS 9 Allowance for On-and Off-Balance Sheet Positions as at Jan 1, 2018 (iv=i+ii+iii)
Fair Value through profit or loss				
From available for sale (IAS 39)				
	-	-	-	-
From amortized cost (IAS 39)	-	-	-	-
To amortized cost (IFRS 9)				
	-	-	-	-
To fair value through other comprehensive income (IFRS 9)	-	-	-	-
Total Fair Value through Profit or Loss	-	-	-	-
Fair Value through other comprehensive income				
From available for sale (IAS 39)	-	-	12	12
From amortized cost (IAS 39)	-	-	0	0
From fair value through profit or loss (IAS 39)	-	-	-	-
To amortized cost (IFRS 9)	-	-	-	-
To fair value through profit or loss (IFRS 9)	-	-	-	-
Total Fair Value through Other Comprehensive Income	-	-	12	12
Amortized cost				
From amortized cost (IAS 39)	3,856	-	737	4,594
From available for sale (IAS 39)	-	-	-	-
From fair value through profit or loss (IAS 39)	-	-	9	9
To fair value through other comprehensive income (IFRS 9)	10	(10)	-	-
To fair value through profit or loss (IFRS 9)	55	(55)	-	-
Total Amortized Cost	3,921	(65)	746	4,603
Total On Balance Sheet Positions affected by IFRS 9 ECL Model	3,921	(65)	758	4,615
Off Balance Sheet	285	-	(6)	280
Total On- and Off Balance Sheet Positions affected by IFRS 9 ECL Model	4,207	(65)	753	4,894

IFRS 15 Revenue from Contracts with Customers

On January 1, 2018, the Group adopted IFRS 15, "Revenue from Contracts with Customers" (including the amendments issued subsequently to the original issuance of IFRS 15), which specifies how and when revenue is recognized, but does not impact income recognition related to financial instruments in scope of IFRS 9. The new requirements replace several other IFRS standards and interpretations that governed revenue recognition under IFRS and provides a single, principles-based five-step model to be applied to all contracts with customers. The Standard also requires entities to provide users of financial statements with more informative and relevant disclosures. The Group has exercised the initial application relief and applied the cumulative effect method, which allowed the Group to apply IFRS 15 to reporting periods beginning on or after January 1, 2018. IFRS 15 did not have a material impact on the Group's consolidated financial statements. The impact has been limited to the presentation of enhanced disclosures, including a disaggregation of the Group's revenue types prior to deduction of associated expenses.

New Accounting Pronouncements

The following accounting pronouncements were not effective as of December 31, 2018 and therefore have not been applied in preparing these financial statements.

IFRS 3 Business Combinations

In October 2018, the IASB issued amendments to IFRS 3 "Business Combinations". These amendments clarify the determination of whether an acquisition made is of a business or a group of assets. The amended definition of a business emphasizes that the output of a business is to provide goods and services to customers, whereas the previous definition focused on returns in the form of dividends, lower costs or other economic benefits to investors and others. Distinguishing between a business and a group of assets is important because an acquirer recognizes goodwill only when acquiring a business. The amendments will be effective for annual periods beginning on or after January 1, 2020 with early adoption permitted. The amendments will not have a material impact on the Group's consolidated financial statements. These amendments have yet to be endorsed by the EU.

IFRS 16 Leases

In January 2016, the IASB issued IFRS 16, “Leases”, which introduces a single lessee accounting model and requires a lessee to recognize assets and liabilities for all leases with a term of more than 12 months, unless the underlying asset is of low value. A lessee is required to recognize a right-of-use asset representing its right to use the underlying leased asset and a lease liability representing its obligation to make lease payments. There will be only minor changes to the current accounting for lessors. The standard also requires entities to provide users of financial statements with more informative and relevant disclosures. IFRS 16 is effective for annual periods beginning on or after January 1, 2019. The standard has been endorsed by the EU.

The Group has analyzed the impact of the initial application of IFRS 16 in a Group-wide implementation program. The majority of leases are for land and buildings; other categories are company cars and technical/IT equipment.

The Group will apply the practical expedient in IFRS 16 to contracts that were identified as leases applying IAS 17, “Leases”, and IFRIC 4, “Determining whether an Arrangement contains a Lease”, on transition.

The Group has chosen to apply the modified retrospective transition approach, without restatement of comparative figures. Under the modified retrospective approach, the Group can choose on a lease by lease basis to either (i) measure the right-of-use asset at the same amount as the lease liability, or (ii) to measure the right-of-use asset retrospectively using the transition discount rate. For approach (ii), the resulting difference between the right-of-use asset and the lease liability will be recognized as an adjustment to the opening balance of retained earnings on transition.

On initial application the Group will apply approach (i) to leases classified as operating leases under IAS 17 except for larger property leases where the Group will elect to apply approach (ii) which is expected to result in an adjustment to the opening balance of retained earnings on transition of € 150 million, taking deferred taxes into account.

In addition, provisions previously recognized for onerous operating leases as well as accrued operating liabilities will be derecognized upon transition, and the value of the right-of-use assets will be reduced by that same amount.

The expected impact upon adoption will result in an approximately € 3.3 billion and € 3.5 billion increase in the balance sheet related to the recognition of right of use assets and corresponding liabilities, respectively. This will lead to an overall reduction in the Group’s total shareholders’ equity of € 150 million, taking deferred taxes into account. These estimates may change as the Group finalizes its implementation project in the first quarter of 2019.

IFRS 17 Insurance Contracts

In May 2017, the IASB issued IFRS 17, “Insurance Contracts”, which establishes the principles for the recognition, measurement, presentation and disclosure of insurance contracts within the scope of the standard. IFRS 17 replaces IFRS 4 which has given companies dispensation to carry on accounting for insurance contracts using national accounting standards, resulting in a multitude of different approaches. IFRS 17 solves the comparison problems created by IFRS 4 by requiring all insurance contracts to be accounted for in a consistent manner, benefiting both investors and insurance companies. Insurance obligations will be accounted for using current values – instead of historical cost. The information will be updated regularly, providing more useful information to users of financial statements. IFRS 17 is effective for annual periods beginning on or after January 1, 2021. Based on the Group’s current business activities it is expected that IFRS 17 will not have a material impact on the Group’s consolidated financial statements. The standard has yet to be endorsed by the EU.

Improvements to IFRS 2015-2017 Cycles

In December 2017, the IASB issued amendments to multiple IFRS standards, which resulted from the IASB’s annual improvement project for the 2015-2017 cycles. This comprises amendments that result in accounting changes for presentation, recognition or measurement purposes as well as terminology or editorial amendments related to IFRS 3 “Business combinations”, IAS 12 “Income taxes” and IAS 23 “Borrowing costs”. The amendments will be effective for annual periods beginning on or after January 1, 2019, with early adoption permitted. The Group expects that the amendments will not have a material impact on the Group’s consolidated financial statements. The amendments have been endorsed by the EU.

03 – Acquisitions and Dispositions

Business Combinations

During the years 2018, 2017 and 2016, the Group did not undertake any acquisitions accounted for as business combinations.

Acquisitions and Dispositions of Noncontrolling Interests while Retaining Control

Deutsche Bank's Ownership Interest following Initial Public Offering of DWS shares

Deutsche Bank announced on February 26, 2018 its intention to proceed with the planned Initial Public Offering ("IPO") of its subsidiary DWS Group GmbH & Co. KGaA ("DWS") on the regulated market of the Frankfurt Stock Exchange. The IPO consisted purely of the sale of existing shares directly held by DWS's sole shareholder, DB Beteiligungs Holding GmbH, a 100 % subsidiary of Deutsche Bank AG. The total placement volume is comprised of 44.5 million DWS shares including over-allotments (greenshoe) of 4.5 million shares.

As announced on March 22, 2018, the placement price for shares offered in the IPO had been set at € 32.50 per share. As of March 31, 2018, 40.0 million DWS shares were sold to new investors. Based on the placement price, the market capitalization of DWS amounted to € 6.5 billion. Deutsche Bank received gross proceeds of € 1.3 billion from the placement of DWS shares, resulting in investors other than Deutsche Bank holding 20.0 % of DWS. Subsequently, Deutsche Bank remains DWS's majority shareholder post IPO.

The final carrying amount of DWS's net assets in the Group's consolidated financial statements on the date of the IPO was € 6.0 billion. This includes the net assets from the U.S. Asset Management business transferred to DWS on April 2, 2018 which was subject to contractually binding agreements between the Group entities involved and constituted an element of the offering.

The following table summarizes the effect of changes in Deutsche Bank's ownership interest in DWS and their impact on shareholders' equity at the end of the reporting period:

Deutsche Bank's Ownership Interest in DWS and Impact on Shareholders' Equity

in €	2018
Deutsche Bank's ownership interest at the time of the IPO	5,991
Net decrease in Deutsche Bank's ownership interest	(1,229)
Deutsche Bank's share of net income or loss	239
Deutsche Bank's share of other comprehensive income	149
Deutsche Bank's share of other equity changes	37
Deutsche Bank's ownership interest in DWS at the end of the reporting period	5,187
Excess amount from the IPO	73
Total effect on shareholders' equity from a change in Deutsche Bank's ownership interest in DWS, at the end of the reporting period	5,260

By the end of the stabilization period (April 20, 2018), out of the total greenshoe volume of 4.5 million shares, 1,018,128 shares were allocated to new shareholders, which increased the proportion of outside shareholders in DWS to 20.51 %.

Dispositions

During 2018, 2017 and 2016, the Group finalized several dispositions of subsidiaries/businesses. These disposals are mainly of businesses the Group had previously classified as held for sale. Accordingly, dispositions in 2018 included the partial sale of the Polish PCB business, while disposals in 2017 contained the Group's Argentine subsidiary Deutsche Bank S.A. and Sal. Oppenheim's Luxembourg-based fund administration and custody business. Divestitures in 2016 comprised the sale of Abbey Life and Maher Terminals Port Elizabeth. For more detail on these transactions, please refer to Note 26 "Non-Current Assets and Disposal Groups Held for Sale". The total consideration received for these dispositions (thereof in cash) in 2018, 2017 and 2016 was € 398 million (cash € 164 million), € 129 million (cash) and € 2.0 billion (cash), respectively. The table below shows the assets and liabilities that were included in these disposals.

in € m.	2018	2017	2016
Cash and cash equivalents	50	47	0
All remaining assets	4,619	848	14,858
Total assets disposed	**4,669**	895	14,858
Total liabilities disposed	**6,035**	814	12,250

04 – Business Segments and Related Information

The Group's segmental information has been prepared in accordance with the "management approach", which requires presentation of the segments on the basis of the internal management reports of the entity which are regularly reviewed by the chief operating decision maker, which is the Deutsche Bank Management Board, in order to allocate resources to a segment and to assess its financial performance.

Business Segments

The Group's segment reporting follows the organizational structure as reflected in its internal management reporting systems, which are the basis for assessing the financial performance of the business segments and for allocating resources to the business segments. Generally, restatements due to changes in the organizational structure were implemented in the presentation of prior period comparables if they were considered in the Group's management reporting systems.

Our business operations are organized under the divisional structure comprising the following corporate divisions:

- Corporate & Investment Bank ("CIB"),
- Private & Commercial Bank ("PCB"),
- Asset Management ("AM").

The key changes compared to Deutsche Bank's previously reported segmental information are outlined below.

In the first quarter of 2018, the definition of CIB's "Sales & Trading (FIC)" revenue category has been updated to improve alignment with peer reporting and enable more relevant comparisons. As a result, the category "Financing" ceased to exist and the majority of revenues previously reported under that category, for the year 2017 more than 95 %, has been moved into the "Sales & Trading (FIC)" category and the remainder into "Other". In the current quarter revenues related to Listed Derivatives & Clearing have been transferred from Sales & Trading (FIC) to Sales & Trading (Equities) to better align to the priorities of the business. The presentation of comparison periods has been adjusted accordingly.

In May 2018, Deutsche Bank successfully merged Deutsche Bank Privat- und Geschäftskunden AG and Postbank into DB Privat- und Firmenkundenbank AG. After the agreement to sell our retail business in Portugal and agreement for the partial sale of the Polish retail business in the first quarter of 2018, revenues from these Private and Commercial Clients International (PCCI) businesses, as well as Hua Xia Bank and the PCS disposed business are reported in a separate category to better reflect our exited businesses. As a result, since the second quarter of 2018, PCB's revenues are now reported as follows:

- Private and Commercial Business (Germany),
- Private and Commercial Business (International), which covers operations in Belgium, India, Italy and Spain,
- Wealth Management (Global), and
- Exited businesses, which covers operations in Poland and Portugal as well as Private Client Services (PCS) and Hua Xia Bank in historical periods.

The presentation of comparison periods has been adjusted accordingly.

In March 2017, Deutsche Bank announced its intention to pursue an initial public offering (IPO) of Deutsche Asset Management, which was completed in March 2018. Since March 23, 2018, shares of the holding company DWS Group GmbH & Co. KGaA are listed on the Frankfurt stock exchange. The corporate division "Deutsche Asset Management" was renamed "Asset Management" during the first quarter 2018. Deutsche Bank remains DWS's majority shareholder post IPO.

From 2018 onwards Group Infrastructure expenses are allocated to the corporate divisions based on Plan. Any delta between Plan and Actual allocations is captured centrally within "Corporate & Other". Infrastructure expenses relating to shareholder activities as defined in the OECD Transfer Pricing Guidelines, i.e. costs for specific group functions, are no longer allocated to segments, but instead held centrally and reported under "Corporate & Other (C&O)", formerly "Consolidation & Adjustments (C&A)". These infrastructure expenses amounted to € 422 million in 2018 and € 371 million in 2017. All categories previously reported under C&A, including valuation and timing differences as well as treasury-related and corporate items not allocated to the divisions, remain in C&O. The presentation of comparison periods has been adjusted accordingly.

From 2017 onwards, Non-Core Operations Unit (NCOU) ceased to exist as a standalone division. The remaining legacy assets as of December 31, 2016 are now managed by the corresponding operating segments, predominately in Corporate & Investment Bank and Private & Commercial Bank.

Measurement of Segment Profit or Loss

Segment reporting requires a presentation of the segment results based on management reporting methods, including a reconciliation between the results of the business segments and the consolidated financial statements, which is presented in the "Management Report: Operating and Financial Review: Deutsche Bank Group: Corporate Divisions: Corporate and Other". The information provided about each segment is based on internal management reporting about segment profit or loss, assets and other information which is regularly reviewed by the chief operating decision maker. Segment assets are presented in the Group's internal management reporting based on a consolidated view, i.e., the amounts do not include intersegment balances.

Non-IFRS compliant accounting methods are rarely used in the Group's management reporting and represent either valuation or classification differences. The largest valuation differences relate to measurement at fair value in management reporting versus measurement at amortized cost under IFRS and to the recognition of trading results from own shares in revenues in management reporting (mainly in CIB) and in equity under IFRS. The major classification difference relates to noncontrolling interest, which represents the net share of minority shareholders in revenues, provision for credit losses, noninterest expenses and income tax expenses. Noncontrolling interest is reported as a component of pre-tax income for the businesses in management reporting (with a reversal in C&O) and a component of net income appropriation under IFRS.

Since the Group's business activities are diverse in nature and its operations are integrated, certain estimates and judgments have been made to apportion revenue and expense items among the business segments.

The management reporting systems allocate the Group's external net interest income according to the value of funding consumed or provided by each business segment's activities, with transfer pricing referencing the Group's access to financing in the wholesale markets. Furthermore, to retain comparability with those competitors that have legally independent units with their own equity funding, the Group allocates a net notional interest benefit on its consolidated capital, in line with each segment's proportion of average shareholders' equity.

Management uses certain measures for equity and related ratios as part of its internal reporting system because it believes that these measures provide it with a useful indication of the financial performance of the business segments. The Group discloses such measures to provide investors and analysts with further insight into how management operates the Group's businesses and to enable them to better understand the Group's results. These measures include:

Allocation of Average Shareholders' Equity - Since 2017, Shareholders' equity is fully allocated to the Group's segments based on the regulatory capital demand of each segment and is no longer capped at the amount of shareholders' equity required to meet the externally communicated targets for the Group's Common Equity Tier 1 ratio and the Group's Leverage ratio. Regulatory capital demand reflects the combined contribution of each segment to the Groups' Common Equity Tier 1 ratio, the Groups' Leverage ratio and the Group's Capital Loss under Stress. Contributions in each of the three dimensions are weighted to reflect their relative importance and level of constraint for the Group. Contributions to the Common Equity Tier 1 ratio and the Leverage ratio are measured though Risk-Weighted Assets (RWA) and Leverage Ratio Exposure (LRE) assuming full implementation of CRR/CRD 4 rules. The Group's Capital Loss under Stress is a measure of the Group's overall economic risk exposure under a defined stress scenario. Goodwill and other intangibles continue to be directly attributed to the Group's segments in order to allow the determination of allocated tangible shareholders' equity and the respective returns. Shareholders' equity and tangible shareholders' equity is allocated on a monthly basis and averaged across quarters and for the full year. All reported periods in 2016 and 2017 have been restated.

Segment average shareholders' equity in December 2016 represents the spot values for the period end. The difference between the spot values of the segments and the average Group amount is captured in C&O.

For purposes of the 2017 average shareholders' equity allocation the Non-Core Operations Unit (NCOU) balances from year-end 2016 have been allocated to Corporate & Other (C&O) as Non-Core Operations Unit (NCOU) has ceased to exist as a separate corporate division from 2017 onwards.

Net interest income as a component of net revenue, income (loss) before income taxes and related ratios is presented on a fully taxable-equivalent basis for U.S. tax-exempt securities for the Corporate & Investment Bank. This enables management to measure performance of taxable and tax-exempt securities on a comparable basis. This presentation resulted in an increase in Corporate & Investment Bank net interest income of € 42.4 million for full year 2018 (€ 113.6 million for full year 2017, € 126.4 million for full year 2016). This increase is offset in Group consolidated figures through a reversal in C&O. The tax rate used in determining the fully taxable-equivalent net interest income in respect of the majority of the US tax-exempt securities is 21 % for 2018 and 35 % for 2017 and 2016.

Segmental Results of Operations

The following tables present the results of the Group's business segments, including the reconciliation to the consolidated results of operations under IFRS.

in € m. (unless stated otherwise)	Corporate & Investment Bank	Private & Commercial Bank	Asset Management	Non-Core Operations Unit	Corporate & Other	Total Consolidated
						2018
Net revenues[1]	13,046	10,158	2,186	–	(73)	25,316
Provision for credit losses	120	406	(1)	–	0	525
Noninterest expenses						
Compensation and benefits	3,970	4,001	787	–	3,055	11,814
General and administrative expenses	8,115	4,867	929	–	(2,624)	11,286
Policyholder benefits and claims	0	0	0	–	0	0
Impairment of goodwill and other intangible assets	0	0	0	–	0	0
Restructuring activities	287	55	19	–	0	360
Total noninterest expenses	12,372	8,923	1,735	–	431	23,461
Noncontrolling interests	24	(0)	85	–	(109)	0
Income (loss) before income taxes	530	829	367	–	(396)	1,330
Cost/income ratio	95 %	88 %	79 %	–	N/M	93 %
Assets[2]	988,531	343,704	10,030	–	5,872	1,348,137
Additions to non-current assets	514	516	43	–	575	1,647
Risk-weighted assets[3]	236,306	87,709	10,365	–	16,053	350,432
CRD 4 leverage exposure measure (spot value at reporting date)	892,653	354,584	5,044	–	20,644	1,272,926
Average shareholders' equity	43,427	14,514	4,669	–	0	62,610
Post-tax return on average tangible shareholders' equity[4]	1 %	5 %	18 %	–	N/M	1 %
Post-tax return on average shareholders' equity[4]	1 %	4 %	6 %	–	N/M	0 %
[1] includes:						
Net interest income	3,574	6,077	(52)	–	3,592	13,192
Net income (loss) from equity method investments	170	2	41	–	6	219
[2] includes:						
Equity method investments	556	78	240	–	5	879

N/M – Not meaningful

[3] Risk-weighted assets and capital ratios are based upon CRR/CRD 4 fully loaded.

[4] The post-tax return on average tangible shareholders' equity and average shareholders' equity at the Group level reflects the reported effective tax rate for the Group, which was 74 % for the year ended December 31, 2018. For the post-tax return on average tangible shareholders' equity and average shareholders' equity of the segments, the Group effective tax rate was adjusted to exclude the impact of permanent differences not attributed to the segments, so that the segment tax rates were 28 % for the year ended December 31, 2018.

in € m. (unless stated otherwise)	Corporate & Investment Bank	Private & Commercial Bank	Asset Management	Non-Core Operations Unit	Corporate & Other	Total Consolidated
						2017
Net revenues[1]	14,227	10,178	2,532	–	(489)	26,447
Provision for credit losses	213	313	(1)	–	(0)	525
Noninterest expenses						
Compensation and benefits	4,364	4,027	812	–	3,050	12,253
General and administrative expenses	8,441	5,012	978	–	(2,458)	11,973
Policyholder benefits and claims	0	0	0	–	0	0
Impairment of goodwill and other intangible assets	6	12	3	–	0	21
Restructuring activities	81	360	6	–	0	447
Total noninterest expenses	12,892	9,411	1,799	–	593	24,695
Noncontrolling interests	26	(12)	1	–	(16)	0
Income (loss) before income taxes	1,096	465	732	–	(1,066)	1,228
Cost/income ratio	91 %	93 %	71 %	–	N/M	93 %
Assets[2]	1,127,028	333,069	8,050	–	6,586	1,474,732
Additions to non-current assets	125	551	60	–	1,067	1,803
Risk-weighted assets[3]	231,574	87,472	8,432	–	16,734	344,212
CRD 4 leverage exposure measure (spot value at reporting date)	1,029,946	344,087	2,870	–	17,983	1,394,886
Average shareholders' equity	44,197	14,943	4,687	–	99	63,926
Post-tax return on average tangible shareholders' equity[4]	2 %	2 %	56 %	–	N/M	(1) %
Post-tax return on average shareholders' equity[4]	2 %	2 %	10 %	–	N/M	(1) %
[1] includes:						
Net interest income	4,104	5,875	(19)	–	2,418	12,378
Net income (loss) from equity method investments	81	3	44	–	9	137
[2] includes:						
Equity method investments	553	91	211	–	10	866

N/M – Not meaningful
[3] Risk-weighted assets and capital ratios are based upon CRR/CRD 4 fully loaded.
[4] The post-tax return on average tangible shareholders' equity and average shareholders' equity at the Group level reflects the reported effective tax rate for the Group, which was 160 % for the year ended December 31, 2017. For the post-tax return on average tangible shareholders' equity and average shareholders' equity of the segments, the Group effective tax rate was adjusted to exclude the impact of permanent differences not attributed to the segments, so that the segment tax rates were 33 % for the year ended December 31, 2017.

in € m. (unless stated otherwise)	Corporate & Investment Bank	Private & Commercial Bank	Asset Management	Non-Core Operations Unit	Corporate & Other	Total Consolidated
						2016
Net revenues[1]	16,764	11,090	3,015	(382)	(473)	30,014
Provision for credit losses	816	439	1	128	(0)	1,383
Noninterest expenses						
Compensation and benefits	4,062	4,075	737	68	2,931	11,874
General and administrative expenses	9,280	4,888	1,026	2,659	(2,398)	15,454
Policyholder benefits and claims	0	0	374	0	0	374
Impairment of goodwill and other intangible assets	285	0	1,021	(49)	(0)	1,256
Restructuring activities	299	142	47	4	(7)	484
Total noninterest expenses	13,926	9,104	3,205	2,682	525	29,442
Noncontrolling interests	49	0	0	(4)	(46)	0
Income (loss) before income taxes	1,973	1,547	(190)	(3,187)	(952)	(810)
Cost/income ratio	83 %	82 %	106 %	N/M	N/M	98 %
Assets[2]	1,201,894	329,869	12,300	5,523	40,959	1,590,546
Additions to non-current assets	22	480	1	0	1,517	2,019
Risk-weighted assets[3]	237,596	86,082	8,960	9,174	15,706	357,518
CRD 4 leverage exposure measure (spot value at reporting date)	954,203	342,424	3,126	7,882	40,018	1,347,653
Average shareholders' equity	40,312	14,371	4,460	690	2,249	62,082
Post-tax return on average tangible shareholders' equity[4]	3 %	8 %	71 %	N/M	N/M	(3) %
Post-tax return on average shareholders' equity[4]	3 %	7 %	(3) %	N/M	N/M	(2) %
[1] includes:						
Net interest income	6,314	6,201	326	142	1,724	14,707
Net income (loss) from equity method investments	138	5	44	269	(1)	455
[2] includes:						
Equity method investments	698	23	203	98	4	1,027

N/M – Not meaningful
[3] Risk-weighted assets and capital ratios are based upon CRR/CRD 4 fully loaded.
[4] The post-tax return on average tangible shareholders' equity and average shareholders' equity at the Group level reflects the reported effective tax rate for the Group, which was (67) % for the year ended December 31, 2016. For the post-tax return on average tangible shareholders' equity and average shareholders' equity of the segments, the Group effective tax rate was adjusted to exclude the impact of permanent differences not attributed to the segments, so that the segment tax rates were 35 % for the year ended December 31, 2016.

Corporate & Investment Bank

in € m. (unless stated otherwise)	2018	2017	2016	2018 increase (decrease) from 2017 in € m.	2018 increase (decrease) from 2017 in %	2017 increase (decrease) from 2016 in € m.	2017 increase (decrease) from 2016 in %
Net revenues							
Global Transaction Banking	3,834	3,917	4,419	(83)	(2)	(502)	(11)
Equity Origination	362	396	405	(34)	(9)	(9)	(2)
Debt Origination	1,081	1,327	1,393	(247)	(19)	(66)	(5)
Advisory	493	508	495	(16)	(3)	13	3
Origination and Advisory	1,935	2,232	2,292	(296)	(13)	(60)	(3)
Sales & Trading (Equity)	1,957	2,233	2,751	(276)	(12)	(518)	(19)
Sales & Trading (FIC)	5,361	6,447	7,066	(1,087)	(17)	(619)	(9)
Sales & Trading	7,317	8,680	9,817	(1,363)	(16)	(1,137)	(12)
Other	(40)	(601)	235	561	(93)	(836)	N/M
Total net revenues	**13,046**	14,227	16,764	(1,181)	(8)	(2,537)	(15)
Provision for credit losses	**120**	213	816	(94)	(44)	(603)	(74)
Noninterest expenses							
Compensation and benefits	3,970	4,364	4,062	(393)	(9)	302	7
General and administrative expenses	8,115	8,441	9,280	(326)	(4)	(839)	(9)
Impairment of goodwill and other intangible assets	0	6	285	(6)	N/M	(279)	(98)
Restructuring activities	287	81	299	205	N/M	(218)	(73)
Total noninterest expenses	**12,372**	12,892	13,926	(520)	(4)	(1,034)	(7)
Noncontrolling interests	**24**	26	49	(2)	(7)	(23)	(46)
Income (loss) before income taxes	**530**	1,096	1,973	(566)	(52)	(877)	(44)
Cost/income ratio	95 %	91 %	83 %	N/M	4 ppt	N/M	8 ppt
Assets[1]	988,531	1,127,028	1,201,894	(138,497)	(12)	(74,866)	(6)
Risk-weighted assets[2]	236,306	231,574	237,596	4,733	2	(6,022)	(3)
Average shareholders' equity[3]	43,427	44,197	40,312	(770)	(2)	3,885	10
Post-tax return on average tangible shareholders' equity	1 %	2 %	3 %	N/M	(1) ppt	N/M	(2) ppt
Post-tax return on average shareholders' equity	1 %	2 %	3 %	N/M	(1) ppt	N/M	(2) ppt

N/M – Not meaningful
[1] Segment assets represent consolidated view, i.e., the amounts do not include intersegment balances.
[2] Risk-weighted assets and capital ratios are based upon CRR/CRD 4 fully loaded.
[3] See "Measurement of Segment Profit or Loss" above for a description of how average shareholders' equity is allocated to the divisions.

Private & Commercial Bank

in € m. (unless stated otherwise)	2018	2017	2016	2018 increase (decrease) from 2017 in € m.	2018 increase (decrease) from 2017 in %	2017 increase (decrease) from 2016 in € m.	2017 increase (decrease) from 2016 in %
Net revenues:							
Private and Commercial Business (Germany)	6,802	6,583	6,873	220	3	(290)	(4)
Private and Commercial Business (International)[1]	1,439	1,455	1,466	(16)	(1)	(11)	(1)
Wealth Management (Global)	1,746	2,021	1,720	(274)	(14)	301	18
Exited businesses[2]	**170**	119	1,031	51	42	(912)	(88)
Total net revenues	**10,158**	10,178	11,090	(20)	(0)	(912)	(8)
Of which:							
Net interest income	6,077	5,875	6,201	202	3	(326)	(5)
Commissions and fee income	3,143	3,367	3,395	(224)	(7)	(28)	(1)
Remaining income	937	935	1,494	2	0	(558)	(37)
Provision for credit losses	**406**	313	439	93	30	(126)	(29)
Noninterest expenses:							
Compensation and benefits	4,001	4,027	4,075	(26)	(1)	(47)	(1)
General and administrative expenses	4,867	5,012	4,888	(145)	(3)	124	3
Impairment of goodwill and other intangible assets	0	12	0	(12)	N/M	12	N/M
Restructuring activities	55	360	142	(305)	(85)	218	154
Total noninterest expenses	**8,923**	9,411	9,104	(488)	(5)	307	3
Noncontrolling interests	**(0)**	(12)	0	12	(100)	(12)	N/M
Income (loss) before income taxes	**829**	465	1,547	363	78	(1,081)	(70)
Cost/income ratio	88 %	92 %	82 %	N/M	(5) ppt	N/M	10 ppt
Assets[3]	343,704	333,069	329,869	10,635	3	3,200	1
Risk-weighted assets[4]	87,709	87,472	86,082	237	0	1,390	2
Average shareholders' equity[5]	14,514	14,943	14,371	(429)	(3)	572	4
Post-tax return on average tangible shareholders' equity	5 %	2 %	8 %	N/M	2 ppt	N/M	(6) ppt
Post-tax return on average shareholders' equity	4 %	2 %	7 %	N/M	2 ppt	N/M	(5) ppt

N/M – Not meaningful
[1] Covers operations in Belgium, India, Italy and Spain.
[2] Covers operations in Poland and Portugal as well as Private Client Services (PCS) and Hua Xia in historical periods.
[3] Segment assets represent consolidated view, i.e., the amounts do not include intersegment balances.
[4] Risk-weighted assets and capital ratios are based upon CRR/CRD 4 fully loaded.
[5] See "Measurement of Segment Profit or Loss" above for a description of how average shareholders' equity is allocated to the divisions.

Asset Management

in € m. (unless stated otherwise)	2018	2017	2016	2018 increase (decrease) from 2017 in € m.	2018 increase (decrease) from 2017 in %	2017 increase (decrease) from 2016 in € m.	2017 increase (decrease) from 2016 in %
Net revenues							
Management Fees	2,115	2,247	2,190	(132)	(6)	57	3
Performance and transaction fees	91	199	220	(109)	(55)	(21)	(9)
Other revenues	(20)	86	209	(106)	N/M	(123)	(59)
Mark-to-market movements on policyholder positions in Abbey Life	0	0	396	0	N/M	(396)	N/M
Total net revenues	**2,186**	2,532	3,015	(346)	(14)	(483)	(16)
Provision for credit losses	**(1)**	(1)	1	(0)	67	(1)	N/M
Noninterest expenses							
Compensation and benefits	787	812	737	(25)	(3)	75	10
General and administrative expenses	929	978	1,026	(49)	(5)	(48)	(5)
Policyholder benefits and claims	0	0	374	(0)	N/M	(374)	(100)
Impairment of goodwill and other intangible assets	0	3	1,021	(3)	N/M	(1,018)	(100)
Restructuring activities	19	6	47	13	N/M	(41)	(88)
Total noninterest expenses	**1,735**	1,799	3,205	(64)	(4)	(1,405)	(44)
Noncontrolling interests	**85**	1	0	83	N/M	1	N/M
Income (loss) before income taxes	**367**	732	(190)	(364)	(50)	922	N/M
Cost/income ratio	79 %	71 %	106 %	N/M	8 ppt	N/M	(35) ppt
Assets[1]	10,030	8,050	12,300	1,980	25	(4,250)	(35)
Risk-weighted assets[2]	10,365	8,432	8,960	1,932	23	(528)	(6)
Average shareholders' equity[3]	4,669	4,687	4,460	(19)	(0)	227	5
Post-tax return on average tangible shareholders' equity	18 %	56 %	71 %	N/M	(38) ppt	N/M	(15) ppt
Post-tax return on average shareholders' equity	6 %	10 %	(3) %	N/M	(5) ppt	N/M	13 ppt

N/M – Not meaningful
[1] Segment assets represent consolidated view, i.e., the amounts do not include intersegment balances.
[2] Risk-weighted assets and capital ratios are based upon CRR/CRD 4 fully loaded.
[3] See "Measurement of Segment Profit or Loss" above for a description of how average shareholders' equity is allocated to the divisions.

Non-Core Operations Unit

in € m. (unless stated otherwise)	2018	2017	2016	2018 increase (decrease) from 2017 in € m.	2018 increase (decrease) from 2017 in %	2017 increase (decrease) from 2016 in € m.	2017 increase (decrease) from 2016 in %
Net revenues	–	–	(382)	0	N/M	382	N/M
thereof:							
Net interest income and net gains (losses) on financial assets/liabilities at fair value through profit or loss	–	–	(1,307)	0	N/M	1,307	N/M
Provision for credit losses	–	–	128	0	N/M	(128)	N/M
Noninterest expenses							
Compensation and benefits	–	–	68	0	N/M	(68)	N/M
General and administrative expenses	–	–	2,659	0	N/M	(2,659)	N/M
Policyholder benefits and claims	–	–	0	0	N/M	0	N/M
Impairment of goodwill and other intangible assets	–	–	(49)	0	N/M	49	N/M
Restructuring activities	–	–	4	0	N/M	(4)	N/M
Total noninterest expenses	–	–	2,682	0	N/M	(2,682)	N/M
Noncontrolling interests	–	–	(4)	0	N/M	4	N/M
Income (loss) before income taxes	–	–	(3,187)	0	N/M	3,187	N/M
Assets[1]	–	–	5,523	0	N/M	(5,523)	N/M
Risk-weighted assets[2]	–	–	9,174	0	N/M	(9,174)	N/M
Average shareholders' equity[3]	–	–	690	0	N/M	(690)	N/M

N/M – Not meaningful
[1] Segment assets represent consolidated view, i.e., the amounts do not include intersegment balances.
[2] Risk-weighted assets and capital ratios are based upon CRR/CRD 4 fully loaded.
[3] See “Measurement of Segment Profit or Loss” above for a description of how average shareholders' equity is allocated to the divisions.

Corporate & Other (C&O)

in € m. (unless stated otherwise)	2018	2017	2016	2018 increase (decrease) from 2017 in € m.	2018 increase (decrease) from 2017 in %	2017 increase (decrease) from 2016 in € m.	2017 increase (decrease) from 2016 in %
Net revenues	(73)	(489)	(473)	416	(85)	(17)	4
Provision for credit losses	0	(0)	(0)	1	N/M	0	(19)
Noninterest expenses							
Compensation and benefits	3,055	3,050	2,931	5	0	119	4
General and administrative expenses	(2,624)	(2,458)	(2,398)	(166)	7	(59)	2
Policyholder benefits and claims	0	0	0	0	N/M	0	N/M
Impairment of goodwill and other intangible assets	0	0	(0)	0	N/M	0	N/M
Restructuring activities	0	0	(7)	(0)	(85)	7	N/M
Total noninterest expenses	431	593	525	(161)	(27)	67	13
Noncontrolling interests	(109)	(16)	(46)	(93)	N/M	30	(65)
Income (loss) before income taxes	(396)	(1,066)	(952)	670	(63)	(114)	12
Assets[1]	5,872	6,586	40,959	(714)	(11)	(34,373)	(84)
Risk-weighted assets[2]	16,053	16,734	15,706	(681)	(4)	1,028	7
Average shareholders' equity	0	99	2,249	(99)	N/M	(2,150)	(96)

N/M – Not meaningful
[1] Assets in C&O reflect residual Treasury assets not allocated to the business segments as well as Corporate assets, such as deferred tax assets and central clearing accounts, outside the management responsibility of the business segments.
[2] Risk weighted assets are based upon CRR/CRD 4 fully loaded. Risk-weighted assets in C&O reflect Treasury and Corporate assets outside the management responsibility of the business segments, primarily the Group’s deferred tax assets.

Entity-Wide Disclosures

The Group's Entity-Wide Disclosures include net revenues from internal and external counterparties. Excluding revenues from internal counterparties would require disproportionate IT investment and is not in line with the Bank's management approach. For detail on our Net Revenue Components please see "Management Report: Operating and Financial Review: Results of Operations: Corporate Divisions".

The following table presents total net revenues (before provisions for credit losses) by geographic area for the years ended December 31, 2018, 2017 and 2016, respectively. The information presented for CIB, PCB, AM and NCOU has been classified based primarily on the location of the Group's office in which the revenues are recorded. The information for C&O is presented on a global level only, as management responsibility for C&O is held centrally.

in € m.	2018	2017	2016
Germany:			
Corporate & Investment Bank	1,400	1,503	1,924
Private & Commercial Bank	7,342	7,225	7,571
Asset Management	985	1,009	888
Non-Core Operations Unit	0	0	221
Total Germany[1]	**9,727**	9,737	10,604
UK:			
Corporate & Investment Bank	3,338	3,818	4,298
Private & Commercial Bank	26	34	83
Asset Management	294	434	836
Non-Core Operations Unit	0	0	(322)
Total UK	**3,659**	4,286	4,895
Rest of Europe, Middle East and Africa:			
Corporate & Investment Bank	1,124	1,268	1,545
Private & Commercial Bank	1,901	2,037	2,360
Asset Management	379	465	497
Non-Core Operations Unit	0	0	23
Total Rest of Europe, Middle East and Africa	**3,404**	3,770	4,425
Americas (primarily United States):			
Corporate & Investment Bank	4,671	4,999	5,929
Private & Commercial Bank	362	390	625
Asset Management	413	491	578
Non-Core Operations Unit	0	0	(305)
Total Americas	**5,445**	5,881	6,827
Asia/Pacific:			
Corporate & Investment Bank	2,513	2,639	3,069
Private & Commercial Bank	526	491	451
Asset Management	114	133	216
Non-Core Operations Unit	0	0	1
Total Asia/Pacific	**3,154**	3,263	3,736
Corporate and Other	**(73)**	(489)	(473)
Consolidated net revenues[2]	**25,316**	26,447	30,014

[1] All Postbank operations are disclosed as German operations subject to further systems integration

[2] Consolidated net revenues comprise interest and similar income, interest expenses and total noninterest income (including net commission and fee income). Revenues are attributed to countries based on the location in which the Group's booking office is located. The location of a transaction on the Group's books is sometimes different from the location of the headquarters or other offices of a customer and different from the location of the Group's personnel who entered into or facilitated the transaction. Where the Group records a transaction involving its staff and customers and other third parties in different locations frequently depends on other considerations, such as the nature of the transaction, regulatory considerations and transaction processing considerations.

Notes to the Consolidated Income Statement

05 – Net Interest Income and Net Gains (Losses) on Financial Assets/Liabilities at Fair Value through Profit or Loss

Net Interest Income

in € m.	2018	2017	2016
Interest and similar income:[1]			
Interest income on cash and central bank balances	1,860	1,070	433
Interest income on interbank balances (w/o central banks)	223	245	252
Central bank funds sold and securities purchased under resale agreements	221	292	359
Interest income on financial assets available for sale	N/A	1,083	1,313
Dividend income on financial assets available for sale	N/A	88	205
Loans	12,992	12,004	12,311
Interest income on securities held to maturity	N/A	68	67
Other	497	1,406	1,417
Total Interest and similar income from assets at amortized cost	**15,793**	16,256	16,357
Interest income from assets at fair value through other comprehensive income	1,014	N/A	N/A
Total interest and similar income not at fair value through profit or loss	**16,807**	16,256	16,357
Financial assets at fair value through profit or loss	7,985	7,286	8,786
Total interest and similar income	**24,793**	23,542	25,143
Interest expense:[1]			
Interest-bearing deposits	3,122	2,833	2,583
Central bank funds purchased and securities sold under repurchase agreements	379	431	255
Other short-term borrowings	139	135	179
Long-term debt	1,981	1,795	1,759
Trust preferred securities	234	413	437
Other	1,923	1,500	1,083
Total interest expense not at fair value through profit or loss	**7,778**	7,107	6,295
Financial liabilities at fair value through profit or loss	3,822	4,058	4,141
Total interest expense	**11,601**	11,164	10,436
Net interest income	**13,192**	12,378	14,707

[1] Prior period comparatives for gross interest income and gross interest expense have been restated. The restatements did not affect net interest income. € 550 million and € 493 million for year ended December 31, 2017 and 2016 were restated.

Interest income recorded on impaired financial assets was € 61 million and € 63 million for the years ended December 31, 2017 and 2016, respectively.

Other interest income for the years ended December 31, 2018 and 2017 included € 93 million and € 116 million which were related to government grants under the Targeted Longer-Term Refinancing Operations II (TLTRO II)-program.

Net Gains (Losses) on Financial Assets/Liabilities at Fair Value through Profit or Loss

in € m.	2018	2017	2016
Trading income:			
Sales & Trading (Equity)	407	1,142	588
Sales & Trading (FIC)	2,802	4,058	3,562
Total Sales & Trading	3,209	5,200	4,150
Other trading income	(3,157)	(1,826)	(3,603)
Total trading income	**52**	3,374	547
Net gains (losses) on non-trading financial assets mandatory at fair value through profit or loss:			
Breakdown by financial assets category:			
Debt Securities	**(77)**	N/A	N/A
Equity Securities	**159**	N/A	N/A
Loans and loan commitments	**77**	N/A	N/A
Deposits	**27**	N/A	N/A
Others non-trading financial assets mandatory at fair value through profit and loss	**26**	N/A	N/A
Total net gains (losses) on non-trading financial assets mandatory at fair value through profit or loss:	**212**	N/A	N/A
Net gains (losses) on financial assets/liabilities designated at fair value through profit or loss:			
Breakdown by financial asset/liability category:			
Securities purchased/sold under resale/repurchase agreements	4	3	(3)
Securities borrowed/loaned	0	(1)	1
Loans and loan commitments	7	(32)	(109)
Deposits	19	(30)	(28)
Long-term debt	1,118	(398)	303
Other financial assets/liabilities designated at fair value through profit or loss	(79)	10	691
Total net gains (losses) on financial assets/liabilities designated at fair value through profit or loss	**1,069**	(448)	854
Total net gains (losses) on financial assets/liabilities at fair value through profit or loss	**1,332**	2,926	1,401

Combined Net Interest Income and Net Gains (Losses) on Financial Assets/Liabilities at Fair Value through Profit or Loss

in € m.	2018	2017	2016
Net interest income	13,192	12,378	14,707
Trading income[1]	52	3,374	547
Net gains (losses) on non-trading financial assets mandatory at fair value through profit or loss	212	N/A	N/A
Net gains (losses) on financial assets/liabilities designated at fair value through profit or loss	1,069	(448)	854
Total net gains (losses) on financial assets/liabilities at fair value through profit or loss	1,332	2,926	1,401
Total net interest income and net gains (losses) on financial assets/liabilities at fair value through profit or loss	**14,524**	15,304	16,108
Sales & Trading (Equity)	1,514	1,516	1,931
Sales & Trading (FIC)	5,027	6,351	7,161
Total Sales & Trading	6,541	7,868	9,092
Global Transaction Banking	1,869	1,932	2,097
Remaining Products	(504)	(1,148)	(415)
Corporate & Investment Bank	7,905	8,651	10,774
Private & Commercial Bank	6,283	6,158	6,420
Asset Management	(89)	30	365
Non-Core Operations Unit	N/A	N/A	(1,307)
Corporate & Other	425	464	(144)
Total net interest income and net gains (losses) on financial assets/liabilities at fair value through profit or loss	**14,524**	15,304	16,108

[1] Trading income includes gains and losses from derivatives not qualifying for hedge accounting.

The Group's trading and risk management businesses include significant activities in interest rate instruments and related derivatives. Under IFRS, interest and similar income earned from trading instruments and financial instruments designated at fair value through profit or loss (i.e., coupon and dividend income), and the costs of funding net trading positions, are part of net interest income. The Group's trading activities can periodically drive income to either net interest income or to net gains (losses) of financial assets/liabilities at fair value through profit or loss depending on a variety of factors, including risk management strategies. The above table combines net interest income and net gains (losses) of financial assets/liabilities at fair value through profit or loss by business division and by product within Corporate & Investment Bank.

06 – Commissions and Fee Income

in € m.	2018	2017	2016
Commission and fee income and expense:			
Commission and fee income	12,921	14,102	14,999
Commission and fee expense	2,882	3,100	3,255
Net commissions and fee income	**10,039**	11,002	11,744

In the first quarter of 2018, the Group adopted IFRS 15 "Revenue from Contracts with Customers" which requires disaggregation of revenues prior to the deduction of associated expenses.

Disaggregation of revenues by product type and business segment – based on IFRS 15

					Dec 31,2018
in € m. (unless stated otherwise)	Corporate & Investment Bank	Private & Commercial Bank	Asset Management	Corporate & Other	Total Consolidated
Major type of services:					
Commissions for administration	292	257	22	(3)	568
Commissions for assets under management	45	261	3,131	(0)	3,436
Commissions for other securities	302	30	2	0	335
Underwriting and advisory fees	1,708	17	(1)	(28)	1,696
Brokerage fees	1,223	933	82	0	2,238
Commissions for local payments	414	1,047	(0)	(1)	1,460
Commissions for foreign commercial business	485	137	0	(1)	621
Commissions for foreign currency/exchange business	7	8	0	(0)	15
Commissions for loan processing and guarantees	690	291	0	1	981
Intermediary fees	3	478	0	12	493
Fees for sundry other customer services	730	229	117	0	1,076
Total fee and commissions income	5,898	3,688	3,352	(18)	12,921
Gross expense					(2,882)
Net fees and commissions					10,039

The Group has applied IFRS 15 to reporting periods beginning on or after January 1, 2018 (as allowed under the cumulative effect method under IFRS 15). Prior to adoption of IFRS 15 the Group disclosed total commissions and fee income and expenses on a gross basis annually. The disaggregation of commissions and fees were reported annually on a net basis. For the years ended 31 December 2017 and 2016, annual commissions and fees were € 4.3 billion and € 4.3 billion respectively for fiduciary activities, € 3.0 billion and € 3.3 billion respectively for brokers' fees, mark-ups on securities underwriting and other securities activities, and € 3.7 billion and € 4.2 billion respectively for fees for other customer services.

As of December 31, 2018, the Group's balance of receivables from commission and fee income was € 839 million. As of December 31, 2018, the Group's balance of contract liabilities associated to commission and fee income was € 74 million. Contract liabilities arise from the Group's obligation to provide future services to a customer for which it has received consideration from the customer prior to completion of the services. The balances of receivables and contract liabilities do not vary significantly from period to period reflecting the fact that they predominately relate to recurring service contracts with service periods of less than one year such as monthly current account services and quarterly asset management services. Customer payment in exchange for services provided are generally subject to performance by the Group over the specific service period such that the Group's right to payment arises at the end of the service period when its performance obligations are fully completed. Therefore no material balance of contract asset is reported.

07 – Net Gains (Losses) on Financial Assets Available for Sale

in € m.	2018	2017	2016
Net gains (losses) on financial assets available for sale:			
Net gains (losses) on debt securities:	N/A	114	229
Net gains (losses) from disposal	N/A	115	230
Impairments	N/A	(1)	(1)
Net gains (losses) on equity securities:	N/A	219	79
Net gains (losses) from disposal/remeasurement	N/A	219	96
Impairments	N/A	(1)	(17)
Net gains (losses) on loans:	N/A	37	6
Net gains (losses) from disposal	N/A	45	21
Impairments	N/A	(8)	(15)
Reversal of impairments	N/A	0	0
Net gains (losses) on other equity interests:	N/A	110	339
Net gains (losses) from disposal	N/A	137	348
Impairments	N/A	(27)	(9)
Total net gains (losses) on financial assets available for sale	**N/A**	479	653

Please also refer to Note 15 “Financial Assets Available for Sale” of this report.

08 – Other Income

in € m.	2018	2017	2016
Other income:			
Net gains (losses) on disposal of loans	(4)	19	(128)
Insurance premiums[1]	3	4	89
Net income (loss) from hedge relationships qualifying for hedge accounting	(497)	(609)	(370)
Consolidated investments	0	0	362
Remaining other income[2]	712	112	1,100
Total other income (loss)	**215**	(475)	1,053

[1] Net of reinsurance premiums paid. The development is primarily driven by Abbey Life Assurance Company Limited which has been sold in 2016.
[2] Includes net gains (losses) of € 141 million, € -81 million and € 744 million for the years ended December 31, 2018, 2017 and 2016, respectively, that are related to non-current assets and disposal groups held for sale.

09 – General and Administrative Expenses

in € m.	2018	2017	2016
General and administrative expenses:			
IT costs[1]	3,822	3,816	3,872
Regulatory, Tax & Insurance[2,3]	1,545	1,489	1,421
Occupancy, furniture and equipment expenses	1,723	1,849	1,972
Professional service fees[1]	1,530	1,750	2,305
Banking and transaction charges	753	744	664
Communication and data services	636	686	761
Travel and representation expenses	347	405	450
Marketing expenses	278	309	285
Consolidated investments	0	0	334
Other expenses[4]	652	925	3,390
Total general and administrative expenses	**11,286**	11,973	15,454

[1] Prior year numbers have been restated to reflect a shift from IT costs to professional service fees due to a change in the organizational structure.
[2] Regulatory, Tax & Insurance which comprises Bank levy and Insurance and Deposit protection has been presented separately in order to provide further transparency. In the Annual Report for the year ended December 31, 2017, these expenses were included within Other expenses.
[3] Includes bank levy of € 690 million in 2018, € 596 million in 2017 and € 547 million in 2016.
[4] Includes litigation related expenses of € 88 million in 2018, € 213 million in 2017 and € 2.4 billion in 2016. See Note 29 “Provisions”, for more detail on litigation.

10 – Restructuring

Restructuring forms part of the Group's strategy implementation. We have defined measures that aim to strengthen the bank, position it for growth and simplify its organizational set-up. The measures also target to reduce adjusted costs through higher efficiency, by optimizing and streamlining processes, and by exploiting synergies.

Restructuring expense is comprised of termination benefits, additional expenses covering the acceleration of deferred compensation awards not yet amortized due to the discontinuation of employment and contract termination costs related to real estate.

in € m.	2018	2017	2016
Corporate & Investment Bank	287	81	292
Private & Commercial Bank	55	360	141
Asset Management	19	6	47
Non-Core Operations Unit	–	–	4
Total Net Restructuring Charges	**360**	447	484

in € m.	2018	2017	2016
Restructuring – Staff related	367	430	491
thereof:			
Termination Benefits	248	402	432
Retention Acceleration	113	26	54
Social Security	6	2	5
Restructuring – Non Staff related	(6)	17	(7)
Total Net Restructuring Charges	**360**	447	484

Provisions for restructuring amounted to € 585 million, € 696 million and € 741 million as of December 31, 2018, December 31, 2017 and December 31, 2016, respectively. The majority of the current provisions for restructuring are expected to be utilized in the next two years.

During 2018, 3,000 full-time equivalent staff was reduced through restructuring (2017: 2,045 and 2016: 1,451).

Full-time equivalent staff	2018	2017	2016
Corporate & Investment Bank	1,002	502	356
Private & Commercial Bank	767	1,054	453
Asset Management	92	38	101
Infrastructure/Regional Management	1,138	451	541
Total full-time equivalent staff	**3,000**	2,045	1,451

11 – Earnings per Share

Basic earnings per share amounts are computed by dividing net income (loss) attributable to Deutsche Bank shareholders by the average number of common shares outstanding during the year. The average number of common shares outstanding is defined as the average number of common shares issued, reduced by the average number of shares in treasury and by the average number of shares that will be acquired under physically-settled forward purchase contracts, and increased by undistributed vested shares awarded under deferred share plans.

Diluted earnings per share assumes the conversion into common shares of outstanding securities or other contracts to issue common stock, such as share options, convertible debt, unvested deferred share awards and forward contracts. The aforementioned instruments are only included in the calculation of diluted earnings per share if they are dilutive in the respective reporting period.

Computation of basic and diluted earnings per share

in € m.	2018	2017	2016
Net income (loss) attributable to Deutsche Bank shareholders – numerator for basic earnings per share[1]	**267**	(1,049)	(1,678)
Effect of dilutive securities:			
Forwards and options	0	0	0
Convertible debt	0	0	0
Net income (loss) attributable to Deutsche Bank shareholders after assumed conversions – numerator for diluted earnings per share[1]	**267**	(1,049)	(1,678)
Number of shares in million			
Weighted-average shares outstanding – denominator for basic earnings per share	**2,102.2**	1,967.7	1,555.3
Effect of dilutive securities:			
Forwards	0.0	0.0	0.0
Employee stock compensation options	0.0	0.0	0.0
Deferred shares	0.0	0.0	0.0
Other (including trading options)	0.0	0.0	0.0
Dilutive potential common shares	0.0	0.0	0.0
Adjusted weighted-average shares after assumed conversions – denominator for diluted earnings per share	**2,102.2**	1,967.7	1,555.3

[1] Earnings were adjusted by € 292 million and € 298 million and € 276 million net of tax for the coupons paid on Additional Tier 1 Notes in April 2018, April 2017 and April 2016.

Earnings per share

in €	2018	2017	2016
Basic earnings per share	(0.01)	(0.53)	(1.08)
Diluted earnings per share	(0.01)	(0.53)	(1.08)

On April 7, 2017, Deutsche Bank AG completed a capital increase with subscription rights. As the subscription price of the new shares was lower than the market price of the existing shares, the capital increase included a bonus element. According to IAS 33, the bonus element is the result of an implicit change in the number of shares outstanding for all periods prior to the capital increase without a fully proportionate change in resources. As a consequence, the weighted average number of shares outstanding has been adjusted retrospectively.

In accordance with IAS 33 the coupons paid on Additional Tier 1 Notes are not attributable to Deutsche Bank shareholders and therefore need to be deducted in the calculation. This adjustment created a net loss situation for Earnings per Common Share in 2018. Due to the net loss situation for 2018, 2017 and 2016 potentially dilutive shares are generally not considered for the earnings per share calculation, because to do so would have been anti-dilutive and hence decreased the net loss per share.

Instruments outstanding and not included in the calculation of diluted earnings per share[1]

Number of shares in m.	2018	2017	2016
Call options sold	0.0	0.0	0.0
Employee stock compensation options	0.0	0.0	0.0
Deferred shares	108.8	104.4	69.6

[1] Not included in the calculation of diluted earnings per share, because to do so would have been anti-dilutive.

Notes to the Consolidated Balance Sheet

12 – Financial Assets/Liabilities at Fair Value through Profit or Loss

in € m.	Dec 31, 2018	Dec 31, 2017
Trading Financial assets:		
Trading assets:		
Trading securities	140,720	173,196
Other trading assets[1]	12,017	11,466
Total trading assets	152,738	184,661
Positive market values from derivative financial instruments	320,058	361,032
Total Trading Financial assets	**472,796**	545,693
Non-trading financial assets mandatory at fair value through profit or loss:		
Securities purchased under resale agreements	44,543	N/A
Securities borrowed	24,210	N/A
Loans	12,741	N/A
Other financial assets mandatory at fair value through profit or loss	18,951	N/A
Total Non-trading financial assets mandatory at fair value through profit or loss	**100,444**	N/A
Financial assets designated at fair value through profit or loss:		
Securities purchased under resale agreements	0	57,843
Securities borrowed	0	20,254
Loans	0	4,802
Other financial assets designated at fair value through profit or loss	104	8,377
Total financial assets designated at fair value through profit or loss	**104**	91,276
Total financial assets at fair value through profit or loss	**573,344**	636,970

[1] Includes traded loans of € 11.5 billion and € 10.9 billion at December 31, 2018 and 2017 respectively.

in € m.	Dec 31, 2018	Dec 31, 2017
Financial liabilities classified as held for trading:		
Trading liabilities:		
Trading securities	59,629	71,148
Other trading liabilities	295	314
Total trading liabilities	59,924	71,462
Negative market values from derivative financial instruments	301,487	342,726
Total financial liabilities classified as held for trading	**361,411**	414,189
Financial liabilities designated at fair value through profit or loss:		
Securities sold under repurchase agreements	46,254	53,840
Loan commitments	0	8
Long-term debt	5,607	6,439
Other financial liabilities designated at fair value through profit or loss	1,895	3,587
Total financial liabilities designated at fair value through profit or loss	**53,757**	63,874
Investment contract liabilities	512	574
Total financial liabilities at fair value through profit or loss	**415,680**	478,636

Financial Assets & Liabilities designated at Fair Value through Profit or Loss

The Group previously designated various lending relationships at fair value through profit or loss. In 2018, these facilities are mandatorily at fair value through profit or loss under IFRS 9. Lending facilities consist of drawn loan assets and undrawn irrevocable loan commitments. The maximum exposure to credit risk on a drawn loan is its fair value. The Group's maximum exposure to credit risk on drawn loans, including securities purchased under resale agreements and securities borrowed, was € 0 million and € 83 billion as of December 31, 2018, and 2017, respectively. Exposure to credit risk also exists for undrawn irrevocable loan commitments and is predominantly counterparty credit risk.

The credit risk on the securities purchased under resale agreements and securities borrowed designated under the fair value option is mitigated by the holding of collateral. The valuation of these instruments takes into account the credit enhancement in the form of the collateral received. As such there is no material movement during the year or cumulatively due to movements in counterparty credit risk on these instruments.

Changes in fair value of financial assets attributable to movements in counterparty credit risk

in €	Dec 31, 2018	Dec 31, 2017
Notional value of financial assets exposed to credit risk	0	N/A
Annual change in the fair value reflected in the Statement of Income	0	N/A
Cumulative change in the fair value	0	N/A
Notional of credit derivatives used to mitigate credit risk	0	N/A
Annual change in the fair value reflected in the Statement of Income	0	N/A
Cumulative change in the fair value	0	N/A

Changes in fair value of loans[1] and loan commitments attributable to movements in counterparty credit risk[2]

	Dec 31, 2018		Dec 31, 2017	
in € m.	Loans	Loan commitments	Loans	Loan commitments
Notional value of loans and loan commitments exposed to credit risk	N/A	N/A	2,865	1,973
Annual change in the fair value reflected in the Statement of Income	N/A	N/A	7	14
Cumulative change in the fair value[3]	N/A	N/A	10	30
Notional of credit derivatives used to mitigate credit risk	N/A	N/A	536	4,728
Annual change in the fair value reflected in the Statement of Income	N/A	N/A	(0)	(42)
Cumulative change in the fair value[3]	N/A	N/A	1	(46)

[1] Where the loans are over-collateralized there is no material movement in valuation during the year or cumulatively due to movements in counterparty credit risk.
[2] Determined using valuation models that exclude the fair value impact associated with market risk.
[3] Changes are attributable to loans and loan commitments held at reporting date, which may differ from those held in prior periods. No adjustments are made to prior year to reflect differences in the underlying population.

Changes in fair value of financial liabilities attributable to movements in the Group's credit risk[1]

in € m.	Dec 31, 2018	Dec 31, 2017[2]
Presented in Other comprehensive Income		
Cumulative change in the fair value	(49)	N/A
Presented in Statement of income		
Annual change in the fair value reflected in the Statement of Income	0	60
Cumulative change in the fair value	0	72

[1] The fair value of a financial liability incorporates the credit risk of that financial liability. Changes in the fair value of financial liabilities issued by consolidated structured entities have been excluded as this is not related to the Group's credit risk but to that of the legally isolated structured entity, which is dependent on the collateral it holds.

Transfers of the cumulative gains or losses within equity during the period

in € m.	Dec 31, 2018	Dec 31, 2017
Cumulative gains or losses within equity during the period	0	N/A

Amounts realized on derecognition of liabilities designated at fair value through profit or loss

in € m.	Dec 31, 2018	Dec 31, 2017
Amount presented in other comprehensive income realized at derecognition	(3)	N/A

The excess of the contractual amount repayable at maturity over the carrying value of financial liabilities[1]

in € m.	Dec 31, 2018	Dec 31, 2017
Including undrawn loan commitments[2]	2,545	6,088
Excluding undrawn loan commitments	2,536	2,073

[1] Assuming the liability is extinguished at the earliest contractual maturity that the Group can be required to repay. When the amount payable is not fixed, it is determined by reference to conditions existing at the reporting date.
[2] The contractual cash flows at maturity for undrawn loan commitments assume full drawdown of the facility.

13 – Financial Instruments carried at Fair Value

Valuation Methods and Control

The Group has an established valuation control framework which governs internal control standards, methodologies, and procedures over the valuation process.

Prices Quoted in Active Markets – The fair value of instruments that are quoted in active markets are determined using the quoted prices where they represent prices at which regularly and recently occurring transactions take place.

Valuation Techniques – The Group uses valuation techniques to establish the fair value of instruments where prices, quoted in active markets, are not available. Valuation techniques used for financial instruments include modelling techniques, the use of indicative quotes for proxy instruments, quotes from recent and less regular transactions and broker quotes.

For some financial instruments a rate or other parameter, rather than a price, is quoted. Where this is the case then the market rate or parameter is used as an input to a valuation model to determine fair value. For some instruments, modelling techniques follow industry standard models, for example, discounted cash flow analysis and standard option pricing models. These models are dependent upon estimated future cash flows, discount factors and volatility levels. For more complex or unique instruments, more sophisticated modelling techniques are required, and may rely upon assumptions or more complex parameters such as correlations, prepayment speeds, default rates and loss severity.

Frequently, valuation models require multiple parameter inputs. Where possible, parameter inputs are based on observable data or are derived from the prices of relevant instruments traded in active markets. Where observable data is not available for parameter inputs, then other market information is considered. For example, indicative broker quotes and consensus pricing information are used to support parameter inputs where they are available. Where no observable information is available to support parameter inputs then they are based on other relevant sources of information such as prices for similar transactions, historic data, economic fundamentals, and research information, with appropriate adjustment to reflect the terms of the actual instrument being valued and current market conditions.

Valuation Adjustments – Valuation adjustments are an integral part of the valuation process. In making appropriate valuation adjustments, the Group follows methodologies that consider factors such as bid-offer spreads, counterparty/own credit and funding risk. Bid-offer spread valuation adjustments are required to adjust mid market valuations to the appropriate bid or offer valuation. The bid or offer valuation is the best representation of the fair value for an instrument, and therefore its fair value. The carrying value of a long position is adjusted from mid to bid, and the carrying value of a short position is adjusted from mid to offer. Bid-offer valuation adjustments are determined from bid-offer prices observed in relevant trading activity and in quotes from other broker-dealers or other knowledgeable counterparties. Where the quoted price for the instrument is already a bid-offer price then no additional bid-offer valuation adjustment is necessary. Where the fair value of financial instruments is derived from a modelling technique, then the parameter inputs into that model are normally at a mid-market level. Such instruments are generally managed on a portfolio basis and, when specified criteria are met, valuation adjustments are taken to reflect the cost of closing out the net exposure the Bank has to individual market or counterparty risks. These adjustments are determined from bid-offer prices observed in relevant trading activity and quotes from other broker-dealers.

Where complex valuation models are used, or where less-liquid positions are being valued, then bid-offer levels for those positions may not be available directly from the market, and therefore for the close-out cost of these positions, models and parameters must be estimated. When these adjustments are designed, the Group closely examines the valuation risks associated with the model as well as the positions themselves, and the resulting adjustments are closely monitored on an ongoing basis.

Counterparty Credit Valuation Adjustments (CVAs) are required to cover expected credit losses to the extent that the valuation technique does not already include an expected credit loss factor relating to the non-performance risk of the counterparty. The CVA amount is applied to all relevant over-the-counter (OTC) derivatives, and is determined by assessing the potential credit exposure to a given counterparty and taking into account any collateral held, the effect of any relevant netting arrangements, expected loss given default and the probability of default, based on available market information, including Credit Default Swap (CDS) spreads. Where counterparty CDS spreads are not available, relevant proxies are used.

The fair value of the Group's financial liabilities at fair value through profit or loss (i.e., OTC derivative liabilities and issued note liabilities designated at fair value through profit or loss) incorporates valuation adjustments to measure the change in the Group's own credit risk (i.e. Debt Valuation Adjustments (DVA) for Derivatives and Own Credit Adjustment (OCA) for structured notes). For derivative liabilities the Group considers its own creditworthiness by assessing all counterparties' expected future exposure to the Group, taking into account any collateral posted by the Group, the effect of relevant netting arrangements, the probability of default of the Group, based on the Group's market CDS level and the expected loss given default, taking into account the seniority of derivative claims under resolution (statutory subordination). Issued note liabilities are discounted utilizing the spread at which similar instruments would be issued or bought back at the measurement date as this reflects the value from the perspective of a market participant who holds the identical item as an asset. This spread is further parameterized into a market level of funding component and an idiosyncratic own credit component. Under IFRS 9 the change in the own credit component is reported under Other Comprehensive Income (OCI).

When determining CVA and DVA, additional adjustments are made where appropriate to achieve fair value, due to the expected loss estimate of a particular arrangement, or where the credit risk being assessed differs in nature to that described by the available CDS instrument.

Funding Valuation Adjustments (FVA) are required to incorporate the market implied funding costs into the fair value of derivative positions. The FVA reflects a discounting spread applied to uncollateralized and partially collateralized derivatives and is determined by assessing the market-implied funding costs on both assets and liabilities.

Where there is uncertainty in the assumptions used within a modelling technique, an additional adjustment is taken to calibrate the model price to the expected market price of the financial instrument. Typically, such transactions have bid-offer levels which are less observable, and these adjustments aim to estimate the bid-offer by computing the liquidity-premium associated with the transaction. Where a financial instrument is of sufficient complexity that the cost of closing it out would be higher than the cost of closing out its component risks, then an additional adjustment is taken to reflect this.

Valuation Control – The Group has an independent specialized valuation control group within the Finance function which governs and develops the valuation control framework and manages the valuation control processes. The mandate of this specialist function includes the performance of the independent valuation control process for all businesses, the continued development of valuation control methodologies and techniques, as well as devising and governing the formal valuation control policy framework. Special attention of this independent valuation control group is directed to areas where management judgment forms part of the valuation process.

Results of the valuation control process are collected and analyzed as part of a standard monthly reporting cycle. Variances of differences outside of preset and approved tolerance levels are escalated both within the Finance function and with Senior Business Management for review, resolution and, if required, adjustment.

For instruments where fair value is determined from valuation models, the assumptions and techniques used within the models are independently validated by an independent specialist model validation group that is part of the Group's Risk Management function.

Quotes for transactions and parameter inputs are obtained from a number of third party sources including exchanges, pricing service providers, firm broker quotes and consensus pricing services. Price sources are examined and assessed to determine the quality of fair value information they represent, with greater emphasis given to those possessing greater valuation certainty and relevance. The results are compared against actual transactions in the market to ensure the model valuations are calibrated to market prices.

Price and parameter inputs to models, assumptions and valuation adjustments are verified against independent sources. Where they cannot be verified to independent sources due to lack of observable information, the estimate of fair value is subject to procedures to assess its reasonableness. Such procedures include performing revaluation using independently generated models (including where existing models are independently recalibrated), assessing the valuations against appropriate proxy instruments and other benchmarks, and performing extrapolation techniques. Assessment is made as to whether the valuation techniques produce fair value estimates that are reflective of market levels by calibrating the results of the valuation models against market transactions where possible.

Fair Value Hierarchy

The financial instruments carried at fair value have been categorized under the three levels of the IFRS fair value hierarchy as follows:

Level 1 – Instruments valued using quoted prices in active markets are instruments where the fair value can be determined directly from prices which are quoted in active, liquid markets and where the instrument observed in the market is representative of that being priced in the Group's inventory.

These include: government bonds, exchange-traded derivatives and equity securities traded on active, liquid exchanges.

Level 2 – Instruments valued with valuation techniques using observable market data are instruments where the fair value can be determined by reference to similar instruments trading in active markets, or where a technique is used to derive the valuation but where all inputs to that technique are observable.

These include: many OTC derivatives; many investment-grade listed credit bonds; some CDS; many collateralized debt obligations (CDO); and many less-liquid equities.

Level 3 – Instruments valued using valuation techniques using market data which is not directly observable are instruments where the fair value cannot be determined directly by reference to market-observable information, and some other pricing technique must be employed. Instruments classified in this category have an element which is unobservable and which has a significant impact on the fair value.

These include: more-complex OTC derivatives; distressed debt; highly-structured bonds; illiquid asset-backed securities (ABS); illiquid CDO's (cash and synthetic); monoline exposures; some private equity placements; many commercial real estate (CRE) loans; illiquid loans; and some municipal bonds.

Carrying value of the financial instruments held at fair value[1]

	Dec 31, 2018			Dec 31, 2017		
in € m.	Quoted prices in active market (Level 1)	Valuation technique observable parameters (Level 2)	Valuation technique unobservable parameters (Level 3)	Quoted prices in active market (Level 1)	Valuation technique observable parameters (Level 2)	Valuation technique unobservable parameters (Level 3)
Financial assets held at fair value:						
Trading assets	75,415	67,560	9,763	106,075	69,543	9,043
Trading securities	75,210	61,424	4,086	105,792	62,770	4,634
Other trading assets	205	6,136	5,676	283	6,773	4,409
Positive market values from derivative financial instruments	10,140	301,609	8,309	12,280	341,413	7,340
Non-trading financial assets mandatory at fair value through profit or loss	8,288	86,090	6,066	N/A	N/A	N/A
Financial assets designated at fair value through profit or loss	104	0	0	6,547	83,242	1,488
Financial assets at fair value through other comprehensive income	32,517	18,397	268	N/A	N/A	N/A
Financial assets available for sale	N/A	N/A	N/A	29,579	15,713	4,104
Other financial assets at fair value	42	2,779[2]	207	0	3,258[2]	47
Total financial assets held at fair value	**126,505**	**476,435**	**24,614**	154,480	513,169	22,022
Financial liabilities held at fair value:						
Trading liabilities	42,548	17,361	15	53,644	17,817	2
Trading securities	42,547	17,082	0	53,644	17,503	2
Other trading liabilities	1	279	15	0	314	0
Negative market values from derivative financial instruments	9,638	285,561	6,289	9,163	327,572	5,992
Financial liabilities designated at fair value through profit or loss	119	51,617	2,021	4	62,426	1,444
Investment contract liabilities	0	512	0	0	574	0
Other financial liabilities at fair value	201	2,658[2]	(611)[3]	0	2,559[2,4]	(298)[3]
Total financial liabilities held at fair value	**52,505**	**357,709**	**7,714**	62,810	410,948	7,139

[1] Amounts in this table are generally presented on a gross basis, in line with the Group's accounting policy regarding offsetting of financial instruments, as described in Note 1 "Significant Accounting Policies and Critical Accounting Estimates".
[2] Predominantly relates to derivatives qualifying for hedge accounting.
[3] Relates to derivatives which are embedded in contracts where the host contract is held at amortized cost but for which the embedded derivative is separated. The separated embedded derivatives may have a positive or a negative fair value but have been presented in this table to be consistent with the classification of the host contract. The separated embedded derivatives are held at fair value on a recurring basis and have been split between the fair value hierarchy classifications.
[4] Restatement undertaken represents pure reclass from Note 14 "Fair Value of Financial Instruments not carried at Fair Value" to Note 13 "Financial Instruments carried at Fair Value"- no change in amounts. Amounts are carried at fair value.

In 2018, there were transfers of € 1.5 billion from Level 1 to Level 2 on trading securities based on changes in liquidity testing procedures.

Valuation Techniques

The following is an explanation of the valuation techniques used in establishing the fair value of the different types of financial instruments that the Group trades.

Sovereign, Quasi-sovereign and Corporate Debt and Equity Securities – Where there are no recent transactions then fair value may be determined from the last market price adjusted for all changes in risks and information since that date. Where a close proxy instrument is quoted in an active market then fair value is determined by adjusting the proxy value for differences in the risk profile of the instruments. Where close proxies are not available then fair value is estimated using more complex modelling techniques. These techniques include discounted cash flow models using current market rates for credit, interest, liquidity and other risks. For equity securities modeling techniques may also include those based on earnings multiples.

Mortgage- and Other Asset-Backed Securities (MBS/ABS) include residential and commercial MBS and other ABS including CDOs. ABS have specific characteristics as they have different underlying assets and the issuing entities have different capital structures. The complexity increases further where the underlying assets are themselves ABS, as is the case with many of the CDO instruments.

Where no reliable external pricing is available, ABS are valued, where applicable, using either relative value analysis which is performed based on similar transactions observable in the market, or industry-standard valuation models making largest possible use of available observable inputs. The industry standard models calculate principal and interest payments for a given deal based on assumptions that can be independently price tested. The inputs include prepayment speeds, loss assumptions (timing and severity) and a discount rate (spread, yield or discount margin). These inputs/assumptions are derived from actual transactions, external market research and market indices where appropriate.

Loans – For certain loans fair value may be determined from the market price on a recently occurring transaction adjusted for all changes in risks and information since that transaction date. Where there are no recent market transactions then broker quotes, consensus pricing, proxy instruments or discounted cash flow models are used to determine fair value. Discounted cash flow models incorporate parameter inputs for credit risk, interest rate risk, foreign exchange risk, loss given default estimates and amounts utilized given default, as appropriate. Credit risk, loss given default and utilization given default parameters are determined using information from the loan or other credit markets, where available and appropriate.

Leveraged loans can have transaction-specific characteristics which can limit the relevance of market-observed transactions. Where similar transactions exist for which observable quotes are available from external pricing services then this information is used with appropriate adjustments to reflect the transaction differences. When no similar transactions exist, a discounted cash flow valuation technique is used with credit spreads derived from the appropriate leveraged loan index, incorporating the industry classification, subordination of the loan, and any other relevant information on the loan and loan counterparty.

Over-The-Counter Derivative Financial Instruments – Market standard transactions in liquid trading markets, such as interest rate swaps, foreign exchange forward and option contracts in G7 currencies, and equity swap and option contracts on listed securities or indices are valued using market standard models and quoted parameter inputs. Parameter inputs are obtained from pricing services, consensus pricing services and recently occurring transactions in active markets wherever possible.

More complex instruments are modeled using more sophisticated modeling techniques specific for the instrument and are calibrated to available market prices. Where the model output value does not calibrate to a relevant market reference then valuation adjustments are made to the model output value to adjust for any difference. In less active markets, data is obtained from less frequent market transactions, broker quotes and through extrapolation and interpolation techniques. Where observable prices or inputs are not available, management judgment is required to determine fair values by assessing other relevant sources of information such as historical data, fundamental analysis of the economics of the transaction and proxy information from similar transactions.

Financial Liabilities Designated at Fair Value through Profit or Loss under the Fair Value Option – The fair value of financial liabilities designated at fair value through profit or loss under the fair value option incorporates all market risk factors including a measure of the Group's credit risk relevant for that financial liability. The financial liabilities include structured note issuances, structured deposits, and other structured securities issued by consolidated vehicles, which may not be quoted in an active market. The fair value of these financial liabilities is determined by discounting the contractual cash flows using the relevant credit-adjusted yield curve. The market risk parameters are valued consistently to similar instruments held as assets, for example, any derivatives embedded within the structured notes are valued using the same methodology discussed in the "Over-The-Counter Derivative Financial Instruments" section above.

Where the financial liabilities designated at fair value through profit or loss under the fair value option are collateralized, such as securities loaned and securities sold under repurchase agreements, the credit enhancement is factored into the fair valuation of the liability.

Investment Contract Liabilities – Assets which are linked to the investment contract liabilities are owned by the Group. The investment contract obliges the Group to use these assets to settle these liabilities. Therefore, the fair value of investment contract liabilities is determined by the fair value of the underlying assets (i.e., amount payable on surrender of the policies).

Analysis of Financial Instruments with Fair Value Derived from Valuation Techniques Containing Significant Unobservable Parameters (Level 3)

Some of the financial assets and financial liabilities in Level 3 of the fair value hierarchy have identical or similar offsetting exposures to the unobservable input. However, according to IFRS they are required to be presented gross.

Trading Securities – Certain illiquid emerging market corporate bonds and illiquid highly structured corporate bonds are included in this level of the hierarchy. In addition, some of the holdings of notes issued by securitization entities, commercial and residential MBS, collateralized debt obligation securities and other ABS are reported here. The decrease in the year is mainly due to a combination of sales and settlements offset by purchases, gains and transfers between Level 2 and Level 3 due to changes in the observability of input parameters used to value these instruments.

Positive and Negative Market Values from Derivative Instruments categorized in this level of the fair value hierarchy are valued based on one or more significant unobservable parameters. The unobservable parameters may include certain correlations, certain longer-term volatilities, certain prepayment rates, credit spreads and other transaction-specific parameters.

Level 3 derivatives includes certain options where the volatility is unobservable; certain basket options in which the correlations between the referenced underlying assets are unobservable; longer-term interest rate option derivatives; multi-currency foreign exchange derivatives; and certain credit default swaps for which the credit spread is not observable.

The increase in assets was due to gains and transfers between Level 2 and Level 3 due to changes in the observability of input parameters used to value these instruments offset by settlements. The increase in liabilities was due to losses and transfers between Level 2 and Level 3 offset by settlements.

Other Trading Instruments classified in Level 3 of the fair value hierarchy mainly consist of traded loans valued using valuation models based on one or more significant unobservable parameters. Level 3 loans comprise illiquid leveraged loans and illiquid residential and commercial mortgage loans. The balance increased in the year due to purchases, issuances, gains and transfers between Level 2 and Level 3 due to changes in the observability of input parameters used to value these instruments offset by sales and settlements.

Non-trading financial assets mandatory at fair value through profit or loss (2018) classified in level 3 of fair value hierarchy consist of any non-trading financial asset that does not fall into the Hold to Collect nor Hold to Collect and Sell business models. This includes predominately reverse repurchase agreements which are managed on a fair value basis. Additionally, any financial asset that falls into the Hold to Collect or Hold to Collect and Sell business models for which the contractual cash flow characteristics are not SPPI. The increase in the period is driven by purchases, issuances, gains and transfers between Level 2 and Level 3 due to changes in the observability of input parameters used to value these instruments offset by sales and settlements.

Financial Assets/Liabilities designated at Fair Value through Profit or Loss – Certain corporate loans and structured liabilities which were designated at fair value through profit or loss under the fair value option were categorized in this level of the fair value hierarchy. The corporate loans are valued using valuation techniques which incorporate observable credit spreads, recovery rates and unobservable utilization parameters. Revolving loan facilities are reported in the third level of the hierarchy because the utilization in the event of the default parameter is significant and unobservable.

In addition, certain hybrid debt issuances designated at fair value through profit or loss containing embedded derivatives are valued based on significant unobservable parameters. These unobservable parameters include single stock volatility correlations. Assets marginally decreased during the year due to settlements and transfers between Level 2 and Level 3 offset by gains. Liabilities increased in the year due to issuances and transfers between Level 2 and Level 3 offset by settlements and gains.

Financial assets at fair value through other comprehensive income (2018)/Financial Assets Available for Sale (2017) include non-performing loan portfolios where there is no trading intent and the market is very illiquid. Assets increased marginally due to purchases offset by transfers between levels 2 and 3, sales, settlements and losses.

Reconciliation of financial instruments classified in Level 3

Reconciliation of financial instruments classified in Level 3

										Dec 31, 2018
in € m.	Balance, beginning of year	Changes in the group of consolidated companies	Total gains/ losses[1]	Purchases	Sales	Issuances[2]	Settlements[3]	Transfers into Level 3[4]	Transfers out of Level 3[4]	Balance, end of year
Financial assets held at fair value:										
Trading securities	4,148	6	105	2,146	(1,908)	0	(481)	897	(826)	4,086
Positive market values from derivative financial instruments	7,340	0	718	0	0	0	(137)	1,940	(1,551)	8,309
Other trading assets	4,426	0	233	981	(2,027)	3,055	(1,241)	506	(257)	5,676
Non-trading financial assets mandatory at fair value through profit or loss	4,573	3	426	3,627	(567)	1,013	(3,128)	411	(292)	6,066
Financial assets designated at fair value through profit or loss	91	0	4	0	0	0	(22)	0	(72)	0
Financial assets at fair value through other comprehensive income	231	3	(4)[5]	260	(162)	0	(6)	2	(55)	268
Other financial assets at fair value	47	0	0	0	0	0	0	207	(47)	207
Total financial assets held at fair value	20,855[8]	12	1,481[6,7]	7,014	(4,664)	4,068	(5,015)	3,963	(3,100)	24,614
Financial liabilities held at fair value:										
Trading securities	2	(0)	(1)	0	0	0	(0)	0	(1)	0
Negative market values from derivative financial instruments	5,992	0	531	0	0	0	(522)	1,319	(1,031)	6,289
Other trading liabilities	0	0	(1)	0	0	0	16	0	0	15
Financial liabilities designated at fair value through profit or loss	1,444	0	(121)	0	0	692	(270)	408	(134)	2,021
Other financial liabilities at fair value	(298)	0	(299)	0	0	0	38	(29)	(23)	(611)
Total financial liabilities held at fair value	7,139	0	110[6,7]	0	0	692	(738)	1,699	(1,189)	7,714

[1] Total gains and losses predominantly relate to net gains (losses) on financial assets/liabilities at fair value through profit or loss reported in the consolidated statement of income. The balance also includes net gains (losses) on financial assets available for sale reported in the consolidated statement of income and unrealized net gains (losses) on financial assets available for sale and exchange rate changes reported in other comprehensive income, net of tax. Further, certain instruments are hedged with instruments in Level 1 or Level 2 but the table above does not include the gains and losses on these hedging instruments. Additionally, both observable and unobservable parameters may be used to determine the fair value of an instrument classified within Level 3 of the fair value hierarchy; the gains and losses presented below are attributable to movements in both the observable and unobservable parameters.
[2] Issuances relate to the cash amount received on the issuance of a liability and the cash amount paid on the primary issuance of a loan to a borrower.
[3] Settlements represent cash flows to settle the asset or liability. For debt and loan instruments this includes principal on maturity, principal amortizations and principal repayments. For derivatives all cash flows are presented in settlements.
[4] Transfers in and transfers out of Level 3 are related to changes in observability of input parameters. During the year they are recorded at their fair value at the beginning of year. For instruments transferred into Level 3 the table shows the gains and losses and cash flows on the instruments as if they had been transferred at the beginning of the year. Similarly for instruments transferred out of Level 3 the table does not show any gains or losses or cash flows on the instruments during the year since the table is presented as if they have been transferred out at the beginning of the year.
[5] Total gains and losses on financial assets at fair value through other comprehensive income include a loss of € 8 million recognized in other comprehensive income, net of tax, and a loss of € 4 million recognized in the income statement presented in net gains (losses).
[6] This amount includes the effect of exchange rate changes. For total financial assets held at fair value this effect is a gain of € 136 million and for total financial liabilities held at fair value this is a loss of € 33 million. The effect of exchange rate changes is reported in other comprehensive income, net of tax.
[7] For assets positive balances represent gains, negative balances represent losses. For liabilities positive balances represent losses, negative balances represent gains.
[8] Opening balances have been restated due to reassessment of trades due to IFRS 9.

	Dec 31, 2017									
in € m.	Balance, beginning of year	Changes in the group of consoli-dated companies	Total gains/ losses[1]	Purchases	Sales	Issu-ances[2]	Settle-ments[3]	Transfers into Level 3[4]	Transfers out of Level 3[4]	Balance, end of year
Financial assets held at fair value:										
Trading securities	5,012	(1)	(153)	2,144	(1,660)	0	(818)	772	(662)	4,634
Positive market values from derivative financial instruments	9,798	(0)	(610)	0	0	0	(1,889)	2,298	(2,257)	7,340
Other trading assets	5,674	(7)	(283)	2,095	(2,328)	636	(1,803)	950	(524)	4,409
Financial assets designated at fair value through profit or loss	1,601	0	(78)	807	(118)	63	(710)	58	(134)	1,488
Financial assets available for sale	4,153	(40)	205[5]	722	(249)	0	(1,206)	539	(21)	4,104
Other financial assets at fair value	33	0	33	0	0	0	(26)	7	0	47
Total financial assets held at fair value	26,271	(47)	(886)[6, 7]	5,768	(4,356)	699	(6,453)	4,624	(3,598)	22,022
Financial liabilities held at fair value:										
Trading securities	52	0	(6)	0	0	0	(46)	1	0	2
Negative market values from derivative financial instruments	8,857	(5)	(64)	0	0	0	(1,827)	924	(1,892)	5,992
Other trading liabilities	0	0	(0)	0	0	0	0	0	0	0
Financial liabilities designated at fair value through profit or loss	2,229	(7)	(128)	0	0	146	(564)	154	(387)	1,444
Other financial liabilities at fair value	(848)	0	268	0	0	0	286	(18)	15	(298)
Total financial liabilities held at fair value	10,290	(12)	69[6,7]	0	0	146	(2,151)	1,061	(2,265)	7,139

[1] Total gains and losses predominantly relate to net gains (losses) on financial assets/liabilities at fair value through profit or loss reported in the consolidated statement of income. The balance also includes net gains (losses) on financial assets available for sale reported in the consolidated statement of income and unrealized net gains (losses) on financial assets available for sale and exchange rate changes reported in other comprehensive income, net of tax. Further, certain instruments are hedged with instruments in Level 1 or Level 2 but the table above does not include the gains and losses on these hedging instruments. Additionally, both observable and unobservable parameters may be used to determine the fair value of an instrument classified within Level 3 of the fair value hierarchy; the gains and losses presented below are attributable to movements in both the observable and unobservable parameters.
[2] Issuances relate to the cash amount received on the issuance of a liability and the cash amount paid on the primary issuance of a loan to a borrower.
[3] Settlements represent cash flows to settle the asset or liability. For debt and loan instruments this includes principal on maturity, principal amortizations and principal repayments. For derivatives all cash flows are presented in settlements.
[4] Transfers in and transfers out of Level 3 are related to changes in observability of input parameters. During the year they are recorded at their fair value at the beginning of year. For instruments transferred into Level 3 the table shows the gains and losses and cash flows on the instruments as if they had been transferred at the beginning of the year. Similarly for instruments transferred out of Level 3 the table does not show any gains or losses or cash flows on the instruments during the year since the table is presented as if they have been transferred out at the beginning of the year.
[5] Total gains and losses on available for sale include a gain of € 94 million recognized in other comprehensive income, net of tax, and a loss of € 8 million recognized in the income statement presented in net gains (losses) on financial assets available for sale.
[6] This amount includes the effect of exchange rate changes. For total financial assets held at fair value this effect is a loss of € 565 million and for total financial liabilities held at fair value this is a gain of € 123 million. The effect of exchange rate changes is reported in other comprehensive income, net of tax.
[7] For assets positive balances represent gains, negative balances represent losses. For liabilities positive balances represent losses, negative balances represent gains.

Sensitivity Analysis of Unobservable Parameters

Where the value of financial instruments is dependent on unobservable parameter inputs, the precise level for these parameters at the balance sheet date might be drawn from a range of reasonably possible alternatives. In preparing the financial statements, appropriate levels for these unobservable input parameters are chosen so that they are consistent with prevailing market evidence and in line with the Group's approach to valuation control detailed above. Were the Group to have marked the financial instruments concerned using parameter values drawn from the extremes of the ranges of reasonably possible alternatives then as of December 31, 2018 it could have increased fair value by as much as € 1.6 billion or decreased fair value by as much as € 1.0 billion. As of December 31, 2017 it could have increased fair value by as much as € 1.6 billion or decreased fair value by as much as € 1.0 billion.

The changes in sensitive amounts from December 31, 2017 to December 31, 2018 were an increase in positive fair value movement of € 91 million, and an increase in negative fair value movement of € 47 million. The increases in positive and negative fair value movements are largely in line with the increase in Group Level 3 in the period, with Level 3 assets increasing from € 22.0 billion at December 31 2017 to € 24.6 billion at December 31 2018, and Level 3 Liabilities increasing from € 7.1 billion at December 31 2017 to € 7.7 billion at December 31 2018. These moves represent a percentage increase of 11 % in Group Level 3 in gross terms.

The change in positive fair value movements from December 31, 2017 to December 31, 2018 represents a 6 % increase and the change in negative fair value movements represents a 5 % increase. These increases are proportionally smaller than the 11 % increase in Group Level 3 primarily due to changes to the underlying Level 3 population as a result of IFRS 9 implementation in the first quarter of 2018. A significant subset of positions which moved from fair value through profit and loss to amortized cost due to IFRS 9 were Non-Performing Loans, which had previously contributed materially to both the positive and negative fair value movement totals given the material valuation uncertainty associated with such assets.

Our sensitivity calculation of unobservable parameters for Level 3 aligns to the approach used to assess valuation uncertainty for Prudent Valuation purposes. Prudent Valuation is a capital requirement for assets held at fair value. It provides a mechanism for quantifying and capitalizing valuation uncertainty in accordance with the European Commission Delegated Regulation (EU) 2016/101, which supplements Article 34 of Regulation (EU) No. 575/2013 (CRR), requiring institutions to apply as a deduction from CET 1 for the amount of any additional value adjustments on all assets measured at fair value calculated in accordance with Article 105 (14). This utilizes exit price analysis performed for the relevant assets and liabilities in the Prudent Valuation assessment. The downside sensitivity may be limited in some cases where the fair value is already demonstrably prudent.

This disclosure is intended to illustrate the potential impact of the relative uncertainty in the fair value of financial instruments for which valuation is dependent on unobservable input parameters. However, it is unlikely in practice that all unobservable parameters would be simultaneously at the extremes of their ranges of reasonably possible alternatives. Hence, the estimates disclosed above are likely to be greater than the true uncertainty in fair value at the balance sheet date. Furthermore, the disclosure is neither predictive nor indicative of future movements in fair value.

For many of the financial instruments considered here, in particular derivatives, unobservable input parameters represent only a subset of the parameters required to price the financial instrument, the remainder being observable. Hence for these instruments the overall impact of moving the unobservable input parameters to the extremes of their ranges might be relatively small compared with the total fair value of the financial instrument. For other instruments, fair value is determined based on the price of the entire instrument, for example, by adjusting the fair value of a reasonable proxy instrument. In addition, all financial instruments are already carried at fair values which are inclusive of valuation adjustments for the cost to close out that instrument and hence already factor in uncertainty as it reflects itself in market pricing. Any negative impact of uncertainty calculated within this disclosure, then, will be over and above that already included in the fair value contained in the financial statements.

Breakdown of the sensitivity analysis by type of instrument[1]

	Dec 31, 2018		Dec 31, 2017	
in € m.	Positive fair value movement from using reasonable possible alternatives	Negative fair value movement from using reasonable possible alternatives	Positive fair value movement from using reasonable possible alternatives	Negative fair value movement from using reasonable possible alternatives
Securities:				
Debt securities	179	118	126	90
Commercial mortgage-backed securities	5	4	6	6
Mortgage and other asset-backed securities	38	37	26	28
Corporate, sovereign and other debt securities	136	77	94	56
Equity securities	84	67	95	67
Derivatives:				
Credit	151	116	155	125
Equity	257	207	164	138
Interest related	346	206	340	173
Foreign Exchange	49	26	65	12
Other	106	89	106	73
Loans:				
Loans	475	219	504	320
Other	**0**	**0**	0	0
Total	**1,647**	**1,046**	1,556	999

[1] Where the exposure to an unobservable parameter is offset across different instruments then only the net impact is disclosed in the table.

Quantitative Information about the Sensitivity of Significant Unobservable Inputs

The behavior of the unobservable parameters on Level 3 fair value measurement is not necessarily independent, and dynamic relationships often exist between the other unobservable parameters and the observable parameters. Such relationships, where material to the fair value of a given instrument, are explicitly captured via correlation parameters, or are otherwise controlled via pricing models or valuation techniques. Frequently, where a valuation technique utilizes more than one input, the choice of a certain input will bound the range of possible values for other inputs. In addition, broader market factors (such as interest rates, equity, credit or commodity indices or foreign exchange rates) can also have effects.

The range of values shown below represents the highest and lowest inputs used to value the significant exposures within Level 3. The diversity of financial instruments that make up the disclosure is significant and therefore the ranges of certain parameters can be large. For example, the range of credit spreads on mortgage backed securities represents performing, more liquid positions with lower spreads than the less liquid, non-performing positions which will have higher credit spreads. As Level 3 contains the less liquid fair value instruments, the wide ranges of parameters seen is to be expected, as there is a high degree of pricing differentiation within each exposure type to capture the relevant market dynamics. There follows a brief description of each of the principal parameter types, along with a commentary on significant interrelationships between them.

Credit Parameters are used to assess the creditworthiness of an exposure, by enabling the probability of default and resulting losses of a default to be represented. The credit spread is the primary reflection of creditworthiness, and represents the premium or yield return above the benchmark reference instrument (typically LIBOR, or relevant Treasury Instrument, depending upon the asset being assessed), that a bond holder would require to allow for the credit quality difference between that entity and the reference benchmark. Higher credit spreads will indicate lower credit quality, and lead to a lower value for a given bond or other loan-asset that is to be repaid to the holder or lender by the borrower. Recovery Rates represent an estimate of the amount a lender would receive in the case of a default of a loan, or a bond holder would receive in the case of default of the bond. Higher recovery rates will give a higher valuation for a given bond position, if other parameters are held constant. Constant Default Rate (CDR) and Constant Prepayment Rate (CPR) allow more complex loan and debt assets to be assessed, as these parameters estimate the ongoing defaults arising on scheduled repayments and coupons, or whether the borrower is making additional (usually voluntary) prepayments. These parameters are particularly relevant when forming a fair value opinion for mortgage or other types of lending, where repayments are delivered by the borrower through time, or where the borrower may pre-pay the loan (seen for example in some residential mortgages). Higher CDR will lead to lower valuation of a given loan or mortgage as the lender will ultimately receive less cash.

Interest rates, credit spreads, inflation rates, foreign exchange rates and equity prices are referenced in some option instruments, or other complex derivatives, where the payoff a holder of the derivative will receive is dependent upon the behavior of these underlying references through time. Volatility parameters describe key attributes of option behavior by enabling the variability of returns of the underlying instrument to be assessed. This volatility is a measure of probability, with higher volatilities denoting higher probabilities of a particular outcome occurring. The underlying references (interest rates, credit spreads etc.) have an effect on the valuation of options, by describing the size of the return that can be expected from the option. Therefore the value of a given option is dependent upon the value of the underlying instrument, and the volatility of that instrument, representing the size of the payoff, and the probability of that payoff occurring. Where volatilities are high, the option holder will see a higher option value as there is greater probability of positive returns. A higher option value will also occur where the payoff described by the option is significant.

Correlations are used to describe influential relationships between underlying references where a derivative or other instrument has more than one underlying reference. Behind some of these relationships, for example commodity correlation and interest rate-foreign exchange correlations, typically lie macroeconomic factors such as the impact of global demand on groups of commodities, or the pricing parity effect of interest rates on foreign exchange rates. More specific relationships can exist between credit references or equity stocks in the case of credit derivatives and equity basket derivatives, for example. Credit correlations are used to estimate the relationship between the credit performance of a range of credit names, and stock correlations are used to estimate the relationship between the returns of a range of equities. A derivative with a correlation exposure will be either long- or short-correlation. A high correlation suggests a strong relationship between the underlying references is in force, and this will lead to an increase in value of a long-correlation derivative. Negative correlations suggest that the relationship between underlying references is opposing, i.e., an increase in price of one underlying reference will lead to a reduction in the price of the other.

An EBITDA (‘earnings before interest, tax, depreciation and amortization’) multiple approach can be used in the valuation of less liquid securities. Under this approach the enterprise value (‘EV’) of an entity can be estimated via identifying the ratio of the EV to EBITDA of a comparable observable entity and applying this ratio to the EBITDA of the entity for which a valuation is being estimated. Under this approach a liquidity adjustment is often applied due to the difference in liquidity between the generally listed comparable used and the company under valuation. A higher EV/EBITDA multiple will result in a higher fair value.

Financial instruments classified in Level 3 and quantitative information about unobservable inputs

Dec 31, 2018

in € m. (unless stated otherwise)	Fair value Assets	Fair value Liabilities	Valuation technique(s)[1]	Significant unobservable input(s) (Level 3)	Range	
Financial instruments held at fair value – held for trading, mandatory at fair value, designated at fair value, at fair value through OCI:						
Mortgage and other asset backed securities held for trading:						
Commercial mortgage-backed securities	66	0	Price based	Price	0 %	120 %
			Discounted cash flow	Credit spread (bps)	97	1,444
Mortgage- and other asset-backed securities						
	745	0	Price based	Price	0 %	102 %
			Discounted cash flow	Credit spread (bps)	26	2,203
				Recovery rate	0 %	90 %
				Constant default rate	0 %	16 %
				Constant prepayment rate	0 %	42 %
Total mortgage- and other asset-backed securities	**811**	**0**				
Debt securities and other debt obligations	3,876	1,764	Price based	Price	0 %	148 %
Held for trading	3,037	0	Discounted cash flow	Credit spread (bps)	5	582
Corporate, sovereign and other debt securities	3,037					
Non-trading financial assets mandatory at fair value through profit or loss	726					
Designated at fair value through profit or loss	0	1,764				
Financial assets at fair value through other comprehensive income	114					
Equity securities	1,244	0	Market approach	Price per net asset value	70 %	100 %
Held for trading	239	0		Enterprise value/EBITDA (multiple)	6	17
Non-trading financial assets mandatory at fair value through profit or loss	1,005		Discounted cash flow	Weighted average cost capital	7 %	20 %
Loans	7,167	15	Price based	Price	0 %	341 %
Held for trading	5,651	15	Discounted cash flow	Credit spread (bps)	40	930
Non-trading financial assets mandatory at fair value through profit or loss	1,362			Constant default rate	0	0
Designated at fair value through profit or loss	0	0		Recovery rate	35 %	40 %
Financial assets at fair value through other comprehensive income	154					
Loan commitments	0	0	Discounted cash flow	Credit spread (bps)	30	2,864
				Recovery rate	25 %	75 %
			Loan pricing model	Utilization	0 %	100 %
Other financial instruments	2,999[2]	257[3]	Discounted cash flow	IRR	3 %	46 %
				Repo rate (bps)	65	387
Total non-derivative financial instruments held at fair value	**16,097**	**2,037**				

[1] Valuation technique(s) and subsequently the significant unobservable input(s) relate to the respective total position.
[2] Other financial assets include € 26 million of other trading assets and € 3.0 billion of other financial assets mandatory at fair value.
[3] Other financial liabilities include € 185 million of securities sold under repurchase agreements designated at fair value and € 72 million of other financial liabilities designated at fair value.

					Dec 31, 2018	
	Fair value					
in € m. (unless stated otherwise)	Assets	Liabilities	Valuation technique(s)	Significant unobservable input(s) (Level 3)		Range
Financial instruments held at fair value:						
Market values from derivative financial instruments:						
Interest rate derivatives	4,264	2,568	Discounted cash flow	Swap rate (bps)	(124)	2,316
				Inflation swap rate	1 %	6 %
				Constant default rate	0 %	35 %
				Constant prepayment rate	2 %	43 %
			Option pricing model	Inflation volatility	0 %	5 %
				Interest rate volatility	0 %	31 %
				IR - IR correlation	(30) %	90 %
				Hybrid correlation	(59) %	75 %
Credit derivatives	638	964	Discounted cash flow	Credit spread (bps)	0	1,541
				Recovery rate	0 %	80 %
			Correlation pricing model	Credit correlation	25 %	85 %
Equity derivatives	1,583	1,498	Option pricing model	Stock volatility	4 %	96 %
				Index volatility	11 %	79 %
				Index - index correlation	1	1
				Stock - stock correlation	2 %	89 %
				Stock Forwards	0 %	63 %
				Index Forwards	0 %	5 %
FX derivatives	1,034	1,005	Option pricing model	Volatility	(6) %	34 %
Other derivatives	997	(357)[1]	Discounted cash flow	Credit spread (bps)	–	–
			Option pricing model	Index volatility	5 %	92 %
				Commodity correlation	0 %	0 %
Total market values from derivative financial instruments	8,516	5,677				

[1] Includes derivatives which are embedded in contracts where the host contract is held at amortized cost but for which the embedded derivative is separated.

	Dec 31, 2017					
	Fair value					
in € m. (unless stated otherwise)	Assets	Liabilities	Valuation technique(s)[1]	Significant unobservable input(s) (Level 3)		Range
Financial instruments held at fair value – held for trading, designated at fair value and available for sale:						
Mortgage and other asset backed securities held for trading:						
Commercial mortgage-backed securities	79	0	Price based	Price	0 %	102 %
			Discounted cash flow	Credit spread (bps)	136	2,217
Mortgage- and other asset-backed securities	714	0	Price based	Price	0 %	102 %
			Discounted cash flow	Credit spread (bps)	12	2,000
				Recovery rate	0 %	90 %
				Constant default rate	0 %	25 %
				Constant prepayment rate	0 %	29 %
Total mortgage- and other asset-backed securities	**793**	**0**				
Debt securities and other debt obligations	3,870	1,307	Price based	Price	0 %	176 %
Held for trading	3,559	2	Discounted cash flow	Credit spread (bps)	34	500
Corporate, sovereign and other debt securities	3,559					
Designated at fair value through profit or loss	44	1,305				
Available-for-sale	267					
Equity securities	913	0	Market approach	Price per net asset value	60 %	100 %
Held for trading	282	0		Enterprise value/EBITDA (multiple)	1	14
Designated at fair value through profit or loss	151		Discounted cash flow	Weighted average cost capital	8 %	20 %
Available-for-sale	480					
Loans	7,397	0	Price based	Price	0 %	161 %
Held for trading	4,376	0	Discounted cash flow	Credit spread (bps)	190	1,578
Designated at fair value through profit or loss	338	0		Constant default rate	–	–
Available-for-sale	2,684			Recovery rate	40 %	40 %
Loan commitments	0	8	Discounted cash flow	Credit spread (bps)	5	261
				Recovery rate	37 %	75 %
			Loan pricing model	Utilization	0 %	100 %
Other financial instruments	1,710[2]	131[3]	Discounted cash flow	IRR	1 %	24 %
				Repo rate (bps)	224	254
Total non-derivative financial instruments held at fair value	**14,683**	**1,446**				

[1] Valuation technique(s) and subsequently the significant unobservable input(s) relate to the respective total position.
[2] Other financial assets include € 34 million of other trading assets, € 956 million of other financial assets designated at fair value and € 674 million other financial assets available for sale.
[3] Other financial liabilities include € 131 million of securities sold under repurchase agreements designated at fair value.

					Dec 31, 2017	
	Fair value					
in € m. (unless stated otherwise)	Assets	Liabilities	Valuation technique(s)	Significant unobservable input(s) (Level 3)		Range
Financial instruments held at fair value:						
Market values from derivative financial instruments:						
Interest rate derivatives	4,466	2,250	Discounted cash flow	Swap rate (bps)	(72)	1,036
				Inflation swap rate	(3) %	11 %
				Constant default rate	0 %	16 %
				Constant prepayment rate	2 %	38 %
			Option pricing model	Inflation volatility	0 %	5 %
				Interest rate volatility	0 %	103 %
				IR - IR correlation	(25) %	100 %
				Hybrid correlation	(85) %	90 %
Credit derivatives	630	909	Discounted cash flow	Credit spread (bps)	0	17,957
				Recovery rate	0 %	94 %
			Correlation pricing model	Credit correlation	37 %	90 %
Equity derivatives	728	1,347	Option pricing model	Stock volatility	6 %	90 %
				Index volatility	7 %	53 %
				Index - index correlation	–	–
				Stock - stock correlation	2 %	93 %
				Stock Forwards	0 %	7 %
				Index Forwards	0 %	95 %
FX derivatives	1,113	1,058	Option pricing model	Volatility	(6) %	31 %
Other derivatives	402	129[1]	Discounted cash flow	Credit spread (bps)	–	–
			Option pricing model	Index volatility	0 %	79 %
				Commodity correlation	10 %	75 %
Total market values from derivative financial instruments	7,340	5,693				

[1] Includes derivatives which are embedded in contracts where the host contract is held at amortized cost but for which the embedded derivative is separated.

Unrealized Gains or Losses on Level 3 Instruments held or in Issue at the Reporting Date

The unrealized gains or losses on Level 3 Instruments are not due solely to unobservable parameters. Many of the parameter inputs to the valuation of instruments in this level of the hierarchy are observable and the gain or loss is partly due to movements in these observable parameters over the period. Many of the positions in this level of the hierarchy are economically hedged by instruments which are categorized in other levels of the fair value hierarchy. The offsetting gains and losses that have been recorded on all such hedges are not included in the table below, which only shows the gains and losses related to the Level 3 classified instruments themselves held at the reporting date in accordance with IFRS 13.The unrealized gains and losses on Level 3 instruments are included in both net interest income and net gains on financial assets/liabilities at fair value through profit or loss in the consolidated income statement.

in € m.	Dec 31, 2018	Dec 31, 2017
Financial assets held at fair value:		
Trading securities	46	(15)
Positive market values from derivative financial instruments	1,152	171
Other trading assets	136	55
Non-trading financial assets mandatory at fair value through profit or loss	354	N/A
Financial assets designated at fair value through profit or loss	0	2
Financial assets at fair value through other comprehensive income	2	N/A
Financial assets available for sale	N/A	123
Other financial assets at fair value	2	33
Total financial assets held at fair value	**1,692**	368
Financial liabilities held at fair value:		
Trading securities	0	3
Negative market values from derivative financial instruments	(849)	(740)
Other trading liabilities	0	0
Financial liabilities designated at fair value through profit or loss	124	4
Other financial liabilities at fair value	294	(249)
Total financial liabilities held at fair value	**(431)**	(981)
Total	**1,261**	(613)

Recognition of Trade Date Profit

If there are significant unobservable inputs used in a valuation technique, the financial instrument is recognized at the transaction price and any trade date profit is deferred. The table below presents the year-to-year movement of the trade date profits deferred due to significant unobservable parameters for financial instruments classified at fair value through profit or loss. The balance is predominantly related to derivative instruments.

in € m.	2018	2017
Balance, beginning of year	**596**[1]	916
New trades during the period	226	277
Amortization	(126)	(282)
Matured trades	(126)	(140)
Subsequent move to observability	(42)	(71)
Exchange rate changes	2	(11)
Balance, end of year	**531**	690

[1] Opening balances have been restated due to reassessment of trades due to IFRS 9.

14 – Fair Value of Financial Instruments not carried at Fair Value

The valuation techniques used to establish fair value for the Group's financial instruments which are not carried at fair value in the balance sheet and their respective IFRS fair value hierarchy categorization are consistent with those outlined in Note 13 "Financial Instruments carried at Fair Value".

Other financial instruments not carried at fair value are not managed on a fair value basis, for example, retail loans and deposits and credit facilities extended to corporate clients. For these instruments fair values are calculated for disclosure purposes only and do not impact the balance sheet or income statement. Additionally, since the instruments generally do not trade there is significant management judgment required to determine these fair values.

Short-term financial instruments – The carrying value represents a reasonable estimate of fair value for the following financial instruments which are predominantly short-term:

Assets	Liabilities
Cash and central bank balances	Deposits
Interbank balances (w/o central banks)	Central bank funds purchased and securities sold under repurchase agreements
Central bank funds sold and securities purchased under resale agreements	Securities loaned
Securities borrowed	Other short-term borrowings
Other financial assets	Other financial liabilities

For longer-term financial instruments within these categories, fair value is determined by discounting contractual cash flows using rates which could be earned for assets with similar remaining maturities and credit risks and, in the case of liabilities, rates at which the liabilities with similar remaining maturities could be issued, at the balance sheet date.

Loans – Fair value is determined using discounted cash flow models that incorporate parameter inputs for credit risk, interest rate risk, foreign exchange risk, loss given default estimates and amounts utilized given default, as appropriate. Credit risk, loss given default and utilization given default parameters are determined using information from the loan agreement or credit default swap markets, where available and appropriate.

For retail lending portfolios with a large number of homogenous loans (i.e. German residential mortgages), the fair value is calculated on a portfolio basis by discounting the portfolio's contractual cash flows using own new interest rates on this type of loan. For similar retail lending portfolios outside Germany, the fair value is calculated on a portfolio basis by discounting the portfolio's contractual cash flows using risk-free interest rates. This present value calculation is then adjusted for credit risk by discounting at the margins which could be earned on similar loans if issued at the balance sheet date. For other portfolios the present value calculation is adjusted for credit risk by calculating the expected loss over the estimated life of the loan based on various parameters including probability of default and loss given default and level of collateralization. The fair value of corporate lending portfolios is estimated by discounting a projected margin over expected maturities using parameters derived from the current market values of collateralized loan obligation ("CLO") transactions collateralized with loan portfolios that are similar to the Group's corporate lending portfolio.

Securities purchased under resale agreements, securities borrowed, securities sold under repurchase agreements and securities loaned – Fair value is derived from valuation techniques by discounting future cash flows using the appropriate credit risk-adjusted discount rate. The credit risk-adjusted discount rate includes consideration of the collateral received or pledged in the transaction. These products are typically short-term and highly collateralized, therefore the fair value is not significantly different to the carrying value.

Long-term debt and trust preferred securities – Fair value is determined from quoted market prices, where available. Where quoted market prices are not available, fair value is estimated using a valuation technique that discounts the remaining contractual cash at a rate at which an instrument with similar characteristics could be issued at the balance sheet date.

Estimated fair value of financial instruments not carried at fair value on the balance sheet[1]

					Dec 31, 2018
in € m.	Carrying value	Fair value	Quoted prices in active market (Level 1)	Valuation technique observable parameters (Level 2)	Valuation technique unobservable parameters (Level 3)
Financial assets:					
Cash and central bank balances	188,731	188,731	188,731	0	0
Interbank balances (w/o central banks)	8,881	8,881	78	8,804	0
Central bank funds sold and securities purchased under resale agreements	8,222	8,223	0	8,223	0
Securities borrowed	3,396	3,396	0	3,396	0
Loans	400,297	395,900	0	10,870	385,029
Securities held to maturity	0	0	0	0	0
Other financial assets	80,089	80,193	850	79,343	1
Financial liabilities:					
Deposits	564,405	564,637	516	563,850	272
Central bank funds purchased and securities sold under repurchase agreements	4,867	4,867	0	4,867	0
Securities loaned	3,359	3,359	0	3,359	0
Other short-term borrowings	14,158	14,159	0	14,159	0
Other financial liabilities	100,683	100,683	1,816	98,866	1
Long-term debt	152,083	149,128	0	140,961	8,167
Trust preferred securities	3,168	3,114	0	3,114	0

					Dec 31, 2017
in € m.	Carrying value	Fair value	Quoted prices in active market (Level 1)	Valuation technique observable parameters (Level 2)	Valuation technique unobservable parameters (Level 3)
Financial assets:					
Cash and central bank balances	225,655	225,655	225,655	0	0
Interbank balances (w/o central banks)	9,265	9,265	76	9,189	0
Central bank funds sold and securities purchased under resale agreements	9,971	9,973	0	9,973	0
Securities borrowed	16,732	16,732	0	16,732	0
Loans	401,699	403,842	0	24,643	379,199
Securities held to maturity	3,170	3,238	3,238	0	0
Other financial assets	88,936	88,939	0	88,939	0
Financial liabilities:					
Deposits	580,812	580,945	2,108	578,837	(0)
Central bank funds purchased and securities sold under repurchase agreements	18,105	18,103	0	18,103	0
Securities loaned	6,688	6,688	0	6,688	0
Other short-term borrowings	18,411	18,412	0	18,412	0
Other financial liabilities[2]	116,101	116,101	1,875	114,226	0
Long-term debt	159,715	161,829	0	152,838	8,991
Trust preferred securities	5,491	5,920	0	5,920	0

[1] Amounts generally presented on a gross basis, in line with the Group's accounting policy regarding offsetting of financial instruments as described in Note 1 "Significant Accounting Policies and Critical Accounting Estimates".
[2] Restatement undertaken represents pure reclass from Note 14 "Fair Value of Financial Instruments not carried at Fair Value" to Note 13 "Financial Instruments carried at Fair Value".

Loans – The difference between fair value and carrying value arose predominantly due to an increase in expected default rates and reduction in liquidity as implied from market pricing since initial recognition. These reductions in fair value are offset by an increase in fair value due to interest rate movements on fixed rate instruments.

Long-term debt and trust preferred securities – The difference between fair value and carrying value is due to the effect of changes in the rates at which the Group could issue debt with similar maturity and subordination at the balance sheet date compared to when the instrument was issued.

15 – Financial Assets Available for Sale

in € m.	Dec 31, 2018	Dec 31, 2017
Debt securities:		
German government	N/A	8,131
U.S. Treasury and U.S. government agencies	N/A	8,092
U.S. local (municipal) governments	N/A	2,436
Other foreign governments	N/A	19,275
Corporates	N/A	6,775
Other asset-backed securities	N/A	1
Mortgage-backed securities, including obligations of U.S. federal agencies	N/A	11
Other debt securities	N/A	359
Total debt securities	**N/A**	45,081
Equity securities:		
Equity shares	N/A	897
Investment certificates and mutual funds	N/A	97
Total equity securities	**N/A**	994
Other equity interests	**N/A**	636
Loans	**N/A**	2,685
Total financial assets available for sale	**N/A**	49,397

Please also refer to Note 7 “Net Gains (Losses) on Financial Assets Available for Sale” of this report.

16 – Financial assets at fair value through other comprehensive income

in € m.	Dec 31, 2018	Dec 31, 2017
Securities purchased under resale agreement	**1,097**	N/A
Debt securities:		
German government	7,705	N/A
U.S. Treasury and U.S. government agencies	13,118	N/A
U.S. local (municipal) governments	101	N/A
Other foreign governments	18,152	N/A
Corporates	5,606	N/A
Other asset-backed securities	27	N/A
Mortgage-backed securities, including obligations of U.S. federal agencies	103	N/A
Other debt securities	181	N/A
Total debt securities	**44,993**	N/A
Loans	**5,092**	N/A
Total financial assets at fair value through other comprehensive income	**51,182**	N/A

17 – Financial Instruments Held to Maturity

In the first quarter of 2016, the Group began to use the Held to Maturity category to more appropriately present income and capital volatility in its banking book. In addition to managing the Group's existing banking book exposure to interest rates, this accounting classification supports certain of the Group's asset liability management objectives, e.g. maturity transformation.

The Group reclassified € 3.2 billion of securities held Available for Sale to Held to Maturity investments effective January 4, 2016. All reclassified assets are high quality Government, supranational and agency bonds and are managed by Group Treasury as part of the Group's Strategic Liquidity Reserve.

Carrying values and fair values of financial assets reclassified from Available for Sale to Held to Maturity

	Dec 31, 2018		Dec 31, 2017	
in € m.	Carrying value (CV)	Fair Value (FV)	Carrying value (CV)	Fair Value (FV)
Debt securities reclassified:				
G7 Government bonds	N/A	N/A	423	434
Other Government, supranational and agency bonds	N/A	N/A	2,747	2,804
Total financial assets reclassified to Held-to-Maturity	**N/A**	**N/A**	**3,170**	**3,238**

18 – Equity Method Investments

Investments in associates and jointly controlled entities are accounted for using the equity method of accounting.

The Group holds interests in 65 (2017: 77) associates and 13 (2017: 13) jointly controlled entities. Two associates are considered to be material to the Group.

Significant investments as of December 31, 2018[1]

Investment	Principal place of business	Nature of relationship	Ownership percentage
Huarong Rongde Asset Management Company Limited	Beijing, China	Strategic Investment	40.7 %
Harvest Fund Management Co., Ltd.	Shanghai, China	Strategic Investment	30.0 %

[1] The Group has significant influence over these investees through its holding percentage and representation on the board seats.

Summarized financial information on Huarong Rongde Asset Management Company Limited[1]

in € m.	Dec 31, 2017	Dec 31, 2016
Total net revenues	197	193
Net income	157	146
Other comprehensive income	(19)	(2)
Total comprehensive income[2]	**138**	143

in € m.	Dec 31, 2017	Dec 31, 2016
Total assets	7,058	5,243
Total liabilities	5,579	4,052
Noncontrolling Interest	739	534
Net assets of the equity method investee	**740**	657

[1] Due to the difference in reporting timelines for the Group and Huarong Rongde Asset Management Company Limited Equity method accounting was performed for December 2018 based on December 2017 PRC GAAP audited financials and for December 2017 based on December 2016 PRC GAAP audited financials.
[2] The Group received dividends from Huarong Rongde Asset Management Company Limited of € 17 million during the reporting period 2018 (2017: € 23 million)

Reconciliation of total net assets of Huarong Rongde Asset Management Company Limited to the Group's carrying amount[1]

in € m.	Dec 31, 2017	Dec 31, 2016
Net assets of the equity method investee	740	657
Group's ownership percentage on the investee's equity	40.7 %	40.7 %
Group's share of net assets	301	268
Goodwill	0	0
Intangible Assets	0	0
Other adjustments	(17)	(22)
Carrying amount[2]	**284**	246

[1] Due to the difference in reporting timelines for the Group and Huarong Rongde Asset Management Company Limited Equity method accounting was performed for December 2018 based on December 2017 PRC GAAP audited financials and for December 2017 based on December 2016 PRC GAAP audited financials.
[2] There is no impairment loss in 2018 and 2017

Summarized financial information on Harvest Fund Management Co., Ltd.

in € m.	Dec 31, 2018[1]	Dec 31, 2017[2]
Total net revenues	597	537
Net income	162	152
Other comprehensive income	1	(1)
Total comprehensive income[3]	**163**	150

in € m.	Dec 31, 2018	Dec 31, 2017
Total assets	1,123	1,448
Total liabilities	398	853
Noncontrolling Interest	45	24
Net assets of the equity method investee	**681**	571

[1] December 2018 numbers are based on 2018 unaudited financials
[2] December 2017 numbers are based on 2017 audited financials
[3] The Group received dividends from Harvest Fund Management Co., Ltd. of € 12 million during the reporting period 2018 (2017: € 7 million)

Reconciliation of total net assets of Harvest Fund Management Co., Ltd. to the Group's carrying amount

in € m.	Dec 31, 2018[1]	Dec 31, 2017[2]
Net assets of the equity method investee	681	571
Group's ownership percentage on the investee's equity	30 %	30 %
Group's share of net assets	204	171
Goodwill	17	16
Intangible Assets	14	14
Other adjustments	1	4
Carrying amount[3]	**236**	205

[1] December 2018 numbers are based on 2018 unaudited financials
[2] December 2017 numbers are based on 2017 audited financials
[3] There is no impairment loss in 2018 (€ 1 million in 2017)

Aggregated financial information on the Group's share in associates and joint ventures that are individually immaterial

in € m.	Dec 31, 2018	Dec 31, 2017
Carrying amount of all associates that are individually immaterial to the Group	**359**	415
Aggregated amount of the Group's share of profit (loss) from continuing operations	30	35
Aggregated amount of the Group's share of post-tax profit (loss) from discontinued operations	0	0
Aggregated amount of the Group's share of other comprehensive income	(8)	(33)
Aggregated amount of the Group's share of total comprehensive income	**22**	2

19 – Offsetting Financial Assets and Financial Liabilities

The Group is eligible to present certain financial assets and financial liabilities on a net basis on the balance sheet pursuant to criteria described in Note 1 “Significant Accounting Policies and Critical Accounting Estimates: Offsetting Financial Instruments”.

The following tables provide information on the impact of offsetting on the consolidated balance sheet, as well as the financial impact of netting for instruments subject to an enforceable master netting arrangement or similar agreement as well as available cash and financial instrument collateral.

Assets

Dec 31, 2018

in € m.	Gross amounts of financial assets	Gross amounts set off on the balance sheet	Net amounts of financial assets presented on the balance sheet	Amounts not set off on the balance sheet			Net amount
				Impact of Master Netting Agreements	Cash collateral	Financial instrument collateral[1]	
Central bank funds sold and securities purchased under resale agreements (enforceable)	8,194	(2,629)	5,565	0	0	(5,565)	0
Central bank funds sold and securities purchased under resale agreements (non-enforceable)	2,656	0	2,656	0	0	(2,169)	488
Securities borrowed (enforceable)	3,157	0	3,157	0	0	(3,055)	102
Securities borrowed (non-enforceable)	239	0	239	0	0	(239)	0
Financial assets at fair value through profit or loss (enforceable)	435,306	(73,286)	362,020	(250,476)	(39,006)	(63,733)	8,805
Of which: Positive market values from derivative financial instruments (enforceable)	324,348	(19,269)	305,080	(250,231)	(38,731)	(6,682)	9,436
Financial assets at fair value through profit or loss (non-enforceable)	211,323	0	211,323	0	(1,858)	(12,013)	197,452
Of which: Positive market values from derivative financial instruments (non-enforceable)	14,978	0	14,978	0	(1,858)	(1,277)	11,843
Total financial assets at fair value through profit or loss	646,629	(73,286)	573,344	(250,476)	(40,864)	(75,746)	206,257
Loans at amortized cost	400,297	0	400,297	0	(13,505)	(39,048)	347,743
Other assets	107,633	(14,189)	93,444	(29,073)	(522)	(92)	63,757
Of which: Positive market values from derivatives qualifying for hedge accounting (enforceable)	3,451	(423)	3,028	(2,347)	(520)	(92)	69
Remaining assets subject to netting	1,097	0	1,097	0	0	(621)	475
Remaining assets not subject to netting	268,338	0	268,338	0	(227)	(1,540)	266,571
Total assets	1,438,241	(90,104)	1,348,137	(279,550)	(55,118)	(128,075)	885,394

[1] Excludes real estate and other non-financial instrument collateral.

Liabilities

in €	Gross amounts of financial liabilities	Gross amounts set off on the balance sheet	Net amounts of financial liabilities presented on the balance sheet	Amounts not set off on the balance sheet: Impact of Master Netting Agreements	Amounts not set off on the balance sheet: Cash collateral	Amounts not set off on the balance sheet: Financial instrument collateral	Net amount
	Dec 31, 2018						
Deposits	564,405	0	564,405	0	0	0	564,405
Central bank funds purchased and securities sold under repurchase agreements (enforceable)	7,145	(3,677)	3,468	0	0	(3,468)	0
Central bank funds purchased and securities sold under repurchase agreements (non-enforceable)	1,399	0	1,399	0	0	(1,140)	259
Securities loaned (enforceable)	3,164	0	3,164	0	0	(3,164)	0
Securities loaned (non-enforceable)	195	0	195	0	0	(164)	31
Financial liabilities at fair value through profit or loss (enforceable)	399,625	(71,469)	328,156	(251,495)	(25,232)	(40,935)	10,493
Of which: Negative market values from derivative financial instruments (enforceable)	309,401	(18,978)	290,423	(250,908)	(25,232)	(4,805)	9,478
Financial liabilities at fair value through profit or loss (non-enforceable)	87,524	0	87,524	0	(2,301)	(11,268)	73,955
Of which: Negative market values from derivative financial instruments (non-enforceable)	11,064	0	11,064	0	(1,494)	(573)	8,996
Total financial liabilities at fair value through profit or loss	487,149	(71,469)	415,680	(251,495)	(27,533)	(52,204)	84,448
Other liabilities	132,470	(14,957)	117,513	(42,260)	(73)	(158)	75,022
Of which: Negative market values from derivatives qualifying for hedge accounting (enforceable)	2,537	(615)	1,922	(1,670)	(71)	(158)	23
Remaining liabilities not subject to netting	173,577	0	173,577	0	0	0	173,577
Total liabilities	1,369,503	(90,104)	1,279,400	(293,755)	(27,606)	(60,297)	897,742

Assets

in € m.	Gross amounts of financial assets	Gross amounts set off on the balance sheet	Net amounts of financial assets presented on the balance sheet	Amounts not set off on the balance sheet: Impact of Master Netting Agreements	Amounts not set off on the balance sheet: Cash collateral	Amounts not set off on the balance sheet: Financial instrument collateral[1]	Net amount
	Dec 31, 2017						
Central bank funds sold and securities purchased under resale agreements (enforceable)	8,136	(455)	7,681	0	0	(7,675)	7
Central bank funds sold and securities purchased under resale agreements (non-enforceable)	2,290	0	2,290	0	0	(2,239)	51
Securities borrowed (enforceable)	14,987	0	14,987	0	0	(14,093)	894
Securities borrowed (non-enforceable)	1,744	0	1,744	0	0	(1,661)	83
Financial assets at fair value through profit or loss							
Trading assets	185,127	(465)	184,661	0	(81)	(86)	184,495
Positive market values from derivative financial instruments (enforceable)	363,859	(18,237)	345,622	(285,421)	(41,842)	(7,868)	10,490
Positive market values from derivative financial instruments (non-enforceable)	15,410	0	15,410	0	(1,811)	(1,276)	12,323
Financial assets designated at fair value through profit or loss (enforceable)	125,869	(64,003)	61,865	(728)	(773)	(56,410)	3,954
Financial assets designated at fair value through profit or loss (non-enforceable)	29,411	0	29,411	0	0	(20,534)	8,876
Total financial assets at fair value through profit or loss	719,676	(82,706)	636,970	(286,149)	(44,508)	(86,174)	220,138
Loans	401,699	0	401,699	0	(12,642)	(40,775)	348,282
Other assets	112,023	(10,531)	101,491	(29,854)	(569)	(94)	70,975
of which: Positive market values from derivatives qualifying for hedge accounting (enforceable)	3,859	(706)	3,153	(2,461)	(565)	(94)	33
Remaining assets not subject to netting	307,869	0	307,869	0	(390)	(70)	307,409
Total assets	1,568,425	(93,692)	1,474,732	(316,003)	(58,109)	(152,782)	947,839

[1] Excludes real estate and other non-financial instrument collateral.

Liabilities

							Dec 31, 2017
				Amounts not set off on the balance sheet			
in €	Gross amounts of financial liabilities	Gross amounts set off on the balance sheet	Net amounts of financial liabilities presented on the balance sheet	Impact of Master Netting Agreements	Cash collateral	Financial instrument collateral	Net amount
Deposits	581,873	0	581,873	0	0	0	581,873
Central bank funds purchased and securities sold under repurchase agreements (enforceable)	13,318	(455)	12,863	0	0	(12,863)	0
Central bank funds purchased and securities sold under repurchase agreements (non-enforceable)	5,242	0	5,242	0	0	(4,985)	257
Securities loaned (enforceable)	6,688	0	6,688	0	0	(6,688)	0
Securities loaned (non-enforceable)	0	0	0	0	0	0	0
Financial liabilities at fair value through profit or loss							
Trading liabilities	72,106	(643)	71,462	0	0	0	71,462
Negative market values from derivative financial instruments (enforceable)	347,496	(17,928)	329,568	(286,720)	(25,480)	(6,124)	11,244
Negative market values from derivative financial instruments (non-enforceable)	13,158	0	13,158	0	(1,913)	(615)	10,630
Financial liabilities designated at fair value through profit or loss (enforceable)	104,594	(63,360)	41,234	(728)	0	(40,506)	0
Financial liabilities designated at fair value through profit or loss (non-enforceable)	23,214	0	23,214	0	1,111	(13,646)	10,679
Total financial liabilities at fair value through profit or loss	560,568	(81,932)	478,636	(287,448)	(26,282)	(60,891)	104,015
Other liabilities	143,514	(11,306)	132,208	(44,815)	(31)	(87)	87,275
of which: Negative market values from derivatives qualifying for hedge accounting (enforceable)	1,841	(547)	1,294	(1,162)	(31)	(87)	15
Remaining liabilities not subject to netting	189,122	0	189,122	0	0	0	189,122
Total liabilities	1,500,326	(93,692)	1,406,633	(332,263)	(26,314)	(85,514)	962,542

The column ‘Gross amounts set off on the balance sheet’ discloses the amounts offset in accordance with all the criteria described in Note 1 “Significant Accounting Policies and Critical Accounting Estimates: Offsetting Financial Instruments”.

The column ‘Impact of Master Netting Agreements’ discloses the amounts that are subject to master netting agreements but were not offset because they did not meet the net settlement/simultaneous settlement criteria; or because the rights of set off are conditional upon the default of the counterparty only. The amounts presented for other assets and other liabilities include cash margin receivables and payables respectively.

The columns ‘Cash collateral’ and ‘Financial instrument collateral’ disclose the cash and financial instrument collateral amounts received or pledged in relation to the total amounts of assets and liabilities, including those that were not offset.

Non-enforceable master netting agreements or similar agreements refer to contracts executed in jurisdictions where the rights of set off may not be upheld under the local bankruptcy laws.

The cash collateral received against the positive market values of derivatives and the cash collateral pledged towards the negative mark-to-market values of derivatives are booked within the ‘Other liabilities’ and ‘Other assets’ balances respectively.

The Cash and Financial instrument collateral amounts disclosed reflect their fair values. The rights of set off relating to the cash and financial instrument collateral are conditional upon the default of the counterparty.

20 – Loans

For 2018, we provide information following the IFRS 9 accounting standard, while 2017 numbers are based on the IAS 39 accounting rules and are presented in the old format. Since the accounting requirements have changed significantly, numbers are not comparable. In previous years only Loans classified at amortized cost under IAS 39 were considered. Now the entire loan book is presented, including Loans classified at amortized cost, loans mandatory at fair value through profit and loss and loans at fair value through other consolidated income. For further information please refer to chapter "IFRS 9 Transition Impact Analysis" in Note 2 "Recently Adopted and New Accounting Pronouncements" to the consolidated financial statement.

The below table gives an overview of our loan exposure by industry, allocated based on the NACE code of the counterparty. NACE (Nomenclature des Activités Économiques dans la Communauté Européenne) is a standard European industry classification system. Current year table provides further breakdown on industry to increase the transparency.

Loans by industry classification

in € m.	Dec 31, 2018
Agriculture, forestry and fishing	655
Mining and quarrying	3,699
Manufacturing	30,966
Electricity, gas, steam and air conditioning supply	3,555
Water supply, sewerage, waste management and remediation activities	895
Construction	4,421
Wholesale and retail trade, repair of motor vehicles and motorcycles	21,871
Transport and storage	6,548
Accommodation and food service activities	2,094
Information and communication	5,281
Financial and insurance activities	93,886
Real estate activities	35,153
Professional, scientific and technical activities	7,020
Administrative and support service activities	7,921
Public administration and defense, compulsory social security	10,752
Education	698
Human health services and social work activities	3,618
Arts, entertainment and recreation	951
Other service activities	5,328
Activities of households as employers, undifferentiated goods- and services-producing activities of households for own use	188,494
Activities of extraterritorial organizations and bodies	25
Gross loans	433,832
(Deferred expense)/unearned income	254
Loans less (deferred expense)/unearned income	433,578
Less: Allowance for loan losses	4,247
Total loans	429,331

in € m.	Dec 31, 2017
Financial intermediation	52,204
Manufacturing	27,478
of which:	
Basic metals and fabricated metal products	4,211
Electrical and optical equipment	3,386
Transport equipment	3,374
Chemicals and chemical products	3,623
Machinery and equipment	3,191
Food products	2,907
Households (excluding mortgages)	36,524
Households – mortgages	150,205
Public sector	13,711
Wholesale and retail trade	19,252
Commercial real estate activities	29,247
Lease financing	384
Fund management activities	18,708
Other	58,167
of which:	
Renting of machinery and other business activities	26,559
Transport, storage and communication	9,243
Mining and quarrying of energy-producing materials	2,553
Electricity, gas and water supply	3,552
Gross loans	405,879
(Deferred expense)/unearned income	259
Loans less (deferred expense)/unearned income	405,621
Less: Allowance for loan losses	3,921
Total loans	401,699

21 – Allowance for Credit Losses

The allowance for credit losses consists of an allowance for loan losses and an allowance for off-balance sheet positions.

Development of allowance for credit losses for financial assets at amortized cost

	Dec 31, 2018				
	Allowance for Credit Losses[3]				
in € m.	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total
Balance, beginning of year	462	494	3,638	3	4,596
Movements in financial assets including new business	(132)	215	440	(17)	507
Transfers due to changes in creditworthiness	199	(137)	(62)	N/M	0
Changes due to modifications that did not result in derecognition	N/M	N/M	N/M	N/M	N/M
Changes in models	0	0	0	0	0
Financial assets that have been derecognized during the period[2]	(6)	(17)	(972)	0	(995)
Recovery of written off amounts	0	0	172	0	172
Foreign exchange and other changes	(14)	(54)	30	17	(21)
Balance, end of reporting period	509	501	3,247	3	4,259
Provision for Credit Losses excluding country risk[1]	66	78	379	(17)	507

[1] Movements in financial assets including new business, transfers due to changes in creditworthiness and changes in models add up to Provision for Credit Losses excluding country risk.
[2] This position includes charge offs of allowance for credit losses.
[3] Allowance for credit losses does not include allowance for country risk amounting to € 6 million as of December 31, 2018.

Allowance for credit losses for financial assets at fair value through OCI[1]

	Dec 31, 2018				
	Allowance for Credit Losses				
in € m.	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total
Fair Value through OCI	11	1	0	(0)	13

[1] Allowance for credit losses against financial assets at fair value through OCI were almost unchanged at very low levels (€ 12 million at the beginning of year 2018 and € 13 million as of December 31, 2018, respectively). Due to immateriality, we do not provide any details on the year-over-year development.

Development of allowance for credit losses for Off-balance sheet positions

	Dec 31, 2018				
	Allowance for Credit Losses[2]				
in € m.	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total
Balance, beginning of year	117	36	119	0	272
Movements including new business	(0)	31	(13)	0	18
Transfers due to changes in creditworthiness	2	(0)	(2)	N/M	0
Changes in models	N/M	N/M	N/M	N/M	N/M
Foreign exchange and other changes	14	6	(20)	0	(0)
Balance, end of reporting period	132	73	84	0	289
Provision for Credit Losses excluding country risk[1]	1	31	(15)	0	18

[1] The above table breaks down the impact on provision for credit losses from movements in financial assets including new business, transfers due to changes in creditworthiness and changes in models.
[2] Allowance for credit losses does not include allowance for country risk amounting to € 5 million as of December 31, 2018.

Breakdown of the movements in the Group's allowance for loan losses (as previously reported under IAS 39)

	2017			2016		
in € m.	Individually assessed	Collectively assessed	Total	Individually assessed	Collectively assessed	Total
Allowance, beginning of year	2,071	2,475	4,546	2,252	2,776	5,028
Provision for loan losses	299	253	552	743	604	1,347
Net charge-offs:	(487)	(532)	(1,019)	(894)	(870)	(1,764)
Charge-offs	(541)	(605)	(1,146)	(979)	(972)	(1,951)
Recoveries	54	73	127	85	101	187
Other Changes	(117)	(41)	(158)	(30)	(35)	(65)
Allowance, end of year	1,766	2,155	3,921	2,071	2,475	4,546

Activity in the Group's allowance for off-balance sheet positions (contingent liabilities and lending commitments), (as previously reported under IAS 39)

	2017			2016		
in € m.	Individually assessed	Collectively assessed	Total	Individually assessed	Collectively assessed	Total
Allowance, beginning of year	162	183	346	144	168	312
Provision for off-balance sheet positions	(23)	(4)	(27)	24	12	36
Usage	0	0	0	0	0	0
Other changes	(18)	(16)	(34)	(5)	3	(2)
Allowance, end of year	122	163	285	162	183	346

22 – Transfer of Financial Assets, Assets Pledged and Received as Collateral

The Group enters into transactions in which it transfers financial assets held on the balance sheet and as a result may either be eligible to derecognize the transferred asset in its entirety or must continue to recognize the transferred asset to the extent of any continuing involvement, depending on certain criteria. These criteria are discussed in Note 1 "Significant Accounting Policies and Critical Accounting Estimates".

Where financial assets are not eligible to be derecognized, the transfers are viewed as secured financing transactions, with any consideration received resulting in a corresponding liability. The Group is not entitled to use these financial assets for any other purposes. The most common transactions of this nature entered into by the Group are repurchase agreements, securities lending agreements and total return swaps, in which the Group retains substantially all of the associated credit, equity price, interest rate and foreign exchange risks and rewards associated with the assets as well as the associated income streams.

Information on asset types and associated transactions that did not qualify for derecognition

in € m.	Dec 31, 2018	Dec 31, 2017[1]
Carrying amount of transferred assets		
Trading securities not derecognized due to the following transactions:		
Repurchase agreements	33,980	43,025
Securities lending agreements	41,621	58,076
Total return swaps	1,835	2,390
Other	6,589	12,661
Total trading securities	**84,025**	116,153
Other trading assets	69	71
Non-trading financial assets mandatory at fair value through profit or loss	1,289	N/A
Financial assets available for sale	N/A	711
Financial assets at fair value through other comprehensive income	4,286	N/A
Loans at amortized cost[2]	408	131
Total	**90,076**	117,066
Carrying amount of associated liabilities	**46,218**	51,937

[1] Prior year numbers have been restated following reassessments of certain repurchase transactions.
[2] Loans where the associated liability is recourse only to the transferred assets had a carrying value and fair value of € 0 million at December 31, 2018 and € 108 million at December 31, 2017. The associated liabilities had the same carrying value and fair value which resulted in a net position of 0.

Carrying value of assets transferred in which the Group still accounts for the asset to the extent of its continuing involvement

in € m.	Dec 31, 2018	Dec 31, 2017
Carrying amount of the original assets transferred		
Trading securities	759	0
Financial assets designated at fair value through profit or loss	306	291
Non-trading financial assets mandatory at fair value through profit or loss	386	N/A
Financial assets available for sale	N/A	386
Carrying amount of the assets continued to be recognized		
Trading securities	35	0
Financial assets designated at fair value through profit or loss	15	15
Non-trading financial assets mandatory at fair value through profit or loss	43	N/A
Financial assets available for sale	N/A	96
Carrying amount of associated liabilities	**117**	54

The Group could retain some exposure to the future performance of a transferred asset either through new or existing contractual rights and obligations and still be eligible to derecognize the asset. This ongoing involvement will be recognized as a new instrument which may be different from the original financial asset that was transferred. Typical transactions include retaining senior notes of non-consolidated securitizations to which originated loans have been transferred; financing arrangements with structured entities to which the Group has sold a portfolio of assets; or sales of assets with credit-contingent swaps. The Group's exposure to such transactions is not considered to be significant as any substantial retention of risks associated with the transferred asset will commonly result in an initial failure to derecognize. Transactions not considered to result in an ongoing involvement include normal warranties on fraudulent activities that could invalidate a transfer in the event of legal action, qualifying pass-through arrangements and standard trustee or administrative fees that are not linked to performance.

The impact on the Group's Balance Sheet of on-going involvement associated with transferred assets derecognized in full

	Dec 31,2018			Dec 31,2017		
in € m.	Carrying value	Fair value	Maximum Exposure to Loss[1]	Carrying value	Fair value	Maximum Exposure to Loss[1]
Loans at amortized cost						
Securitization notes	372	372	372	270	270	270
Other	14	14	14	13	13	13
Total Loans at amortized cost	**385**	**385**	**385**	284	284	284
Financial assets held at Fair Value through the P&L						
Securitization notes	22	22	22	0	0	0
Non-standard Interest Rate, cross-currency or inflation-linked swap	5	5	5	36	36	36
Total Financial assets held at Fair Value through the P&L	**27**	**27**	**27**	36	36	36
Financial assets at fair value through other comprehensive income:						
Securitization notes	112	112	112	0	0	0
Other	0	0	0	0	0	0
Total Financial assets at fair value through other comprehensive income	**112**	**112**	**112**	0	0	0
Total financial assets representing on-going involvement	**524**	**524**	**524**	320	320	320
Financial liabilities held at Fair Value through P&L						
Non-standard Interest Rate, cross-currency or inflation-linked swap	61	61	0	67	67	0
Total financial liabilities representing on-going involvement	**61**	**61**	**0**	67	67	0

[1] The maximum exposure to loss is defined as the carrying value plus the notional value of any undrawn loan commitments not recognized as liabilities.

The impact on the Group's Statement of Income of on-going involvement associated with transferred assets derecognized in full

	Dec 31,2018			Dec 31,2017		
in € m.	Year-to-date P&L	Cumulative P&L	Gain/(loss) on disposal	Year-to-date P&L	Cumulative P&L	Gain/(loss) on disposal
Securitization notes	9	13	11	3	3	79[1]
Non-standard Interest Rate, cross-currency or inflation-linked swap	21	268	0	46	510	0
Net gains/(losses) recognized from on-going involvement in derecognized assets	**30**	**281**	**11**	49	513	79

[1] Typically, sales of assets into securitization vehicles were of assets that were classified as Fair Value through P&L, therefore any gain or loss on disposal is immaterial.

The Group pledges assets primarily as collateral against secured funding and for repurchase agreements, securities borrowing agreements as well as other borrowing arrangements and for margining purposes on OTC derivative liabilities. Pledges are generally conducted under terms that are usual and customary for standard securitized borrowing contracts and other transactions described.

Carrying value of the Group's assets pledged as collateral for liabilities or contingent liabilities[1]

in € m.	Dec 31, 2018	Dec 31, 2017[2]
Financial assets at fair value through profit or loss	41,816	54,134
Financial assets at fair value through other comprehensive income	4,274	N/A
Financial assets available for sale	N/A	6,469
Loans	75,641	71,404
Other	1,364	417
Total	**123,095**	132,423

[1] Excludes assets pledged as collateral from transactions that do not result in liabilities or contingent liabilities.
[2] Prior period results have been restated.

Total assets pledged to creditors available for sale or repledge[1]

in € m.	Dec 31, 2018	Dec 31, 2017[2]
Financial assets at fair value through profit or loss	45,640	71,278
Financial assets at fair value through other comprehensive income	3,201	N/A
Financial assets available for sale	N/A	0
Loans	11	0
Total	**48,851**	71,278

[1] Includes assets pledged as collateral from transactions that do not result in liabilities or contingent liabilities.
[2] Prior period results have been restated.

The Group receives collateral primarily in reverse repurchase agreements, securities lending agreements, derivatives transactions, customer margin loans and other transactions. These transactions are generally conducted under terms that are usual and customary for standard secured lending activities and the other transactions described. The Group, as the secured party, has the right to sell or re-pledge such collateral, subject to the Group returning equivalent securities upon completion of the transaction. This right is used primarily to cover short sales, securities loaned and securities sold under repurchase agreements.

Fair Value of collateral received

in € m.	Dec 31, 2018	Dec 31, 2017[1]
Securities and other financial assets accepted as collateral	292,474	366,312
thereof:		
Collateral sold or repledged	240,365	308,970

[1] Prior period results have been restated.

23 – Property and Equipment

in € m.	Owner occupied properties	Furniture and equipment	Leasehold improvements	Construction-in-progress	Total
Cost of acquisition:					
Balance as of January 1, 2017	1,516	2,406	2,820	240	**6,982**
Changes in the group of consolidated companies	0	(8)	(1)	0	(9)
Additions	12	165	117	191	485
Transfers	18	75	191	(288)	(4)
Reclassifications (to)/from “held for sale”	(61)	0	0	0	(61)
Disposals	96	97	291	0	484
Exchange rate changes	(3)	(67)	(92)	(4)	(166)
Balance as of December 31, 2017	1,387	2,473	2,743	139	**6,743**
Changes in the group of consolidated companies	0	141	(2)	0	139
Additions	11	150	155	150	465
Transfers	(8)	(4)	106	(147)	(53)
Reclassifications (to)/from “held for sale”	(478)	(30)	(27)	(2)	(538)
Disposals	134	291	144	0	569
Exchange rate changes	1	164	29	1	195
Balance as of December 31, 2018	778	2,602	2,860	142	**6,382**
Accumulated depreciation and impairment:					
Balance as of January 1, 2017	572	1,720	1,886	0	**4,178**
Changes in the group of consolidated companies	0	(8)	(1)	0	(9)
Depreciation	37	211	193	0	441
Impairment losses	15	3	2	0	19
Reversals of impairment losses	0	(1)	0	0	(1)
Transfers	1	17	(22)	0	(4)
Reclassifications (to)/from “held for sale”	(0)	0	0	0	(0)
Disposals	44	90	284	0	418
Exchange rate changes	(1)	(54)	(72)	0	(128)
Balance as of December 31, 2017	579	1,800	1,702	0	**4,080**
Changes in the group of consolidated companies	(0)	28	(1)	0	27
Depreciation	28	206	197	0	430
Impairment losses	3	3	3	0	9
Reversals of impairment losses	37	0	0	0	37
Transfers	(13)	48	(5)	0	30
Reclassifications (to)/from “held for sale”	(215)	(40)	(22)	0	(277)
Disposals	17	281	128	0	426
Exchange rate changes	1	99	24	0	125
Balance as of December 31, 2018	328	1,862	1,770	0	**3,960**
Carrying amount:					
Balance as of December 31, 2017	809	673	1,041	139	**2,663**
Balance as of December 31, 2018	450	740	1,090	142	**2,421**

Impairment losses on property and equipment are recorded within general and administrative expenses for the income statement.

The carrying value of items of property and equipment on which there is a restriction on sale was € 42 million and € 40 million as of December 31, 2018 and December 31, 2017, respectively.

Commitments for the acquisition of property and equipment were € 273 million at year-end 2018 and € 41 million at year-end 2017.

24 – Leases

The Group is lessee under lease arrangements covering property and equipment.

Finance Lease Commitments

Most of the Group's finance lease arrangements are made under usual terms and conditions.

Net Carrying Value of Leasing Assets Held under finance leases

in € m.	Dec 31, 2018	Dec 31, 2017
Land and buildings	28	14
Furniture and equipment	0	4
Other	0	0
Net carrying value	**28**	18

Future Minimum Lease Payments Required under the Group's Finance Leases

in € m.	Dec 31, 2018	Dec 31, 2017
Future minimum lease payments:		
Not later than one year	19	8
Later than one year and not later than five years	34	20
Later than five years	65	70
Total future minimum lease payments	**118**	98
Less: Future interest charges	91	70
Present value of finance lease commitments	**27**	28
Future minimum lease payments to be received	**5**	0
Contingent rent recognized in the income statement[1]	**0**	0

[1] The contingent rent is based on market interest rates, such as three months EURIBOR; below a certain rate the Group receives a rebate.

Operating Lease Commitments

The Group leases the majority of its offices and branches under long-term agreements. Most of the lease contracts are made under usual terms and conditions, which means they include options to extend the lease by a defined amount of time, price adjustment clauses and escalation clauses in line with general office rental market conditions. However, the lease agreements do not include any clauses that impose any restriction on the Group's ability to pay dividends, engage in debt financing transactions or enter into further lease agreements.

Future Minimum Lease Payments Required under the Group's Operating Leases

in € m.	Dec 31, 2018	Dec 31, 2017
Future minimum rental payments:		
Not later than one year	707	684
Later than one year and not later than five years	2,077	1,979
Later than five years	3,480	1,901
Total future minimum rental payments	**6,264**	4,564
Less: Future minimum rentals to be received	**20**	58
Net future minimum rental payments	**6,244**	4,506

As of December 31, 2018, the total future minimum rental payments included € 441 million for the Group headquarters in Frankfurt am Main that was sold and leased back on December 1, 2011. The Group entered into a 181 months leaseback arrangement for the entire facility in connection with the transaction, which also includes the option to extend the lease for an additional 5 year period up to 2031.

In 2018, the rental payments for lease and sublease agreements amounted to € 747 million. This included charges of € 769 million for minimum lease payments and € 20 million related to sublease rentals received.

25 – Goodwill and Other Intangible Assets

Goodwill

Changes in Goodwill

The changes in the carrying amount of goodwill, as well as gross amounts and accumulated impairment losses of goodwill, for the years ended December 31, 2018, and December 31, 2017, are shown below by cash-generating units ("CGU"). As of January 1, 2016, the structure of the primary CGUs had been changed as a result of the reorganization of business operations under an amended segment structure. In the second quarter of 2017 and in accordance with the strategy announcement made on March 5, 2017, the Group's business operations were reorganized under a new divisional structure, which also reconfigured the existing Global Markets, Corporate Finance and Global Transaction Banking businesses into a single division, Corporate & Investment Bank (CIB). A review of CIB confirmed the previous assessment of two separate CGUs. Consequently, the former primary CGUs "Global Markets" and "Corporate & Investment Banking" have been grouped as "Sales & Trading" (S&T) and "Global Transaction Banking & Corporate Finance" (GTB & CF). Please also refer to Note 4, "Business Segments and Related Information" for more information regarding changes in the presentation of segment disclosures.

Goodwill allocated to cash-generating units

in € m.	Sales & Trading	Global Transaction Banking & Corporate Finance	Private and Commercial Clients	Postbank	Wealth Manage-ment	Asset Manage-ment	Others	Total
Balance as of January 1, 2017	0	532	0	0	564	3,006	1	**4,103**
Goodwill acquired during the year	0	0	0	0	0	0	0	0
Purchase accounting adjustments	0	0	0	0	0	0	0	0
Transfers	6	(6)	0	0	0	0	0	0
Reclassification from (to) "held for sale"	0	(3)	0	0	0	0	0	(3)
Goodwill related to dispositions without being classified as "held for sale"	0	0	0	0	0	(6)	0	(6)
Impairment losses[1]	(6)	0	0	0	0	0	0	(6)
Exchange rate changes/other	0	(52)	0	0	(22)	(231)	0	(306)
Balance as of December 31, 2017	0	471	0	0	541	2,768	1	**3,782**
Gross amount of goodwill	2,780	1,485	1,077	2,086	541	3,232	1	**11,203**
Accumulated impairment losses	(2,780)	(1,014)	(1,077)	(2,086)	0	(464)	0	**(7,422)**
Balance as of January 1, 2018	0	471	0	0	541	2,768	1	**3,782**
Goodwill acquired during the year	0	0	0	0	0	0	0	0
Purchase accounting adjustments	0	0	0	0	0	0	0	0
Transfers	0	0	0	0	0	0	0	0
Reclassification from (to) "held for sale"	0	0	0	0	(4)	0	0	(4)
Goodwill related to dispositions without being classified as "held for sale"	0	0	0	0	0	0	0	0
Impairment losses[1]	0	0	0	0	0	0	0	0
Exchange rate changes/other	0	18	0	0	5	74	0	98
Balance as of December 31, 2018	0	489	0	0	543	2,843	1	**3,876**
Gross amount of goodwill	2,889	1,539	1,076	2,086	543	3,314	1	**11,449**
Accumulated impairment losses	(2,889)	(1,051)	(1,076)	(2,086)	0	(471)	0	**(7,573)**

[1] Impairment losses of goodwill are recorded as impairment of goodwill and other intangible assets in the income statement.

In addition to the primary CGUs, the segment CIB includes goodwill resulting from the acquisition of a nonintegrated investment which is not allocated to the respective segment' primary CGU. Such goodwill is summarized as "Others" in the table above.

Changes in goodwill for both 2017 and 2018 mainly reflected exchange rate fluctuations, predominantly related to the translation of goodwill held in USD.

In 2016, changes in goodwill mainly included impairments of € 785 million in Sales & Trading (S&T) (€ 285 million) and Asset Management (€ 500 million). The impairment in S&T was the result of a transfer of certain businesses from Asset Management to S&T in the second quarter 2016. The transfer resulted in the reassignment of € 285 million of goodwill from Asset Management based on relative values in accordance with IFRS. The subsequent impairment review of S&T led to an impairment loss of € 285 million of the reassigned goodwill. The goodwill impairment in Asset Management was recorded in the fourth quarter 2016 in relation to the sale of the Abbey Life business and the formation of a disposal group held for sale. Immediately before its initial classification as a disposal group, the carrying amounts of all assets and liabilities included in the Abbey Life disposal group were measured and recognized in accordance with applicable IFRS. With the sale of Abbey Life to close for an amount lower than its carrying amount, the proportion of Asset Management CGU goodwill attributable to the Abbey Life business was not expected to be recovered upon sale of the disposal group. Accordingly, the allocated goodwill amount of € 500 million as well as other intangible assets (value of business acquired, VOBA) of € 515 million included in the disposal group were considered impaired and written-off through Impairment of goodwill and other intangible assets.

Goodwill Impairment Test

For the purposes of impairment testing, goodwill acquired in a business combination is allocated to CGUs. On the basis as described in Note 1 "Significant Accounting Policies and Critical Accounting Estimates", the Group's primary CGUs are as outlined above. "Other" goodwill is tested individually for impairment on the level of each of the nonintegrated investments. Goodwill is tested for impairment annually in the fourth quarter by comparing the recoverable amount of each goodwill-carrying CGU with its carrying amount. In addition, in accordance with IAS 36, the Group tests goodwill whenever a triggering event is identified. The recoverable amount is the higher of a CGU's fair value less costs of disposal and its value in use.

The annual goodwill impairment tests conducted in 2018 and 2017 did not result in an impairment loss on the Group's primary goodwill-carrying CGUs as the recoverable amounts of these CGUs were higher than the respective carrying amounts.

A review of the Group's strategy or certain political or global risks for the banking industry such as a return of the European sovereign debt crisis, uncertainties regarding the implementation of already adopted regulation and the introduction of legislation that is already under discussion as well as a slowdown of GDP growth may negatively impact the performance forecasts of certain of the Group's CGUs and, thus, could result in an impairment of goodwill in the future.

Carrying Amount

The carrying amount of a primary CGU is derived using a capital allocation model based on the Shareholders' Equity Allocation Framework of the Group (please refer to Note 4, "Business Segments and Related Information" for more details). The allocation uses the Group's total equity at the date of valuation, including Additional Tier 1 Notes ("AT1 Notes"), which constitute unsecured and subordinated notes of Deutsche Bank and which are classified as Additional equity components in accordance with IFRS. Total equity is adjusted for specific effects related to nonintegrated investments, which are tested separately for impairment as outlined above, and for an add-on adjustment for goodwill attributable to noncontrolling interests.

Recoverable Amount

The Group determines the recoverable amounts of its primary CGUs on the basis of the higher of value in use and fair value less costs of disposal (Level 3 of the fair value hierarchy). It employs a discounted cash flow (DCF) model, which reflects the specifics of the banking business and its regulatory environment. The model calculates the present value of the estimated future earnings that are distributable to shareholders after fulfilling the respective regulatory capital requirements. The recoverable amounts also include the fair value of the AT1 Notes, allocated to the primary CGUs consistent to their treatment in the carrying amount.

The DCF model uses earnings projections and respective capitalization assumptions based on five-year financial plans as well as longer term expectations on the impact of regulatory developments, which are discounted to their present value. Estimating future earnings and capital requirements involves judgment and the consideration of past and current performances as well as expected developments in the respective markets, and in the overall macroeconomic and regulatory environments. Earnings projections beyond the initial five-year period are, where applicable, adjusted to derive a sustainable level and the cash flow to equity is assumed to increase by or converge towards a constant long-term growth rate of up to 3.1 % (2017: 3.2 %). This is based on projected revenue forecasts of the CGUs as well as expectations for the development of gross domestic product and inflation, and is captured in the terminal value.

Key Assumptions and Sensitivities

Key Assumptions: The DCF value of a CGU is sensitive to the earnings projections, to the discount rate (cost of equity) applied and, to a much lesser extent, to the long-term growth rate. The discount rates applied have been determined based on the capital asset pricing model and comprise a risk-free interest rate, a market risk premium and a factor covering the systematic market risk (beta factor). The values for the risk-free interest rate, the market risk premium and the beta factors are determined using external sources of information. CGU-specific beta factors are determined based on a respective group of peer companies. Variations in all of these components might impact the discount rates.

Primary goodwill-carrying cash-generating units

	Discount rate (post-tax)	
	2018	2017
Global Transaction Banking & Corporate Finance	8.8 %	8.8 %
Wealth Management	9.0 %	9.1 %
Asset Management	9.7 %	10.0 %

Management determined the values for the key assumptions in the following table based on a combination of internal and external analysis. Estimates for efficiency and the cost reduction program are based on progress made to date and scheduled future projects and initiatives.

Primary goodwill-carrying cash-generating unit	Description of key assumptions	Uncertainty associated with key assumptions and potential events/circumstances that could have a negative effect
Wealth Management	• Strategy continuously monitored to reflect key market trends and developments including global wealth creation and concentration, digitalization, aging population, transfer to next generation, product trends (e.g., ESG) as well as competitor activity and benchmarking • Growth plans supported by continuous strengthening of our risk and control functions • Multi-year organic investment program to expand our front-office staff focused in key growth markets where we have a distinctive and attractive client offering • Continued focus on expanding business with high net worth and ultra-high net worth clients via a more segmented approach • Building out of global investment advisory solutions as well as increasing revenues from collaboration between divisions (esp. CIB) • Continued deployment of balance sheet for WM lending proposition • Targeted investments in enhancing client experience through new digital offering, efficient on-boarding, broad product offering as well as approaching clients with a more nuanced client service model • Benefit from cost savings coming through re-organization of our product and coverage teams into three regions (Americas, Europe, Emerging Markets)	• Major industry threats, i.e., market and exchange rate volatility, significant technological developments, geopolitical uncertainty • Investors holding assets out of the markets, a retreat to cash or simpler, lower fee products, and reduced trading activity • Business/execution risks, i.e., under achievement of net new money targets from market uncertainty, franchise instability, adverse developments, loss of high quality relationship managers • Cost savings following efficiency gains and expected IT/ process improvements not realized to the extent planned
Asset Management	• Deliver strong investment product performance • Expand product suite in growth areas (e.g. alternatives, multi assets, passive, ESG investment schemes) while consolidating non-core strategies • Consistent net flows leveraging market share leadership in Germany and the rest of Europe, while expanding coverage in Asia Pacific and focused growth in the Americas • Diversification of intermediary coverage towards high growth channels and deployment of digital solutions to serve new channels • Further efficiency through improved core operating processes, platform optimization and product rationalization • Anticipation of further headwinds in the asset management industry as a result of the changing regulatory environment	• Challenging market environment and volatility unfavorable to our investment strategies • Unfavorable margin development and adverse competition levels in key markets and products beyond expected levels • Business/execution risks, e.g., under achievement of net flow targets from market uncertainty, loss of high quality client facing employees, unfavorable investment performance, lower than expected efficiency gains • Uncertainty around regulation and its potential implications not yet anticipated

Primary goodwill-carrying cash-generating unit	Description of key assumptions	Uncertainty associated with key assumptions and potential events/circumstances that could have a negative effect
Global Transaction Banking & Corporate Finance	GTB • Expectation to benefit from positive interest rate development in EU and the U.S. starting 2019 (largely U.S.), with increasing impacts in outer plan years • Invest in technology transformation of core architecture (scale & client experience; security & controls) and build liquidity / collateral / risk management platforms • Build-out product enhancements and offering; improve client wallet penetration internationally • Liquidity and deposit initiatives, specifically in Cash management • Continued Trade flow momentum and growth in structured trade book • Improve client coverage across products (aligned to overall strategy of the newly created Institutional & Treasury coverage) CF • Plan assumes slightly lower global revenue pool in 2019 compared to 2018, then modest increases in outer years • DB expected to gain back market share across products post implementation of strategic updates in 2018 • Build on momentum in market share growth in 2018 in leveraged finance • IG refinancing opportunity (maturity walls in 2019) with outstanding IG debt levels still high • Opportunities to regain / win market share in: • Cross border business, where DB has been historically strong, but lost momentum in 2018 • Financial sponsors (Global capital markets), where DB gained share in 2018	Generic • Macro environment remains challenging, particularly in Europe • Risk from the exit process of the U.K. from the European Union • Potential adverse macroeconomic and geopolitical developments impacting trade volumes, interest rates and foreign exchange movements GTB • Further potential margin compression • DB funding costs remaining higher • Potential DB driven resource constraints limiting growth • Compression of CTB budgets CF • Lower than expected Corporate Finance fee pool development • Deterioration of global credit

Sensitivities: In order to test the resilience of the recoverable amount, key assumptions used in the DCF model (for example, the discount rate and the earnings projections) are sensitized. Management believes that no reasonable possible changes in key assumptions could cause an impairment loss.

Other Intangible Assets

Changes of other intangible assets by asset classes for the years ended December 31, 2018, and December 31, 2017

				Purchased intangible assets				Internally generated intangible assets	Total other intangible assets
	Unamortized			Amortized				Amortized	
in € m.	Retail investment management agreements	Other	Total unamortized purchased intangible assets	Customer-related intangible assets	Contract-based intangible assets	Software and other	Total amortized purchased intangible assets	Software	
Cost of acquisition/ manufacture:									
Balance as of January 1, 2017	1,094	440	1,534	1,431	70	871	2,372	6,235	10,140
Additions	0	0	0	15	0	48	63	1,360	1,423
Changes in the group of consolidated companies	0	0	0	0	0	(35)	(35)	(171)	(206)
Disposals	0	0	0	0	0	21	21	121	142
Reclassifications from (to) “held for sale”	0	0	0	(6)	0	0	(6)	0	(6)
Transfers	0	(0)	(0)	1	0	50	51	(42)	9
Exchange rate changes	(131)	(1)	(132)	(77)	(0)	(12)	(89)	(237)	(457)
Balance as of December 31, 2017	963	440	1,402	1,364	70	901	2,335	7,024	10,761
Additions	0	0	0	12	0	44	56	1,242	1,298
Changes in the group of consolidated companies	0	0	0	0	0	(0)	(0)	0	(0)
Disposals	0	0	0	0	0	126	126	725	851
Reclassifications from (to) “held for sale”	0	0	0	0	0	(7)	(7)	(20)	(27)
Transfers	0	2	2	(3)	0	(213)	(215)	190	(24)
Exchange rate changes	48	0	48	10	0	5	15	102	165
Balance as of December 31, 2018	1,010	441	1,451	1,384	70	603	2,058	7,814	11,322
Accumulated amortization and impairment:									
Balance as of January 1, 2017	276	424	700	1,363	65	715	2,143	2,418	5,261
Amortization for the year	0	0	0	34	4	27	65	870	935[1]
Changes in the group of consolidated companies	0	0	0	0	0	(35)	(35)	(171)	(206)
Disposals	0	0	0	0	0	19	19	81	99
Reclassifications from (to) “held for sale”	0	0	0	(4)	0	0	(4)	0	(4)
Impairment losses	0	15	15	0	0	0	0	42	57[2]
Reversals of impairment losses	0	0	0	0	0	0	0	0	0
Transfers	0	0	0	0	0	41	41	(35)	6
Exchange rate changes	(33)	(0)	(33)	(72)	(0)	(12)	(84)	(129)	(246)
Balance as of December 31, 2017	243	439	682	1,321	69	718	2,108	2,914	5,704
Amortization for the year	0	0	0	21	1	40	61	1,034	1,095[3]
Changes in the group of consolidated companies	0	0	0	0	0	(0)	(0)	0	(0)
Disposals	0	0	0	0	0	125	125	724	850
Reclassifications from (to) “held for sale”	0	0	0	0	0	(7)	(7)	(20)	(27)
Impairment losses	0	0	0	0	0	0	0	42	42[4]
Reversals of impairment losses	0	0	0	0	0	0	0	0	0
Transfers	0	0	0	6	0	(136)	(129)	139	10
Exchange rate changes	12	0	12	10	0	5	14	57	83
Balance as of December 31, 2018	255	439	694	1,358	70	494	1,922	3,442	6,057
Carrying amount:									
As of December 31, 2017	719	1	720	43	1	183	227	4,110	5,057
As of December 31, 2018	755	2	757	26	0	109	136	4,372	5,265

[1] The € 935 million were included in general and administrative expenses.
[2] Of which € 42 million were related to the impairment of self-developed software, recorded in general and administrative expenses, and € 15 million referring to the impairment of a non-amortizing trade-mark intangible asset which is included under impairment of goodwill and other intangible asset.
[3] The € 1.1 billion were included in general and administrative expenses.
[4] The € 42 million were related to the impairment of self-developed software, recorded in general and administrative expenses.

Amortizing Intangible Assets

In 2018, amortizing other intangible assets increased by a net € 171 million. This was in particular driven by additions to internally generated intangible assets of € 1.2 billion resulting from the capitalization of expenses incurred in conjunction with the Group's development of own-used software. Offsetting were amortization expenses of € 1.1 billion, mostly for the scheduled consumption of capitalized software (€ 1.1 billion). The reassessment of current platform software as well as software under construction led to the impairment of self-developed software (€ 42 million). Furthermore, the weakening of the Euro against major currencies accounted for positive exchange rate changes of € 82 million increasing the net book value of amortizing intangible assets.

In 2017, amortizing other intangible assets increased by a net € 291 million. This was mainly driven by additions to internally generated intangible assets of € 1.4 billion, offset by amortization expenses of € 935 million, in particular for the scheduled consumption of capitalized software (€ 897 million). The reassessment of current platform software as well as software under construction led to the impairment of self-developed software (€ 42 million). Furthermore, the strengthening of the Euro accounted for negative exchange rate changes of € 113 million reducing the net book value of amortizing intangible assets.

In 2016, amortizing other intangible assets decreased by a net € 327 million. Main components of this development included increases due to additions to internally generated intangible assets of € 1.5 billion, which represent the capitalization of expenses incurred in conjunction with the Group's development of own-used software. These were offset by amortization expenses of € 815 million, mostly related to the scheduled asset consumption of self-developed software (€ 679 million), and impairment charges of € 580 million, mainly reflecting the write-off of the value of business acquired (VOBA; € 515 million) as a consequence of the Abbey Life disposal (Asset Management). Furthermore, the reassessment of current platform software as well as software under construction, led to the writedown of self-developed software (€ 60 million). In advance of the sale of the NCOU legacy investment in Maher Terminals' Port Elizabeth operation in the fourth quarter 2016, its reclassification to the held-for-sale category in the third quarter 2016 had led to a net reduction of € 497 million in contract-based and trade name other intangible assets.

Other intangible assets with finite useful lives are generally amortized over their useful lives based on the straight-line method.

Useful lives of other amortized intangible assets by asset class

	Useful lives in years
Internally generated intangible assets:	
Software	up to 10
Purchased intangible assets:	
Customer-related intangible assets	up to 20
Contract-based intangible assets	up to 8
Other	up to 80

Unamortized Intangible Assets

Within this asset class, the Group recognizes certain contract-based and marketing-related intangible assets, which are deemed to have an indefinite useful life.

In particular, the asset class comprises the below detailed investment management agreements related to retail mutual funds and certain trademarks. Due to the specific nature of these intangible assets, market prices are ordinarily not observable and, therefore, the Group values such assets based on the income approach, using a post-tax DCF-methodology.

Retail investment management agreements: These assets, amounting to € 755 million, relate to the Group's U.S. retail mutual fund business and are allocated to the Asset Management CGU. Retail investment management agreements are contracts that give DWS Group investments the exclusive right to manage a variety of mutual funds for a specified period. Since these contracts are easily renewable, the cost of renewal is minimal, and they have a long history of renewal, these agreements are not expected to have a foreseeable limit on the contract period. Therefore, the rights to manage the associated assets under management are expected to generate cash flows for an indefinite period of time. This intangible asset was recorded at fair value based upon a valuation provided by a third party at the date of acquisition of Zurich Scudder Investments, Inc. in 2002.

The recoverable amount of the asset of € 755 million (2017: € 719 million) was calculated as fair value less costs of disposal using the multi-period excess earnings method and the fair value measurement was categorized as Level 3 in the fair value hierarchy. The key assumptions in determining the fair value less costs of disposal include the asset mix, the flows forecast, the effective fee rate and discount rate as well as the terminal value growth rate. The discount rates (cost of equity) applied in the calculation were 10.0 % in 2018 and 11.0 % in 2017. The terminal value growth rate applied for 2018 is up to 4.0 % compared to 4.0 % in 2017. The reviews of the valuation for the years 2018 and 2017 neither resulted in any impairment nor a reversal of prior impairments.

Trademarks: The other unamortized intangible assets had included the Postbank (allocated to CGU Postbank) and the Sal. Oppenheim (allocated to CGU WM) trademarks, which were both acquired in 2010. The Postbank trademark was initially recognized in 2010 at € 382 million. In finalizing the purchase price allocation in 2011, the fair value of the Postbank trademark increased to € 410 million. The Sal. Oppenheim trademark was recognized at € 27 million. Since both trademarks were expected to generate cash flows for an indefinite period of time, they were classified as unamortized intangible assets. Both trademarks were recorded at fair value at the acquisition date, based on third party valuations. The recoverable amounts were calculated as the fair value less costs of disposal of the trademarks based on the income approach using the relief-from-royalty method. Reflecting the change in strategic intent and the expected deconsolidation of Postbank, the Postbank trademark (€ 410 million) was fully written off in the third quarter 2015. Following a review of the valuation model for the Sal. Oppenheim trademark, a write-down of € 6 million was recorded in the fourth quarter 2015. The discontinuation of its use outside the German market led to a further write-down of € 6 million recorded in the fourth quarter 2016. As the Group had announced on October 26, 2017 its intention to integrate the Sal. Oppenheim franchise into Deutsche Bank during 2018 and to no longer maintain the Sal. Oppenheim brand, the book value of the trademark (€ 15 million) was considered impaired and fully written off in the fourth quarter 2017.

26 – Non-Current Assets and Disposal Groups Held for Sale

Within the balance sheet, non-current assets and disposal groups held for sale are included in other assets and other liabilities.

in € m.	Dec 31, 2018	Dec 31, 2017
Cash, due and deposits with banks, Central bank funds sold and securities purchased under resale agreements	8	0
Financial assets at fair value through profit or loss	3	0
Financial assets available for sale	0	4
Loans	2,564	0
Property and equipment	62	15
Other assets	42	26
Total assets classified as held for sale	**2,679**	**45**
Deposits, Central bank funds purchased and securities sold under resale agreements	874	0
Financial liabilities at fair value through profit or loss	4	0
Long-term debt	0	0
Other liabilities	364	16
Total liabilities classified as held for sale	**1,242**	**16**

As of December 31, 2018 and December 31, 2017, no unrealized gains (losses) relating to non-current assets classified as held for sale were recognized directly in accumulated other comprehensive income (loss) (net of tax).

Sale of Portuguese Private & Commercial Bank business

On March 27, 2018, the Group announced that it has entered into an agreement to sell its local Private & Commercial Bank (PCB) business in Portugal to ABANCA Corporación Bancaria S.A. (“ABANCA”). Accordingly and at the end of the first quarter 2018, the business was classified as a disposal group held for sale. The valuation of the unit resulted in the recognition of a pretax loss of € (53) million which was recorded in other income (€ (40) million) and general and administrative expense (€ (13) million) of PCB in the first quarter 2018. With the transaction, Deutsche Bank continues to execute its strategy to sharpen its focus and reduce complexity. The transaction remains subject to regulatory approvals and other conditions. The parties are aiming to close the transaction in the first half of 2019.

Disposal of Polish Private & Commercial Bank business

Following the announcement made on December 14, 2017 that Deutsche Bank had entered into an agreement to sell its Polish Private & Commercial Banking ("PCB") business from Deutsche Bank Polska S.A. ("DB Polska"), excluding its foreign currency denominated retail mortgage portfolio, together with DB Securities S.A., to Santander Bank Polska S.A. ("Santander Bank Polska", former Bank Zachodni WBK S.A.), the Group obtained all material outstanding regulatory approvals on July 17, 2018 to proceed with the designated transaction. Accordingly, in the third quarter 2018 the respective business was classified as a disposal group held for sale. Before its classification as a disposal group held for sale, the Group had revalued the designated disposal unit and recorded a pre-tax loss of € (157) million included in PCB's other income of the fourth quarter 2017. Updating the revaluation of the unit prior to its disposal in 2018 led to additional net year-to-date pretax charges of € (17) million recorded in PCB's net revenues for 2018.

The sale is in line with the Group's effort to continue to sharpen its focus and reduce complexity. Santander Bank Polska is part of the Santander Group, with Banco Santander S.A. being its parent company. The transaction was subject to approvals of the Polish FSA, other regulatory approvals, corporate consents and other conditions and closed in the fourth quarter 2018.

At closing of the transaction, the declaration of backing issued by Deutsche Bank AG in favor of DB Polska was terminated with regard to the liabilities included in the divested business. The declaration of backing issued in favor of DB Polska continues for the remaining business.

Disposals in 2017

Division	Disposal	Financial impact[1]	Date of the disposal
Corporate & Investment Bank	On June 5, 2017, the Group announced the completion of the sale of its Argentine subsidiary Deutsche Bank S.A. to Banco Comafi S.A. With outstanding substantial regulatory approvals received in May 2017, the entity had been classified as a disposal group held for sale prior to its disposal in June 2017.	The disposal resulted in a pre-tax loss on sale of € 190 million, including the realization of a currency translation adjustment, which was recorded in 2017 and mainly included in C&A.	Second quarter 2017
Asset Management	In the fourth quarter 2016, the Group had classified its fund administration and custody business of Sal. Oppenheim Luxembourg as a disposal group held for sale. The transaction was subject to customary closing conditions and regulatory approvals and was completed on December 1, 2017.	Up until its disposal, the revaluation of the unit resulted in an additional impairment loss of € 5 milion recorded in Other income of 2017.	Fourth quarter 2017

1 Impairment losses and reversals of impairment losses are included in Other income.

27 – Other Assets and Other Liabilities

in € m.	Dec 31, 2018	Dec 31, 2017
Other assets:		
Brokerage and securities related receivables		
Cash/margin receivables	42,827	46,519
Receivables from prime brokerage	3	12,638
Pending securities transactions past settlement date	3,654	3,929
Receivables from unsettled regular way trades	20,191	19,930
Total brokerage and securities related receivables	66,675	83,015
Debt Securities held to collect	5,184	N/A
Accrued interest receivable	2,536	2,374
Assets held for sale	2,679	45
Other	16,371	16,057
Total other assets	**93,444**	101,491

in € m.	Dec 31, 2018	Dec 31, 2017
Other liabilities:		
Brokerage and securities related payables		
Cash/margin payables	55,475	58,865
Payables from prime brokerage	15,495	25,042
Pending securities transactions past settlement date	2,228	2,562
Payables from unsettled regular way trades	17,510	20,274
Total brokerage and securities related payables	90,708	106,742
Accrued interest payable	2,486	2,623
Liabilities held for sale	1,242	16
Other	23,078	22,827
Total other liabilities	**117,513**	132,208

For further details on the assets and liabilities held for sale, please refer to Note 26 “Non-Current Assets and Disposal Groups Held for Sale”.

28 – Deposits

in € m.	Dec 31, 2018	Dec 31, 2017
Noninterest-bearing demand deposits	221,746	226,339
Interest-bearing deposits		
Demand deposits	126,280	133,280
Time deposits	130,039	133,952
Savings deposits	86,340	88,303
Total interest-bearing deposits	342,659	355,534
Total deposits	**564,405**	581,873

29 – Provisions

Movements by Class of Provisions

in € m.	Operational Risk	Civil Litigation	Regulatory Enforcement	Re-structuring	Other[1]	Total[2]
Balance as of January 1, 2017	309	2,014	5,607	741	952	**9,622**
Changes in the group of consolidated companies	0	(5)	(0)	(1)	5	(1)
New provisions	84	745	306	601	847	2,584
Amounts used	53	1,611	3,576	458	763	6,461
Unused amounts reversed	49	134	711	182	118	1,194
Effects from exchange rate fluctuations/Unwind of discount	(15)	(86)	(575)	(4)	(38)	(718)
Transfers	(2)	193	(153)	(0)	3	41
Balance as of January 1, 2018	275	1,115	897	696	889	**3,873**
Changes in the group of consolidated companies	0	0	0	1	(2)	(2)
New provisions	27	334	125	427	765	1,677
Amounts used	54	673	364	344	862	2,296
Unused amounts reversed	41	160	206	185	364	956
Effects from exchange rate fluctuations/Unwind of discount	5	42	41	(1)	(1)	87
Transfers	2	25	6	(9)	9	33
Balance as of December 31, 2018	215	684	499	585	433	**2,416**

[1] Figures have been restated to reflect the reclassification of € 1.0 billion and € 1.1 billion from Provisions to Deposits in the Group's consolidated balance sheet as of January 1, 2017 and January 1, 2018, respectively. See Note 1 "Significant Accounting Policies and Critical Accounting Estimates" for more details on the change in accounting policy impacting Home Savings Contracts.
[2] For the remaining portion of provisions as disclosed on the consolidated balance sheet, please see Note 21 "Allowance for Credit Losses", in which allowances for credit related off-balance sheet positions are disclosed.

Classes of Provisions

Operational Risk provisions arise out of operational risk and exclude civil litigation and regulatory enforcement provisions, which are presented as separate classes of provisions. Operational risk is the risk of loss resulting from inadequate or failed internal processes, people and systems, or from external events. The definition used for the purposes of determining operational provisions differs from the risk management definition, as it excludes risk of loss resulting from civil litigation and regulatory enforcement matters. For risk management purposes, operational risk includes legal risk, as payments to customers, counterparties and regulatory bodies in civil litigations or regulatory enforcement matters constitute loss events for operational shortcomings, but excludes business and reputational risk.

Civil Litigation provisions arise out of current or potential claims or proceedings alleging non-compliance with contractual or other legal or regulatory responsibilities, which have resulted or may result in demands from customers, counterparties or other parties in civil litigations.

Regulatory Enforcement provisions arise out of current or potential claims or proceedings alleging non-compliance with legal or regulatory responsibilities, which have resulted or may result in an assessment of fines or penalties by governmental regulatory agencies, self-regulatory organizations or other enforcement authorities.

Restructuring provisions arise out of restructuring activities. The Group aims to enhance its long-term competitiveness through major reductions in costs, duplication and complexity in the years ahead. For details see Note 10 "Restructuring".

Other provisions include several specific items arising from a variety of different circumstances, including the provision for the reimbursement of loan processing fees, deferred sales commissions, provisions for bank levies and mortgage repurchase demands.

Provisions and Contingent Liabilities

The Group recognizes a provision for potential loss only when there is a present obligation arising from a past event that is probable to result in an economic outflow that can be reliably estimated. Where a reliable estimate cannot be made for such an obligation, no provision is recognized and the obligation is deemed a contingent liability. Contingent liabilities also include possible obligations for which the possibility of future economic outflow is more than remote but less than probable. Where a provision has been taken for a particular claim, no contingent liability is recorded; for matters or sets of matters consisting of more than one claim, however, provisions may be recorded for some claims, and contingent liabilities (or neither a provision nor a contingent liability) may be recorded for others.

The Group operates in a legal and regulatory environment that exposes it to significant litigation risks. As a result, the Group is involved in litigation, arbitration and regulatory proceedings and investigations in Germany and in a number of jurisdictions outside Germany, including the United States. In recent years, regulation and supervision in a number of areas have increased, and regulators, governmental bodies and others have sought to subject financial services providers to increasing oversight and scrutiny, which in turn has led to additional regulatory investigations and enforcement actions which are often followed by civil litigation. This trend has accelerated markedly as a result of the global financial crisis.

In determining for which of the claims the possibility of a loss is probable, or less than probable but more than remote, and then estimating the possible loss for those claims, the Group takes into consideration a number of factors, including but not limited to the nature of the claim and its underlying facts, the procedural posture and litigation history of each case, rulings by the courts or tribunals, the Group's experience and the experience of others in similar cases (to the extent this is known to the Group), prior settlement discussions, settlements by others in similar cases (to the extent this is known to the Group), available indemnities and the opinions and views of legal counsel and other experts.

The provisions the Group has recognized for civil litigation and regulatory enforcement matters as of December 31, 2018 and January 1, 2018 are set forth in the table above. For some matters for which the Group believes an outflow of funds is probable, no provisions were recognized as the Group could not reliably estimate the amount of the potential outflow.

For the matters for which a reliable estimate can be made, the Group currently estimates that, as of December 31, 2018, the aggregate future loss of which the possibility is more than remote but less than probable is approximately € 2.5 billion for civil litigation matters (December 31, 2017: € 2.4 billion) and € 0.2 billion for regulatory enforcement matters (December 31, 2017: € 0.3 billion). These figures include matters where the Group's potential liability is joint and several and where the Group expects any such liability to be paid by a third party. For other significant civil litigation and regulatory enforcement matters, the Group believes the possibility of an outflow of funds is more than remote but less than probable but the amount is not reliably estimable, and accordingly such matters are not included in the contingent liability estimates. For still other significant civil litigation and regulatory enforcement matters, the Group believes the possibility of an outflow of funds is remote and therefore has neither recognized a provision nor included them in the contingent liability estimates.

This estimated possible loss, as well as any provisions taken, is based upon currently available information and is subject to significant judgment and a variety of assumptions, variables and known and unknown uncertainties. These uncertainties may include inaccuracies in or incompleteness of the information available to the Group, particularly at the preliminary stages of matters, and assumptions by the Group as to future rulings of courts or other tribunals or the likely actions or positions taken by regulators or adversaries may prove incorrect. Moreover, estimates of possible loss for these matters are often not amenable to the use of statistical or other quantitative analytical tools frequently used in making judgments and estimates, and are subject to even greater degrees of uncertainty than in many other areas where the Group must exercise judgment and make estimates. The estimated possible loss, as well as any provisions taken, can be and often are substantially less than the amount initially requested by regulators or adversaries or the maximum potential loss that could be incurred were the matters to result in a final adjudication adverse to the Group. Moreover, in several regions in which the Group operates, an adversary often is not required to set forth the amount it is seeking, and where it is, the amount may not be subject to the same requirements that generally apply to pleading factual allegations or legal claims.

The matters for which the Group determines that the possibility of a future loss is more than remote will change from time to time, as will the matters as to which a reliable estimate can be made and the estimated possible loss for such matters. Actual results may prove to be significantly higher or lower than the estimate of possible loss in those matters where such an estimate was made. In addition, loss may be incurred in matters with respect to which the Group believed the likelihood of loss was remote. In particular, the estimated aggregate possible loss does not represent the Group's potential maximum loss exposure for those matters.

The Group may settle litigation or regulatory proceedings or investigations prior to a final judgment or determination of liability. It may do so to avoid the cost, management efforts or negative business, regulatory or reputational consequences of continuing to contest liability, even when the Group believes it has valid defenses to liability. It may also do so when the potential consequences of failing to prevail would be disproportionate to the costs of settlement. Furthermore, the Group may, for similar reasons, reimburse counterparties for their losses even in situations where it does not believe that it is legally compelled to do so.

Current Individual Proceedings

Set forth below are descriptions of civil litigation and regulatory enforcement matters or groups of matters for which the Group has taken material provisions, or for which there are material contingent liabilities that are more than remote, or for which there is the possibility of material business or reputational risk; similar matters are grouped together and some matters consist of a number of proceedings or claims. The disclosed matters include matters for which the possibility of a loss is more than remote but for which the Group cannot reliably estimate the possible loss. Sets of matters are presented in English-language alphabetical order based on the titles the Group has used for them.

Danske Bank Estonia Investigations. Deutsche Bank has received requests for information from regulatory and law enforcement agencies concerning the Bank's correspondent banking relationship with Danske Bank, including the Bank's historical processing of correspondent banking transactions on behalf of customers of Danske Bank's Estonia branch prior to cessation of the correspondent banking relationship with that branch in 2015. Deutsche Bank is providing information to and otherwise cooperating with the investigating agencies. The Bank is also conducting an internal investigation into these matters, including of whether any violations of law, regulation or policy occurred and the effectiveness of the related internal control environment.

The Group has not established a provision or contingent liability with respect to this matter.

FX Investigations and Litigations. Deutsche Bank has received requests for information from certain regulatory and law enforcement agencies globally who investigated trading in, and various other aspects of, the foreign exchange market. Deutsche Bank cooperated with these investigations. Relatedly, Deutsche Bank has conducted its own internal global review of foreign exchange trading and other aspects of its foreign exchange business.

On October 19, 2016, the US Commodity Futures Trading Commission (CFTC), Division of Enforcement issued a letter ("CFTC Letter") notifying Deutsche Bank that the CFTC Division of Enforcement "is not taking any further action at this time and has closed the investigation of Deutsche Bank" regarding foreign exchange. As is customary, the CFTC Letter states that the CFTC Division of Enforcement "maintains the discretion to decide to reopen the investigation at any time in the future." The CFTC Letter has no binding impact on other regulatory and law enforcement agency investigations regarding Deutsche Bank's foreign exchange trading and practices, which remain pending.

On December 7, 2016, it was announced that Deutsche Bank reached an agreement with CADE, the Brazilian antitrust enforcement agency, to settle an investigation into conduct by a former Brazil-based Deutsche Bank trader. As part of that settlement, Deutsche Bank paid a fine of BRL 51 million and agreed to continue to comply with the CADE's administrative process until it is concluded. This resolves CADE's administrative process as it relates to Deutsche Bank, subject to Deutsche Bank's continued compliance with the settlement terms.

On February 13, 2017, the US Department of Justice (DOJ), Criminal Division, Fraud Section, issued a letter ("DOJ Letter") notifying Deutsche Bank that the DOJ has closed its criminal inquiry "concerning possible violations of federal criminal law in connection with the foreign exchange markets." As is customary, the DOJ Letter states that the DOJ may reopen its inquiry if it obtains additional information or evidence regarding the inquiry. The DOJ Letter has no binding impact on other regulatory and law enforcement agency investigations regarding Deutsche Bank's foreign exchange trading and practices, which remain pending.

On April 20, 2017, it was announced that Deutsche Bank AG, DB USA Corporation and Deutsche Bank AG New York Branch reached an agreement with the Board of Governors of the Federal Reserve System to settle an investigation into Deutsche Bank's foreign exchange trading and practices. Under the terms of the settlement, Deutsche Bank entered into a cease-and-desist order, and agreed to pay a civil monetary penalty of US$ 137 million. In addition, the Federal Reserve ordered Deutsche Bank to "continue to implement additional improvements in its oversight, internal controls, compliance, risk management and audit programs" for its foreign exchange business and other similar products, and to periodically report to the Federal Reserve on its progress.

On June 20, 2018, it was announced that Deutsche Bank AG and Deutsche Bank AG New York Branch reached an agreement with the New York State Department of Financial Services (DFS) to settle an investigation into Deutsche Bank's foreign exchange trading and sales practices. Under the terms of the settlement, Deutsche Bank entered into a consent order, and agreed to pay a civil monetary penalty of US$ 205 million. In addition, the DFS ordered Deutsche Bank to continue to implement improvements in its oversight, internal controls, compliance, risk management and audit programs for its foreign exchange business, and to periodically report to the DFS on its progress.

Investigations conducted by certain other regulatory agencies are ongoing, and Deutsche Bank has cooperated with these investigations.

On August 6, 2018, the US District Court for the Southern District of New York issued a final order approving Deutsche Bank's US$190 million settlement and plaintiffs' dismissal with prejudice of the consolidated action (*In re Foreign Exchange Benchmark Rates Antitrust Litigation*). The consolidated action was brought on behalf of a putative class of over-the-counter traders and a putative class of central-exchange traders, who are domiciled in or traded in the United States or its territories, and alleged illegal agreements to restrain competition with respect to and to manipulate both benchmark rates and spot rates, particularly the spreads quoted on those spot rates. On July 10, 2018, the US Court of Appeals for the Second Circuit affirmed the district court's dismissal of *Doris Sue Allen v. Bank of America, et al*., a putative class action that tracked the allegations in the consolidated action and asserted that such purported conduct gave rise to, and resulted in a breach of, defendants' fiduciary duties under the US Employment Retirement Income Security Act of 1974. On September 6, 2018, the US District Court for the Southern District of New York denied Axiom Investment Advisors, LLC's ("Axiom") motion for class certification in *Axiom v. Deutsche Bank AG*. Axiom's motion for voluntary dismissal with prejudice was granted on January 18, 2019. This putative class action alleged that Deutsche Bank rejected FX orders placed over electronic trading platforms through the application of a function referred to as "Last Look" and that these orders were later filled at prices less favorable to putative class members. One US putative class action remains pending against Deutsche Bank. Filed on September 26, 2016, amended on March 24, 2017, and later consolidated with a similar action that was filed on April 28, 2017, the "Indirect Purchasers" action (*Contant, et al. v. Bank of America Corp., et al.*) tracks the allegations in the consolidated action and asserts that such purported conduct injured "indirect purchasers" of FX instruments. These claims are brought pursuant to the Sherman Act and various states' consumer protection statutes. On March 15, 2018, the court granted Deutsche Bank's motion to dismiss this action. Plaintiffs filed a motion to replead and proposed an amended complaint on April 5, 2018, which Deutsche Bank opposed. On October 25, 2018, the US District Court for the Southern District of New York granted plaintiffs' motion and a second amended complaint was filed on November 28, 2018. Discovery has commenced in the Indirect Purchasers action. Filed on November 7, 2018, *Allianz, et al. v. Bank of America Corporation, et al.*, was brought on an individual basis by a group of asset managers who opted out of the settlement in the consolidated action. Plaintiffs filed an amended complaint on March 1, 2019. Deutsche Bank's response to that complaint is due on April 1, 2019. Limited discovery has commenced pending resolution of defendants' motion to dismiss.

Deutsche Bank also has been named as a defendant in two Canadian class proceedings brought in the provinces of Ontario and Quebec. Filed on September 10, 2015, these class actions assert factual allegations similar to those made in the consolidated action in the United States and seek damages pursuant to the Canadian Competition Act as well as other causes of action. Plaintiffs in the Ontario action have moved for class certification and completed service of their class certification motion record on June 23, 2017. Deutsche Bank has opposed class certification, and a hearing on the class certification motion is scheduled for June 10 to 14, 2019.

Deutsche Bank has also been named as a defendant in two putative class actions filed in Israel. Filed in September 2018, these actions assert factual allegations similar to those made in the consolidated action in the United States and seek damages pursuant to Israeli antitrust law as well as other causes of action. These actions are in preliminary stages.

The Group has not disclosed whether it has established a provision or contingent liability with respect to these matters because it has concluded that such disclosure can be expected to prejudice seriously their outcome.

Interbank and Dealer Offered Rates Matters. *Regulatory and Law Enforcement Matters.* Deutsche Bank has responded to requests for information from, and cooperated with, various regulatory and law enforcement agencies, in connection with industry-wide investigations concerning the setting of the London Interbank Offered Rate (LIBOR), Euro Interbank Offered Rate (EURIBOR), Tokyo Interbank Offered Rate (TIBOR) and other interbank and/or dealer offered rates.

As previously reported, Deutsche Bank paid € 725 million to the European Commission pursuant to a settlement agreement dated December 4, 2013 in relation to anticompetitive conduct in the trading of interest rate derivatives.

Also as previously reported, on April 23, 2015, Deutsche Bank entered into separate settlements with the DOJ, the CFTC, the UK Financial Conduct Authority (FCA), and the New York State Department of Financial Services (DFS) to resolve investigations into misconduct concerning the setting of LIBOR, EURIBOR, and TIBOR. Under the terms of these agreements, Deutsche Bank agreed to pay penalties of US$ 2.175 billion to the DOJ, CFTC and DFS and GBP 226.8 million to the FCA. As part of the resolution with the DOJ, DB Group Services (UK) Limited (an indirectly-held, wholly-owned subsidiary of Deutsche Bank) pled guilty to one count of wire fraud in the US District Court for the District of Connecticut and Deutsche Bank entered into a Deferred Prosecution Agreement with a three year term pursuant to which it agreed (among other things) to the filing of an Information in the US District Court for the District of Connecticut charging Deutsche Bank with one count of wire fraud and one count of price fixing in violation of the Sherman Act. On April 23, 2018, the Deferred Prosecution Agreement expired, and the US District Court for the District of Connecticut subsequently dismissed the criminal Information against Deutsche Bank. The fines referred to above, which include a US$ 150 million fine paid in April 2017 following the March 28, 2017 sentencing of DB Group Services (UK) Limited, have been paid in full and do not form part of the Bank's provisions.

As previously reported, on March 20, 2017, Deutsche Bank paid CHF 5.4 million to the Swiss Competition Commission (WEKO) pursuant to a settlement agreement in relation to Yen LIBOR.

On October 25, 2017, Deutsche Bank entered into a settlement with a working group of US state attorneys general resolving their interbank offered rate investigation. Among other conditions, Deutsche Bank agreed to make a settlement payment of US$ 220 million. The settlement amount has been paid in full and does not form part of the Bank's provisions.

Other investigations of Deutsche Bank concerning the setting of various interbank and/or dealer offered rates remain ongoing.

The Group has not disclosed whether it has established a provision or contingent liability with respect to the remaining investigations because it has concluded that such disclosure can be expected to prejudice seriously their outcome.

Overview of Civil Litigations. Deutsche Bank is party to 45 US civil actions concerning alleged manipulation relating to the setting of various interbank and/or dealer offered rates which are described in the following paragraphs, as well as single actions pending in each of the UK, Israel and Argentina. Most of the civil actions, including putative class actions, are pending in the US District Court for the Southern District of New York (SDNY), against Deutsche Bank and numerous other defendants. All but four of the US civil actions were filed on behalf of parties who allege losses as a result of manipulation relating to the setting of US dollar LIBOR. The four civil actions pending against Deutsche Bank that do not relate to US dollar LIBOR are also pending in the SDNY, and include one consolidated action concerning Pound Sterling (GBP) LIBOR, one action concerning Swiss franc (CHF) LIBOR, one action concerning two Singapore Dollar (SGD) benchmark rates, the Singapore Interbank Offered Rate (SIBOR) and the Swap Offer Rate (SOR), and one action concerning the Canadian Dealer Offered Rate (CDOR).

Claims for damages for all 45 of the US civil actions discussed have been asserted under various legal theories, including violations of the US Commodity Exchange Act, federal and state antitrust laws, the US Racketeer Influenced and Corrupt Organizations Act, and other federal and state laws. The Group has not disclosed whether it has established a provision or contingent liability with respect to these matters because it has concluded that such disclosure can be expected to prejudice seriously their outcome.

US dollar LIBOR. With three exceptions, all of the US civil actions concerning US dollar LIBOR are being coordinated as part of a multidistrict litigation (the "US dollar LIBOR MDL") in the SDNY. In light of the large number of individual cases pending against Deutsche Bank and their similarity, the civil actions included in the US dollar LIBOR MDL are now subsumed under the following general description of the litigation pertaining to all such actions, without disclosure of individual actions except when the circumstances or the resolution of an individual case is material to Deutsche Bank.

Following a series of decisions in the US dollar LIBOR MDL between March 2013 and December 2016 narrowing their claims, plaintiffs are currently asserting antitrust claims, claims under the US Commodity Exchange Act and state law fraud, contract, unjust enrichment and other tort claims. The court has also issued decisions dismissing certain plaintiffs' claims for lack of personal jurisdiction and on statute of limitations grounds.

On December 20, 2016, the district court issued a ruling dismissing certain antitrust claims while allowing others to proceed. Multiple plaintiffs have filed appeals of the district court's December 20, 2016 ruling to the US Court of Appeals for the Second Circuit, and those appeals are proceeding in parallel with the ongoing proceedings in the district court. Briefing of the appeals is complete.

On July 13, 2017, Deutsche Bank executed a settlement agreement in the amount of US$ 80 million with plaintiffs to resolve a putative class action pending as part of the US dollar LIBOR MDL asserting claims based on alleged transactions in Eurodollar futures and options traded on the Chicago Mercantile Exchange (*Metzler Investment GmbH* v. *Credit Suisse Group AG*). The settlement agreement was submitted to the court for preliminary approval on October 11, 2017. The settlement amount is already fully reflected in existing litigation provisions and no additional provisions have been taken for this settlement. The settlement agreement is subject to further review and approval by the court.

On February 6, 2018, Deutsche Bank executed a settlement agreement in the amount of US$ 240 million with plaintiffs to resolve a putative class action pending as part of the US dollar LIBOR MDL asserting claims based on alleged transactions in US dollar LIBOR-linked financial instruments purchased over the counter directly from LIBOR panel banks (*Mayor & City Council of Baltimore* v. *Credit Suisse AG*). The agreement was submitted to the court for approval, and the court granted final approval of the settlement on October 25, 2018. Accordingly, the action is not included in the total number of actions above. The settlement amount, which Deutsche Bank has paid, is no longer reflected in Deutsche Bank's litigation provisions.

Plaintiff in one of the non-MDL cases proceeding in the SDNY moved to amend its complaint following a dismissal of its claims. On March 20, 2018, the court denied plaintiff's motion for leave to amend and entered judgment in the action, closing the case. Plaintiff has appealed the court's decision, and briefing of the appeal is complete.

On January 15 and 31, 2019, plaintiffs filed two putative class action complaints in the SDNY against several financial institutions, alleging that the defendants, members of the panel of banks that provided US dollar LIBOR submissions, the organization that administers LIBOR, and their affiliates, conspired to suppress US dollar LIBOR submissions from February 1, 2014 through the present. These actions were subsequently consolidated. A third putative class action complaint was filed on March 4, 2019. These actions are not part of the US dollar LIBOR MDL.

There is a further UK civil action regarding US dollar LIBOR brought by the US Federal Deposit Insurance Corporation, in which a claim for damages has been asserted pursuant to Article 101 of The Treaty on the Functioning of the European Union, Section 2 of Chapter 1 of the UK Competition Act 1998 and US state laws. Deutsche Bank is defending this action.

A further class action regarding LIBOR, EURIBOR and TIBOR has been filed in Israel seeking damages for losses incurred by Israeli individuals and entities. Deutsche Bank is contesting service and jurisdiction.

Yen LIBOR and Euroyen TIBOR. On July 21, 2017, Deutsche Bank executed a settlement agreement in the amount of US$ 77 million with plaintiffs to resolve two putative class actions pending in the SDNY alleging manipulation of Yen LIBOR and Euroyen TIBOR (*Laydon* v. *Mizuho Bank, Ltd.* and *Sonterra Capital Master Fund Ltd.* v. *UBS AG*). The agreement was submitted to the court for approval, and the court granted final approval of the settlement on December 7, 2017. Accordingly, these two actions are not included in the total number of actions above. The settlement amount, which Deutsche Bank paid on August 1, 2017, is no longer reflected in Deutsche Bank's litigation provisions.

EURIBOR. On May 10, 2017, Deutsche Bank executed a settlement agreement in the amount of US$ 170 million with plaintiffs to resolve a putative class action pending in the SDNY alleging manipulation of EURIBOR (*Sullivan* v. *Barclays PLC*). The agreement was submitted to the court for approval, and the court granted final approval of the settlement on May 18, 2018. Accordingly, the action is not included in the total number of actions above. The settlement amount, which Deutsche Bank has paid, is no longer reflected in Deutsche Bank's litigation provisions.

GBP LIBOR. A putative class action alleging manipulation of the Pound Sterling (GBP) LIBOR remains pending in the SDNY. On December 21, 2018, the court partially granted defendants' motions to dismiss the action, dismissing all claims against Deutsche Bank. On January 22, 2019, the plaintiffs moved for partial reconsideration of the court's decision; that motion is fully briefed.

CHF LIBOR. A putative class action alleging manipulation of the Swiss Franc (CHF) LIBOR remains pending in the SDNY. It is the subject of fully briefed motions to dismiss.

SIBOR and SOR. A putative class action alleging manipulation of the Singapore Interbank Offered Rate (SIBOR) and Swap Offer Rate (SOR) remains pending in the SDNY. On October 25, 2018, the plaintiff filed a third amended complaint, which is the subject of a fully briefed motion to dismiss. On December 26, 2018, plaintiff moved the court for leave to file a fourth amended complaint; that motion is fully briefed.

CDOR. A putative class action alleging manipulation of the Canadian Dealer Offered Rate (CDOR) is pending in the SDNY. On March 14, 2019, the court granted defendants' motions to dismiss the amended complaint, dismissing all actions against Deutsche Bank.

Investigations Into Referral Hiring Practices and Certain Business Relationships. Certain regulators and law enforcement authorities in various jurisdictions, including the US Securities and Exchange Commission and the DOJ, are investigating, among other things, Deutsche Bank's compliance with the US Foreign Corrupt Practices Act and other laws with respect to the Bank's hiring practices related to candidates referred by clients, potential clients and government officials, and the Bank's engagement of finders and consultants. Deutsche Bank is responding to and continuing to cooperate with these investigations. Certain regulators in other jurisdictions have also been briefed on these investigations. The Group has recorded a provision with respect to certain of these regulatory investigations. The Group has not disclosed the amount of this provision because it has concluded that such disclosure can be expected to prejudice seriously the outcome of these regulatory investigations. Based on the facts currently known, it is not practicable at this time for the Bank to predict the timing of a resolution.

Kirch. The public prosecutor's office in Munich (*Staatsanwaltschaft München I*) has conducted and is currently conducting criminal investigations in connection with the Kirch case inter alia with regard to former Deutsche Bank Management Board members. The Kirch case involved several civil proceedings between Deutsche Bank AG and Dr. Leo Kirch as well as media companies controlled by him. The key issue was whether an interview given by Dr. Rolf Breuer, then Spokesman of Deutsche Bank's Management Board, in 2002 with Bloomberg television, during which Dr. Breuer commented on Dr. Kirch's (and his companies') inability to obtain financing, caused the insolvency of the Kirch companies. In February 2014, Deutsche Bank and the Kirch heirs reached a comprehensive settlement, which has ended all legal disputes between them.

The allegations of the public prosecutor are that the relevant former Management Board members failed to correct in a timely manner factual statements made by Deutsche Bank's litigation counsel in submissions filed in one of the civil cases between Kirch and Deutsche Bank AG before the Munich Higher Regional Court and the Federal Court of Justice, after allegedly having become aware that such statements were not correct, and/or made incorrect statements in such proceedings, respectively.

On April 25, 2016, following the trial before the Regional Court Munich regarding the main investigation involving Jürgen Fitschen and four other former Management Board members, the Regional Court acquitted all of the accused, as well as the Bank, which was a secondary participant in such proceedings. On April 26, 2016, the public prosecutor filed an appeal. An appeal is limited to a review of legal errors rather than facts. On October 18, 2016, a few weeks after the written judgment was served, the public prosecutor provided notice that it will uphold its appeal only with respect to former Management Board members Jürgen Fitschen, Dr. Rolf Breuer and Dr. Josef Ackermann and that it will withdraw its appeal with respect to former Management Board members Dr. Clemens Börsig and Dr. Tessen von Heydebreck for whom the acquittal thereby becomes binding. On January 24, 2018, the Attorney General's Office applied to convene an oral hearing before the Federal Supreme Court to decide about the Munich public prosecutor's appeal.

The other investigations by the public prosecutor (which also deal with attempted litigation fraud in the Kirch civil proceedings) are ongoing. Deutsche Bank is fully cooperating with the Munich public prosecutor's office.

The Group does not expect these proceedings to have significant economic consequences for it and has not recorded a provision or contingent liability with respect thereto.

Mortgage-Related and Asset-Backed Securities Matters and Investigation. *Regulatory and Governmental Matters.* Deutsche Bank, along with certain affiliates (collectively referred in these paragraphs to as "Deutsche Bank"), have received subpoenas and requests for information from certain regulators and government entities, including members of the Residential Mortgage-Backed Securities Working Group of the US Financial Fraud Enforcement Task Force, concerning its activities regarding the origination, purchase, securitization, sale, valuation and/or trading of mortgage loans, residential mortgage-backed securities (RMBS), commercial mortgage-backed securities (CMBS), collateralized debt obligations (CDOs), other asset-backed securities and credit derivatives. Deutsche Bank is cooperating fully in response to those subpoenas and requests for information.

On December 23, 2016, Deutsche Bank announced that it reached a settlement-in-principle with the DOJ to resolve potential claims related to its RMBS business conducted from 2005 to 2007. The settlement became final and was announced by the DOJ on January 17, 2017. Under the settlement, Deutsche Bank paid a civil monetary penalty of US$ 3.1 billion and agreed to provide US$ 4.1 billion in consumer relief.

In September 2016, Deutsche Bank received administrative subpoenas from the Maryland Attorney General seeking information concerning Deutsche Bank's RMBS and CDO businesses from 2002 to 2009. On June 1, 2017, Deutsche Bank and the Maryland Attorney General reached a settlement to resolve the matter for US$ 15 million in cash and US$ 80 million in consumer relief (to be allocated from the overall US$ 4.1 billion consumer relief obligation agreed to as part of Deutsche Bank's settlement with the DOJ).

The Group has recorded provisions with respect to some of the outstanding regulatory investigations but not others, a portion of which relates to the consumer relief being provided under the DOJ settlement. The Group has not disclosed the amount of these provisions because it has concluded that such disclosure can be expected to prejudice seriously the resolution of these matters.

Issuer and Underwriter Civil Litigation. Deutsche Bank has been named as defendant in numerous civil litigations brought by private parties in connection with its various roles, including issuer or underwriter, in offerings of RMBS and other asset-backed securities. These cases, described below, allege that the offering documents contained material misrepresentations and omissions, including with regard to the underwriting standards pursuant to which the underlying mortgage loans were issued, or assert that various representations or warranties relating to the loans were breached at the time of origination. The Group has recorded provisions with respect to several of these civil cases, but has not recorded provisions with respect to all of these matters. The Group has not disclosed the amount of these provisions because it has concluded that such disclosure can be expected to prejudice seriously the resolution of these matters.

Deutsche Bank is a defendant in a class action relating to its role as one of the underwriters of six RMBS offerings issued by Novastar Mortgage Corporation. No specific damages are alleged in the complaint. The lawsuit was brought by plaintiffs representing a class of investors who purchased certificates in those offerings. The parties reached a settlement to resolve the matter for a total of US$ 165 million, a portion of which was paid by the Bank. On August 30, 2017, FHFA/Freddie Mac filed an objection to the settlement and shortly thereafter appealed the district court's denial of their request to stay settlement approval proceedings, which appeal was resolved against FHFA/Freddie Mac. The court approved the settlement on March 7, 2019 over FHFA/Freddie Mac's objections. The parties have 60 days from entry of the order to file an appeal.

Deutsche Bank is a defendant in three actions related to RMBS offerings brought by the US Federal Deposit Insurance Corporation (FDIC) as receiver for: (a) Colonial Bank (alleging no less than US$ 213 million in damages against all defendants), (b) Guaranty Bank (alleging no less than US$ 901 million in damages against all defendants), and (c) Citizens National Bank and Strategic Capital Bank (alleging an unspecified amount in damages against all defendants). In each of these actions, the appellate courts reinstated claims previously dismissed on statute of limitations grounds and petitions for rehearing and certiorari to the US Supreme Court were denied. In the case concerning Colonial Bank, on June 21, 2017, the FDIC filed a second amended complaint, which defendants moved to dismiss on September 7, 2017. On March 2, 2018, the court granted in part and denied in part defendants' motion to dismiss. In the case concerning Guaranty Bank, on September 14, 2017, the court granted in part Deutsche Bank's motion for summary judgment regarding the proper method of calculating pre-judgment interest. On August 31, 2018, the court vacated the March 2019 trial date. On September 27, 2018, the court ordered that the case must go to mediation before January 11, 2019, and that it is stayed in the meantime. The parties engaged in mediation on November 27, 2018. No settlement was reached during the mediation. The court re-opened the case and, on January 2, 2019, set a trial date of August 26, 2019. In the case concerning Citizens National Bank and Strategic Capital Bank, on July 31, 2017, the FDIC filed a second amended complaint, which defendants moved to dismiss on September 14, 2017. The case is stayed pending resolution of defendants' motion to dismiss.

Deutsche Bank is a defendant in an action brought by Royal Park Investments (as purported assignee of claims of a special-purpose vehicle created to acquire certain assets of Fortis Bank) alleging common law claims related to the purchase of RMBS. The complaint did not specify the amount of damages sought. On April 17, 2017, the court dismissed the complaint, and on February 13, 2018, the plaintiff filed its appeal. On October 9, 2018, the dismissal was affirmed by the appellate court. Plaintiff filed a motion for leave to appeal to the New York Court of Appeals on November 8, 2018. Defendants filed an opposition on November 21, 2018, which completed the briefing. On January 15, 2019, the New York Court of Appeals denied the motion.

In June 2014, HSBC, as trustee, brought an action in New York state court against Deutsche Bank to revive a prior action, alleging that Deutsche Bank failed to repurchase mortgage loans in the ACE Securities Corp. 2006-SL2 RMBS offering. The revival action was stayed during the pendency of an appeal of the dismissal of a separate action wherein HSBC, as trustee, brought an action against Deutsche Bank alleging breaches of representations and warranties made by Deutsche Bank concerning the mortgage loans in the same offering. On March 29, 2016, the court dismissed the revival action, and on April 29, 2016, plaintiff filed a notice of appeal. Plaintiff's appeal has been adjourned to the appellate court's September 2019 term.

Deutsche Bank is a defendant in two cases brought initially by RMBS investors and subsequently by HSBC, as trustee, in New York state court. The cases allege breaches of loan-level representations and warranties in the ACE Securities Corp. 2006-FM1 and ACE Securities Corp. 2007-ASAP1 RMBS offerings, respectively. Both cases were dismissed on statute of limitations grounds by the trial court on March 28, 2018. Plaintiff has appealed the dismissals, which appeals remain pending.

In the actions against Deutsche Bank solely as an underwriter of other issuers' RMBS offerings, Deutsche Bank has contractual rights to indemnification from the issuers, but those indemnity rights may in whole or in part prove effectively unenforceable where the issuers are now or may in the future be in bankruptcy or otherwise defunct.

Trustee Civil Litigation. Deutsche Bank is a defendant in civil lawsuits brought by various groups of investors concerning its role as trustee of certain RMBS trusts. The actions generally allege claims for breach of contract, breach of fiduciary duty, breach of the duty to avoid conflicts of interest, negligence and/or violations of the US Trust Indenture Act of 1939, based on the trustees' alleged failure to perform adequately certain obligations and/or duties as trustee for the trusts.

Two putative class actions brought by a group of investors, including funds managed by BlackRock Advisors, LLC, PIMCO-Advisors, L.P., and others recently were settled. One of these putative class actions was pending in the Superior Court of California until the court dismissed the action with prejudice on January 11, 2019. The second putative class action was pending in the US District Court for the Southern District of New York and was dismissed with prejudice on December 6, 2018. Deutsche Bank was also a defendant in a lawsuit brought by the Western and Southern Life Insurance Company and five related entities, but on September 28, 2017, plaintiffs filed a notice of voluntary dismissal of their claims.

Deutsche Bank is currently a defendant in six separate civil lawsuits – two putative class actions and four individual lawsuits.

The putative class actions were brought by Royal Park Investments SA/NV, concern 10 trusts, and are pending in the US District Court for the Southern District of New York.

In the first case, which plaintiff filed on June 18, 2014, plaintiff alleges that the trusts suffered total realized collateral losses of more than US$ 3.1 billion, although the complaint does not specify a damage amount. On March 29, 2018, the court issued an order denying plaintiff's renewed motion for class certification, and on August 7, 2018, the court of appeals denied plaintiff's motion for leave to immediately appeal the denial of class certification. On September 28, 2018, the court denied plaintiff's motion seeking permission to prove liability and damages using a statistical sample of the loans at issue in the case. Discovery is ongoing. On August 4, 2017, Royal Park filed a separate, additional class action complaint against the trustee asserting claims for breach of contract, unjust enrichment, conversion, breach of trust, equitable accounting and declaratory and injunctive relief arising out of the payment from trust funds of the trustee's legal fees and expenses in the other, ongoing Royal Park litigation. On August 13, 2018, the court stayed the action pending resolution of the underlying Royal Park litigation and denied the trustee's motion to dismiss without prejudice to its refiling once the stay is lifted.

The four individual lawsuits include actions by (a) the National Credit Union Administration Board ("NCUA"), as an investor in 37 trusts, which allegedly suffered total realized collateral losses of US$ 8.5 billion; (b) certain CDOs (collectively, "Phoenix Light") that hold RMBS certificates issued by 43 RMBS trusts, and seeking "hundreds of millions of dollars in damages"; (c) Commerzbank AG, as an investor in 50 RMBS trusts, seeking recovery for alleged "hundreds of millions of dollars in losses;" and (d) IKB International, S.A. in Liquidation and IKB Deutsche Industriebank AG (collectively, "IKB"), as an investor in 30 RMBS trusts, seeking more than US$ 268 million of damages. In the NCUA case, NCUA notified the court on August 31, 2018 that it was dismissing claims relating to 60 out of the 97 trusts originally at issue; NCUA's motion for leave to amend its complaint and Deutsche Bank's motion to dismiss the complaint if the court grants NCUA's motion for leave to amend are fully briefed as of December 19, 2018. In the Phoenix Light case, the plaintiffs filed an amended complaint on September 27, 2017, and the trustees filed an answer to the complaint on November 13, 2017. On December 7, 2018, the parties filed motions for summary judgment. In the Commerzbank case, the plaintiff filed an amended complaint on November 30, 2017, and the trustees filed an answer to the complaint on January 29, 2018. On December 7, 2018, the parties filed motions for summary judgment. In the IKB case, the court heard oral argument on the trustee's motion to dismiss on May 3, 2017, but has not yet issued a decision. On June 20, 2017, the IKB plaintiffs stipulated to the dismissal with prejudice of all claims asserted against Deutsche Bank concerning four trusts. Discovery is ongoing.

The Group has established contingent liabilities and provisions with respect to certain of these matters but the Group has not disclosed the amounts because it has concluded that such disclosure can be expected to prejudice seriously the outcome of these matters.

Postbank Voluntary Public Takeover Offer. On September 12, 2010, Deutsche Bank announced the decision to make a voluntary takeover offer for the acquisition of all shares in Deutsche Postbank AG (Postbank). On October 7, 2010, the Bank published the official offer document. In its takeover offer, Deutsche Bank offered Postbank shareholders consideration of € 25 for each Postbank share. The takeover offer was accepted for a total of approximately 48.2 million Postbank shares.

In November 2010, a former shareholder of Postbank, Effecten-Spiegel AG, which had accepted the takeover offer, brought a claim against Deutsche Bank alleging that the offer price was too low and was not determined in accordance with the applicable law of the Federal Republic of Germany. The plaintiff alleges that Deutsche Bank had been obliged to make a mandatory takeover offer for all shares in Postbank, at the latest, in 2009. The plaintiff avers that, at the latest in 2009, the voting rights of Deutsche Post AG in Postbank had to be attributed to Deutsche Bank AG pursuant to Section 30 of the German Takeover Act. Based thereon, the plaintiff alleges that the consideration offered by Deutsche Bank AG for the shares in Postbank in the 2010 voluntary takeover offer needed to be raised to € 57.25 per share.

The Regional Court Cologne *(Landgericht)* dismissed the claim in 2011 and the Cologne appellate court dismissed the appeal in 2012. The Federal Court set aside the Cologne appellate court's judgment and referred the case back to the appellate court. In its judgment, the Federal Court stated that the appellate court had not sufficiently considered the plaintiff's allegation that Deutsche Bank AG and Deutsche Post AG "acted in concert" in 2009.

Starting in 2014, additional former shareholders of Postbank, who accepted the 2010 tender offer, brought similar claims as Effecten-Spiegel AG against Deutsche Bank which are pending with the Regional Court Cologne and the Higher Regional Court of Cologne, respectively. On October 20, 2017, the Regional Court Cologne handed down a decision granting the claims in a total of 14 cases which were combined in one proceeding. The Regional Court Cologne took the view that Deutsche Bank was obliged to make a mandatory takeover offer already in 2008 so that the appropriate consideration to be offered in the takeover offer should have been € 57.25 per share. Taking the consideration paid into account, the additional consideration per share owed to shareholders which have accepted the takeover offer would thus amount to € 32.25. Deutsche Bank appealed this decision and the appeal has been assigned to the 13th Senate of the Higher Regional Court of Cologne, which also is hearing the appeal of Effecten-Spiegel AG.

On November 8, 2017, a hearing took place before the Higher Regional Court of Cologne in the Effecten-Spiegel case. In that hearing, the Higher Regional Court indicated that it disagreed with the conclusions of the Regional Court Cologne and took the preliminary view that Deutsche Bank was not obliged to make a mandatory takeover offer in 2008 or 2009. Initially the Higher Regional Court resolved to announce a decision on December 13, 2017. However, this was postponed to February 2018 because the plaintiff challenged the three members of the 13th Senate of the Higher Regional Court of Cologne for alleged prejudice. The challenge was rejected by the Higher Regional Court of Cologne at the end of January 2018. In February 2018, the court granted a motion by Effecten-Spiegel AG to re-open the hearing.

The Higher Regional Court informed the parties by notice dated February 19, 2019 that it has doubts that an acting in concert can be based on the contractual clauses which the Regional Court Cologne found to be sufficient to assume an acting in concert (and to grant the plaintiffs' claims in October 2017). Against this background, the Higher Regional Court resolved to take further evidence and to call a number of witnesses in both cases who shall be heard from October 30, 2019 until at least December 11, 2019 in weekly hearings. The individuals to be heard include current and former board members of Deutsche Bank, Deutsche Post AG and Postbank as well as other persons involved in the Postbank transaction. The court further informed the parties that it is considering to request from Deutsche Bank the production of relevant transaction documents. The hearings to take evidence initially scheduled for March 27, 2019 and (as a precautionary measure) April 3 and May 29, 2019 were canceled.

Stefan Krause, a former Deutsche Bank Management Board member, (who is to testify on request of the plaintiffs) has invoked the right to refuse to give testimony because in February 2018 a law firm representing some plaintiffs in the above-mentioned civil actions had filed a criminal complaint with the public prosecutor in Frankfurt am Main against certain Deutsche Bank personnel alleging that they engaged in fraudulent conduct in connection with the takeover offer. However, the competent public prosecutors rejected opening proceedings. The Higher Regional Court Cologne has set March 20, 2019 as the date for a hearing on the legality of the refusal to testify in court.

Deutsche Bank has been served with a large number of additional lawsuits filed against Deutsche Bank shortly before the end of 2017, almost all of which are now pending with the Regional Court Cologne. Some of the new plaintiffs allege that the consideration offered by Deutsche Bank AG for the shares in Postbank in the 2010 voluntary takeover should be raised to € 64.25 per share.

The claims for payment against Deutsche Bank in relation to these matters total almost € 700 million (excluding interest).

The Group has established a contingent liability with respect to these matters but the Group has not disclosed the amount of this contingent liability because it has concluded that such disclosure can be expected to prejudice seriously the outcome of these matters.

Further Proceedings Relating to the Postbank Takeover. In September 2015, former shareholders of Postbank filed in the Regional Court Cologne shareholder actions against Postbank to set aside the squeeze-out resolution taken in the shareholders meeting of Postbank in August 2015. Among other things, the plaintiffs allege that Deutsche Bank was subject to a suspension of voting rights with respect to its shares in Postbank based on the allegation that Deutsche Bank failed to make a mandatory takeover offer at a higher price in 2009. The squeeze out is final and the proceeding itself has no reversal effect, but may result in damage payments. The claimants in this proceeding refer to legal arguments similar to those asserted in the Effecten-Spiegel proceeding described above. In a decision on October 20, 2017, the Regional Court Cologne declared the squeeze-out resolution to be void. The court, however, did not rely on a suspension of voting rights due to an alleged failure of Deutsche Bank to make a mandatory takeover offer, but argued that Postbank violated information rights of Postbank shareholders in Postbank's shareholders meeting in August 2015. Postbank has appealed this decision.

The legal question of whether Deutsche Bank had been obliged to make a mandatory takeover offer for all Postbank shares prior to its 2010 voluntary takeover may also impact two pending appraisal proceedings (Spruchverfahren). These proceedings were initiated by former Postbank shareholders with the aim to increase the cash compensation offered in connection with the squeeze-out of Postbank shareholders in 2015 and the cash compensation offered and annual guaranteed dividend paid in connection with the execution of a domination and profit and loss transfer agreement (Beherrschungs- und Gewinnabführungsvertrag) between DB Finanz-Holding AG (now DB Beteiligungs-Holding GmbH) and Postbank in 2012. The Regional Court Cologne issued resolutions indicating that it is inclined to consider a potential obligation of Deutsche Bank to make a mandatory takeover offer for Postbank at an offer price of € 57.25 when determining the adequate cash compensation in the appraisal proceedings. The cash compensation paid in connection with the domination and profit and loss transfer agreement was € 25.18 and was accepted for approximately 0.5 million shares. The squeeze-out compensation paid in 2015 was € 35.05 and approximately 7 million shares were squeezed-out.

The Group has not disclosed whether it has established a provision or contingent liability with respect to this matter because it has concluded that such disclosure can be expected to prejudice seriously its outcome.

Russia/UK Equities Trading Investigation. Deutsche Bank has investigated the circumstances around equity trades entered into by certain clients with Deutsche Bank in Moscow and London that offset one another. The total volume of transactions reviewed is significant. Deutsche Bank's internal investigation of potential violations of law, regulation and policy and into the related internal control environment has concluded, and Deutsche Bank has assessed the findings identified during the investigation; to date it has identified certain violations of Deutsche Bank's policies and deficiencies in Deutsche Bank's control environment. Deutsche Bank has advised regulators and law enforcement authorities in several jurisdictions (including Germany, Russia, the UK and the United States) of this investigation. Deutsche Bank has taken disciplinary measures with regards to certain individuals in this matter.

On January 30 and 31, 2017, the DFS and the FCA announced settlements with the Bank related to their investigations into this matter. The settlements conclude the DFS and the FCA's investigations into the Bank's anti-money laundering (AML) control function in its investment banking division, including in relation to the equity trading described above. Under the terms of the settlement agreement with the DFS, Deutsche Bank entered into a consent order, and agreed to pay civil monetary penalties of US$ 425 million and to engage an independent monitor for a term of up to two years. Under the terms of the settlement agreement with the FCA, Deutsche Bank agreed to pay civil monetary penalties of approximately GBP 163 million. On May 30, 2017, the Federal Reserve announced its settlement with the Bank resolving this matter as well as additional AML issues identified by the Federal Reserve. Deutsche Bank paid a penalty of US$ 41 million. Deutsche Bank also agreed to retain independent third parties to assess its Bank Secrecy Act/AML program and review certain foreign correspondent banking activity of its subsidiary Deutsche Bank Trust Company Americas. The Bank is also required to submit written remediation plans and programs.

Deutsche Bank continues to cooperate with regulators and law enforcement authorities, including the DOJ which has its own ongoing investigation into these securities trades. The Group has recorded a provision with respect to the remaining investigation. The Group has not disclosed the amount of this provision because it has concluded that such disclosure can be expected to prejudice seriously the outcome of this matter.

Sovereign, Supranational and Agency Bonds (SSA) Investigations and Litigations. Deutsche Bank has received inquiries from certain regulatory and law enforcement authorities, including requests for information and documents, pertaining to SSA bond trading. Deutsche Bank is cooperating with these investigations.

On December 20, 2018, the European Commission sent a Statement of Objections to Deutsche Bank regarding a potential breach of EU antitrust rules in relation to secondary market trading of SSA bonds denominated in US dollars. The sending of a Statement of Objections is a step in the European Commission's investigation and does not prejudge the outcome of the investigation. Deutsche Bank has proactively cooperated with the European Commission in this matter and as a result has been granted immunity. In accordance with the European Commission's guidelines, Deutsche Bank does not expect a financial penalty.

Deutsche Bank is a defendant in several putative class action complaints filed in the US District Court for the Southern District of New York by alleged direct and indirect market participants claiming violations of antitrust law and common law related to alleged manipulation of the secondary trading market for SSA bonds. Deutsche Bank has reached an agreement to settle the actions by direct market participants for the amount of US$48.5 million and has recorded a provision in the same amount. The settlement is subject to court approval. The action filed on behalf of alleged indirect market participants is in its early stages.

Deutsche Bank is also a defendant in putative class actions filed on November 7, 2017 and December 5, 2017 in the Ontario Superior Court of Justice and Federal Court of Canada, respectively, claiming violations of antitrust law and the common law relating to alleged manipulation of secondary trading of SSA bonds. The complaints rely on allegations similar to those in the US class actions involving SSA bond trading, and seek compensatory and punitive damages. The cases are in their early stages.

Deutsche Bank was named as a defendant in several putative class action complaints filed in the US District Court for the Southern District of New York alleging violations of US antitrust law and a claim for unjust enrichment relating to Mexican government bond trading. The case is in its early stages.

Deutsche Bank has also been named as a defendant in four putative class action complaints filed in February and March 2019 in the US District Court for the Southern District of New York alleging violations of antitrust law and common law related to alleged manipulation of the secondary trading market for US Agency bonds. These cases are in the early stages.

Other than as noted above, the Group has not disclosed whether it has established provisions or contingent liabilities with respect to the matters referred to above because it has concluded that such disclosure can be expected to prejudice seriously their outcome.

Trust Preferred Securities Litigation. Deutsche Bank and certain of its affiliates and former officers are the subject of a consolidated putative class action, filed in the United States District Court for the Southern District of New York, asserting claims under the federal securities laws on behalf of persons who purchased certain trust preferred securities issued by Deutsche Bank and its affiliates between October 2006 and May 2008. In a series of opinions, the court dismissed all claims as to four of the six offerings at issue, but allowed certain alleged omissions claims relating to the November 2007 and February 2008 offerings to proceed. The district court limited claims relating to the two offerings remaining in the case to alleged failures (i) to disclose "any known trends or uncertainties that have had or that the registrant reasonably expects will have a material favorable or unfavorable impact on net sales or revenues or income from continuing operations" and (ii) to disclose "the most significant factors that make the offering speculative or risky" pursuant to Items 303 and 503 of Regulation S-K. Defendants have served Answers denying all wrongdoing. On October 2, 2018, the district court certified a plaintiff class as to both offerings. Merits discovery is ongoing.

The Group has not disclosed whether it has established a provision or contingent liability with respect to this matter because it has concluded that such disclosure can be expected to prejudice seriously its outcome.

US Treasury Securities Investigations and Litigations. Deutsche Bank has received inquiries from certain regulatory and law enforcement authorities, including requests for information and documents, pertaining to US Treasuries auctions, trading, and related market activity. Deutsche Bank is cooperating with these investigations.

Deutsche Bank's subsidiary Deutsche Bank Securities Inc. (DBSI) was a defendant in several putative class actions alleging violations of US antitrust law, the US Commodity Exchange Act and common law related to the alleged manipulation of the US Treasury securities market. These cases have been consolidated in the Southern District of New York. On November 16, 2017, plaintiffs filed a consolidated amended complaint, which did not name DBSI as a defendant. On December 11, 2017, the court dismissed DBSI from the class action without prejudice.

The Group has not disclosed whether it has established a provision or contingent liability with respect to these matters because it has concluded that such disclosure can be expected to prejudice seriously their outcome.

30 – Credit related Commitments and Contingent Liabilities

Irrevocable lending commitments and lending related contingent liabilities

In the normal course of business the Group regularly enters into irrevocable lending commitments, including fronting commitments as well as contingent liabilities consisting of financial and performance guarantees, standby letters of credit and indemnity agreements on behalf of its customers. Under these contracts the Group is required to perform under an obligation agreement or to make payments to the beneficiary based on third party's failure to meet its obligations. For these instruments it is not known to the Group in detail if, when and to what extent claims will be made. In the event that the Group has to pay out cash in respect of its fronting commitments, the Group would immediately seek reimbursement from the other syndicate lenders. The Group considers all the above instruments in monitoring the credit exposure and may require collateral to mitigate inherent credit risk. If the credit risk monitoring provides sufficient perception about a loss from an expected claim, a provision is established and recorded on the balance sheet.

The following table shows the Group's revocable lending commitments, irrevocable lending commitments and lending related contingent liabilities without considering collateral or provisions. It shows the maximum potential utilization of the Group in case all these liabilities entered into must be fulfilled. The table therefore does not show the expected future cash flows from these liabilities as many of them will expire without being drawn and arising claims will be honored by the customers or can be recovered from proceeds of arranged collateral.

Irrevocable lending commitments and lending related contingent liabilities

in € m.	Dec 31, 2018	Dec 31, 2017
Irrevocable lending commitments	167,722	158,253
Revocable lending commitments	44,327	45,867
Contingent liabilities	51,605	48,212
Total	**263,654**	252,331

Other commitments and other contingent liabilities

The following table shows the Group's other irrevocable commitments and other contingent liabilities without considering collateral or provisions. It shows the maximum potential utilization of the Group in case all these liabilities entered into must be fulfilled. The table therefore does not show the expected future cash flows from these liabilities as many of them will expire without being drawn and arising claims will be honored by the customers or can be recovered from proceeds of arranged collateral.

Other commitments and other contingent liabilities

in € m.	Dec 31, 2018	Dec 31, 2017
Other commitments	130	82
Other contingent liabilities	74	5
Total	**204**	86

Government Assistance

In the course of its business, the Group regularly applies for and receives government support by means of Export Credit Agency ("ECA") guarantees covering transfer and default risks for the financing of exports and investments into Emerging Markets and to a lesser extent, developed markets for Structured Trade & Export Finance and short- and medium-term Trade Finance business. Almost all export-oriented states have established such ECAs to support their domestic exporters. The ECAs act in the name and on behalf of the government of their respective country and are either constituted directly as governmental departments or organized as private companies vested with the official mandate of the government to act on its behalf. Terms and conditions of such ECA guarantees are broadly similar due to the fact that most of the ECAs act within the scope of the Organization for Economic Cooperation and Development ("OECD") consensus rules. The OECD consensus rules, an intergovernmental agreement of the OECD member states, define benchmarks intended to ensure that a fair competition between different exporting nations will take place.

In some countries dedicated funding programs with governmental support are offered for ECA-covered financings. The Group makes use of such programs to assist its clients in the financing of exported goods and services. In certain financings, the Group also receives government guarantees from national and international governmental institutions as collateral to support financings in the interest of the respective governments. The majority of such ECA guarantees received by the Group were issued either by the Euler-Hermes Kreditversicherungs-AG acting on behalf of the Federal Republic of Germany, by the Korean Export Credit Agencies (Korea Trade Insurance Corporation and The Export-Import Bank of Korea) acting on behalf of the Republic of Korea or by Chinese Export Credit Agency (China Export & Insurance Corporation (Sinosure)) acting on behalf of the People's Republic of China.

Irrevocable payment commitments with regard to levies

Irrevocable payment commitments related to bank levy according to Bank Recovery and Resolution Directive (BRRD), the Single Resolution Fund (SRF) and the German statutory deposit protection amounted to € 595.1 million as of December 31, 2018, and to € 412.3 million as of December 31, 2017.

31 – Other Short-Term Borrowings

in € m.	Dec 31, 2018	Dec 31, 2017
Other short-term borrowings:		
Commercial paper	2,752	5,274
Other	11,406	13,137
Total other short-term borrowings	**14,158**	18,411

32 – Long-Term Debt and Trust Preferred Securities

Long-Term Debt by Earliest Contractual Maturity

in € m.	Due in 2019	Due in 2020	Due in 2021	Due in 2022	Due in 2023	Due after 2023	Total Dec 31, 2018	Total Dec 31, 2017
Senior debt:								
Bonds and notes:								
Fixed rate	16,275	10,510	18,483	6,949	6,898	18,779	77,894	76,285
Floating rate	8,002	4,540	5,347	3,553	2,321	6,732	30,495	33,210
Subordinated debt:								
Bonds and notes:								
Fixed rate	2,057	1,135	0	0	30	2,075	5,297	5,493
Floating rate	24	180	0	0	1,202	14	1,420	1,738
Other	20,958	6,263	1,335	557	1,087	6,777	**36,977**	42,988
Total long-term debt	47,317	22,627	25,164	11,060	11,538	34,377	**152,083**	159,715

The Group did not have any defaults of principal, interest or other breaches with respect to its liabilities in 2018 and 2017.

Trust Preferred Securities[1]

in € m.	Dec 31, 2018	Dec 31, 2017
Fixed rate	2,194	4,462
Floating rate	975	1,030
Total trust preferred securities	**3,168**	5,491

[1] Perpetual instruments, redeemable at specific future dates at the Group's option.

33 – Maturity Analysis of the earliest contractual undiscounted cash flows of Financial Liabilities

					Dec 31, 2018
in € m.	On demand	Due within 3 months	Due between 3 and 12 months	Due between 1 and 5 years	Due after 5 years
Noninterest bearing deposits	221,746	0	0	0	0
Interest bearing deposits	126,416	137,089	47,258	21,683	12,059
Trading liabilities[1]	59,922	0	0	0	0
Negative market values from derivative financial instruments[1]	301,487	0	0	0	0
Financial liabilities designated at fair value through profit or loss	16,438	25,838	7,895	2,760	5,724
Investment contract liabilities[2]	0	0	512	0	0
Negative market values from derivative financial instruments qualifying for hedge accounting[3]	0	609	502	505	306
Central bank funds purchased	252	0	0	0	0
Securities sold under repurchase agreements	3,151	963	508	1	0
Securities loaned	3,358	3	0	0	0
Other short-term borrowings	11,067	2,258	1,622	0	0
Long-term debt	3	34,449	16,268	80,028	36,085
Trust preferred securities	0	36	3,306	0	0
Other financial liabilities	96,573	2,762	1,201	369	60
Off-balance sheet loan commitments	167,722	0	0	0	0
Financial guarantees	22,502	0	0	0	0
Total[4]	1,030,639	204,008	79,073	105,346	54,234

[1] Trading liabilities and derivatives not qualifying for hedge accounting balances are recorded at fair value. The Group believes that this best represents the cash flow that would have to be paid if these positions had to be closed out. Trading liabilities and derivatives not qualifying for hedge accounting balances are shown within "on demand" which Group's management believes most accurately reflects the short-term nature of trading activities. The contractual maturity of the instruments may however extend over significantly longer periods.
[2] These are investment contracts where the policy terms and conditions result in their redemption value equaling fair value.
[3] Derivatives designated for hedge accounting are recorded at fair value and are shown in the time bucket at which the hedged relationship is expected to terminate.
[4] The balances in the table do not agree to the numbers in the Group's balance sheet as the cash flows included in the table are undiscounted. This analysis represents the worst case scenario for the Group if the Group was required to repay all liabilities earlier than expected. The Group believes that the likelihood of such an event occurring is remote.

					Dec 31, 2017
in € m.	On demand	Due within 3 months	Due between 3 and 12 months	Due between 1 and 5 years	Due after 5 years
Noninterest bearing deposits	226,339	0	0	0	0
Interest bearing deposits	133,378	146,204	45,816	19,194	12,510
Trading liabilities[1]	71,457	0	0	0	0
Negative market values from derivative financial instruments[1]	342,726	0	0	0	0
Financial liabilities designated at fair value through profit or loss	29,207	29,360	4,847	2,599	5,951
Investment contract liabilities[2]	0	0	574	0	0
Negative market values from derivative financial instruments qualifying for hedge accounting[3]	0	69	336	672	218
Central bank funds purchased	174	83	0	0	0
Securities sold under repurchase agreements	14,152	2,525	1,348	491	23
Securities loaned	6,684	3	0	0	1
Other short-term borrowings	11,859	2,326	3,600	0	0
Long-term debt	4	7,409	41,820	78,063	41,926
Trust preferred securities	0	1,710	3,328	688	0
Other financial liabilities	112,961	3,483	554	373	4
Off-balance sheet loan commitments	153,700	0	0	0	0
Financial guarantees	19,883	0	0	0	0
Total[4]	1,122,525	193,172	102,223	102,080	60,632

[1] Trading liabilities and derivatives not qualifying for hedge accounting balances are recorded at fair value. The Group believes that this best represents the cash flow that would have to be paid if these positions had to be closed out. Trading liabilities and derivatives not qualifying for hedge accounting balances are shown within "on demand" which Group's management believes most accurately reflects the short-term nature of trading activities. The contractual maturity of the instruments may however extend over significantly longer periods. .
[2] These are investment contracts where the policy terms and conditions result in their redemption value equaling fair value.
[3] Derivatives designated for hedge accounting are recorded at fair value and are shown in the time bucket at which the hedged relationship is expected to terminate.
[4] The balances in the table do not agree to the numbers in the Group's balance sheet as the cash flows included in the table are undiscounted. This analysis represents the worst case scenario for the Group if the Group was required to repay all liabilities earlier than expected. The Group believes that the likelihood of such an event occurring is remote.

Additional Notes

34 – Common Shares

Common Shares

Deutsche Bank's share capital consists of common shares issued in registered form without par value. Under German law, each share represents an equal stake in the subscribed capital. Therefore, each share has a nominal value of € 2.56, derived by dividing the total amount of share capital by the number of shares.

Number of shares	Issued and fully paid	Treasury shares	Outstanding
Common shares, January 1, 2017	1,379,273,131	(203,442)	1,379,069,689
Shares issued under share-based compensation plans	0	0	0
Capital increase	687,500,000	0	687,500,000
Shares purchased for treasury	0	(490,690,358)	(490,690,358)
Shares sold or distributed from treasury	0	490,522,710	490,522,710
Common shares, December 31, 2017	2,066,773,131	(371,090)	2,066,402,041
Shares issued under share-based compensation plans	0	0	0
Capital increase	0	0	0
Shares purchased for treasury	0	(372,179,750)	(372,179,750)
Shares sold or distributed from treasury	0	371,206,696	371,206,696
Common shares, December 31, 2018	2,066,773,131	(1,344,144)	2,065,428,987

There are no issued ordinary shares that have not been fully paid.

Shares purchased for treasury mainly consist of shares purchased with the intention of being resold in the short-term as well as held by the Group for a period of time. In addition, the Group has bought back shares for equity compensation purposes. All such transactions were recorded in shareholders' equity and no revenues and expenses were recorded in connection with these activities. Treasury stock held as of year-end will mainly be used for future share-based compensation.

Authorized Capital

The Management Board is authorized to increase the share capital by issuing new shares for cash consideration. As of December 31, 2018, Deutsche Bank AG had authorized but unissued capital of € 2,560,000,000 which may be issued in whole or in part until April 30, 2022. Further details are governed by Section 4 of the Articles of Association.

Authorized capital	Consideration	Pre-emptive rights	Expiration date
€ 512,000,000	Cash	May be excluded pursuant to Section 186 (3) sentence 4 of the Stock Corporation Act and may be excluded insofar as it is necessary to grant pre-emptive rights to the holders of option rights, convertible bonds and convertible participatory rights	April 30, 2022
€ 2,048,000,000	Cash	May be excluded insofar as it is necessary to grant pre-emptive rights to the holders of option rights, convertible bonds and convertible participatory rights.	April 30, 2022

Conditional Capital

The Management Board is authorized to issue once or more than once, participatory notes that are linked with conversion rights or option rights and/or convertible bonds and/or bonds with warrants. The participatory notes, convertible bonds or bonds with warrants may also be issued by affiliated companies of Deutsche Bank AG. For this purpose share capital was increased conditionally upon exercise of these conversion and/or exchange rights or upon mandatory conversion.

Conditional capital	Purpose of conditional capital	Expiration date
€ 512,000,000	May be used if holders of conversion or option rights that are linked with participatory notes or convertible bonds or bonds with warrants make use of their conversion or option rights or holders with conversion obligations of convertible participatory notes or convertible bonds fulfill their obligation to convert.	April 30, 2022
€ 51,200,000	May be used to fulfill options that are awarded on or before the expiration date and will only be used to the extent that holders of issued options make use of their right to receive shares and shares are not delivered out of treasury shares	April 30, 2022

Dividends

The following table presents the amount of dividends proposed or declared for the years ended December 31, 2018, 2017 and 2016, respectively.

	2018 (proposed)[1]	2017	2016[2]
Cash dividends declared (in € m.)	227,000,000	227,000,000	227,000,000
Cash dividends declared per common share (in €)	0.11	0.11	0.11

[1] Cash dividends for 2018 is based on the number of shares issued as of December 31, 2018.
[2] Dividends for 2016 and 2015 were approved by the annual general meeting in 2017 and were paid simultaneously in 2017.

No dividends have been declared since the balance sheet date.

35 – Employee Benefits

Share-Based Compensation Plans

The Group made grants of share-based compensation under the DB Equity Plan. This plan represents a contingent right to receive Deutsche Bank common shares after a specified period of time. The award recipient is not entitled to receive dividends during the vesting period of the award.

The share awards granted under the terms and conditions of the DB Equity Plan may be forfeited fully or partly if the recipient voluntarily terminates employment before the end of the relevant vesting period. Vesting usually continues after termination of employment in cases such as redundancy or retirement.

In countries where legal or other restrictions hinder the delivery of shares, a cash plan variant of the DB Equity Plan was used for granting awards.

The following table sets forth the basic terms of these share plans:

Grant year(s)	Deutsche Bank Equity Plan	Vesting schedule	Eligibility
2018	Annual Award (CIB)[1]	1/4: 12 months[2] 1/4: 24 months[2] 1/4: 36 months[2] 1/4: 48 months[2]	Select employees as annual performance-based compensation
	Annual Award (non-CIB)[1]	1/3: 12 months[2] 1/3: 24 months[2] 1/3: 36 months[2]	Select employees as annual performance-based compensation
	Annual Award (Senior Management)[1]	1/5: 12 months[2] 1/5: 24 months[2] 1/5: 36 months[2] 1/5: 48 months[2] 1/5: 60 months[2]	Members of Management Board or of Senior Management
	Retention/New Hire	Individual specification	Select employees to attract and retain the best talent
	Annual Award – Upfront	Vesting immediately at grant[3]	Regulated employees
2017	Annual Award[1]	1/4: 12 months[4] 1/4: 24 months[4] 1/4: 36 months[4] 1/4: 48 months[4]	Select employees as annual performance-based compensation
		Or cliff vesting after 54 months[4]	Members of Management Board or of Senior Leadership Cadre
	Retention/New Hire	Individual specification	Select employees to attract and retain the best talent
	Annual Award – Upfront	Vesting immediately at grant[3]	Regulated employees
	Key Retention Plan (KRP)[5]	1/2: 50 months[6] 1/2: 62 months[6]	Material Risk Takers (MRTs)
		Cliff vesting after 43 months	Non-Material Risk Takers (non-MRTs)
2016	Annual Award	1/4: 12 months[4] 1/4: 24 months[4] 1/4: 36 months[4] 1/4: 48 months[4]	Select employees as annual performance-based compensation
		Or cliff vesting after 54 months[4]	Members of Management Board or of Senior Leadership Cadre
	Retention/New Hire	Individual specification	Select employees to attract and retain the best talent
	Annual Award – Upfront	Vesting immediately at grant[3]	Regulated employees
	Key Position Award (KPA)[7]	Cliff-vesting after 4 years[3]	Select employees as annual retention
2015/ 2014	Annual Award	1/3: 12 months[4] 1/3: 24 months[4] 1/3: 36 months[4]	Select employees as annual performance-based compensation
		Or cliff vesting after 54 months[4]	Members of Management Board or of Senior Leadership Group
	Retention/New Hire	Individual specification	Select employees to attract and retain the best talent
	Annual Award – Upfront	Vesting immediately at grant[8]	Regulated employees

[1] For employees of certain legal entities, deferred equity is replaced with restricted shares due to local regulatory requirements.
[2] For members of the Management Board or the Senior Management and all other InstVV-regulated employees a further retention period of twelve months applies.
[3] For all regulated employees share delivery takes place after a further retention period of twelve months. For awards granted in 2018 this is only applicable to InstVV MRTs.
[4] For members of the Management Board or of the Senior Leadership Cadre and all other regulated employees a further retention period of six months applies.
[5] The Key Retention Plan (KRP) is referenced as the "Retention Award Program" in the Bank's Compensation Report. Equity-based awards granted under this program in January 2017 are subject to an additional share price hurdle, meaning this award proportion only vests in the event that the Bank's share price reaches a certain share target price prior to vesting.
[6] For Material Risk Takers (MRTs) share delivery takes place after a further retention period of twelve months.
[7] A predefined proportion of the individual's KPA is subject to an additional share price hurdle, meaning this award proportion only vests in the event that the Bank's share price reaches a certain share target price prior to vesting.
[8] For members of the Management Board share delivery takes place after a retention period of three years. For all other regulated employees share delivery takes place after a retention period of six months.

Furthermore, the Group offers a broad-based employee share ownership plan entitled Global Share Purchase Plan ("GSPP"). The GSPP offers employees in specific countries the opportunity to purchase Deutsche Bank shares in monthly installments over one year. At the end of the purchase cycle, the bank matches the acquired stock in a ratio of one to one up to a maximum of ten free shares, provided that the employee remains at Deutsche Bank Group for another year. In total, about 12,450 staff from 20 countries enrolled in the tenth cycle that began in November 2018.

The Group has other local share-based compensation plans, none of which, individually or in the aggregate, are material to the consolidated financial statements.

The following table shows the outstanding share award units as of the respective dates, which represent a contingent right to receive Deutsche Bank common shares after a specified period of time. It also includes the grants under the cash plan variant of the DB Equity Plan.

	Share units (in thousands)	Weighted-average grant date fair value per unit
Balance as of December 31, 2016	90,292	€ 20.22
Balance as of December 31, 2017	137,541	€ 14.78
Balance as of December 31, 2018	153,117	€ 11.15

Share-based payment transactions resulting in a cash payment give rise to a liability, which amounted to approximately € 12 million, € 23 million and € 15 million for the years ended December 31, 2018, 2017 and 2016, respectively.

As of December 31, 2018, the grant volume of outstanding share awards was approximately € 1.7 billion. Thereof, € 1.2 billion had been recognized as compensation expense in the reporting year or prior to that. Hence, compensation expense for deferred share-based compensation not yet recognized amounted to € 0.5 billion as of December 31, 2018.

In addition to the amounts shown in the table above, approximately 4.4 and 9.1 million shares were issued to plan participants in February and March 2019, resulting from the vesting of DB Equity Plan awards granted in prior years (thereof 0.16 million units for February and 0.16 million units for March 2019 vesting cycles under the cash plan variant of this DB Equity Plan).

DWS Share-Based Plans (cash-settled)

In September 2018 one-off IPO related awards under the DWS Stock Appreciation Rights (SAR) Plan was granted to all DWS Group staff and in addition there were awards for a limited number of DWS senior managers under the DWS Equity (PSU) Plan.

The DWS SAR Plan represents a contingent right to receive a cash payment equal to any appreciation (or gain) in the value of a set number of notional DWS Shares over a fixed period of time. This award does not provide any entitlement to receive DWS Shares, voting rights or dividends associated with them.

The DWS Equity Plan is a phantom share plan representing a contingent right to receive a cash payment by referencing to the value of DWS Shares during a specified period of time.

The award recipient for any share-based compensation plan is not entitled to receive dividends during the vesting period of the award.

The share awards granted under the terms and conditions of any share-based compensation plan are forfeited fully or partly if the recipient voluntarily terminates employment before the end of the relevant vesting period. Vesting usually continues after termination of employment in cases such as redundancy or retirement.

The following table set forth the basic terms of the DWS share-based plans:

Grant year(s)	Award Type	Vesting schedule	Eligibility
2018 DWS Equity Plan	Retention/New Hire	Individual Specification	Select employees to attract and retain the best talent
	PSU Award (one-off IPO related award)[1]	For MRTs: 1/3: March 2022[3] 1/3: March 2023 1/3: March 2024	Select Senior Managers
2018 DWS SAR Plan	SAR Award (one-off IPO related award)[2]	For non-MRTs: June 1, 2021[5] For MRTs: March 1, 2023[3]	All DWS employees[4]

[1] The award and the number of units is subject to the achievement of pre-defined targets (Average Net flows (NNA)2019-2020 and FY 2020 Adjusted CIR (Cost Income Ratio) measured December 2020.
[2] The award is subject to a positive IBIT of DWS Group December 2019.
[3] Depending on their individual regulatory status, a 6 months retention period (AIFMD/UCITS MRTs) or a 12-months retention period (InstVV MRTs) applies after vesting.
[4] Unless the employee received PSU Award.
[5] Following vesting / retention period a 4-year exercise period applies.

As of December 31, 2018, the grant volume of outstanding share awards was approximately € 23 million. Thereof, € 4 million has been recognized as compensation expense in the reporting year since the award date. Hence, compensation expense for deferred share-based compensation not yet recognized is approximately € 19 million which is dependent on future share price development.

The fair value of the awards have been measured using the Black-Scholes formula. Service and non-market performance conditions attached to the arrangements were not taken into account in measuring fair value. The inputs used in the measurement of the fair values at grant date and measurement date of the awards were as follows:

	Grant date 15 September 2018	Measurement date 31 December 2018	Grant date 15 September 2018	Measurement date 31 December 2018
	PSU	PSU	SAR	SAR
Units	1,272	1,248	2,224	2,192
Fair value	€ 14.56	€ 14.18	€ 3.95	€ 3.35
Share price	€ 23.75	€ 23.37	€ 23.75	€ 23.37
Exercise price	N/A	N/A	€ 24.65	€ 24.65
Expected volatility (weighted-average, in %)	36	35	36	35
Expected life (weighted-average, in years)	5	5	6	6
Expected dividends (in % of income)	65	65	65	65
Risk-free interest rate (based on government funds, in %)	0	0	0	0

Given the short timeframe since the IPO of DWS Group, the expected volatility of the DWS share price has been based on an evaluation of the historical volatility for a comparable peer group over the preceding 5-year period. The expected dividend level is linked to the latest DWS Group communication.

In addition, the DWS Equity Plan has performance conditions which will determine the nominal amount which can ultimately vest under the award. These performance conditions are linked to the DWS Group strategy, specifically with regards to the target for net inflows and the adjusted cost income ratio, which will be tested prior to vesting in March 2021.

Post-employment Benefit Plans

Nature of Plans

The Group sponsors a number of post-employment benefit plans on behalf of its employees, both defined contribution plans and defined benefit plans. The Group's plans are accounted for based on the nature and substance of the plan. Generally, for defined benefit plans the value of a participant's accrued benefit is based on each employee's remuneration and length of service; contributions to defined contribution plans are typically based on a percentage of each employee's remuneration. The rest of this note focuses predominantly on the Group's defined benefit plans.

The Group's defined benefit plans are primarily described on a geographical basis, reflecting differences in the nature and risks of benefits, as well as in the respective regulatory environments. In particular, the requirements set by local regulators can vary significantly and determine the design and financing of the benefit plans to a certain extent. Key information is also shown based on participant status, which provides a broad indication of the maturity of the Group's obligations.

					Dec 31, 2018
in € m.	Germany	UK	U.S.	Other	Total
Defined benefit obligation related to					
Active plan participants	4,599	593	337	623	6,152
Participants in deferred status	2,210	2,286	500	97	5,093
Participants in payment status	5,144	989	500	242	6,875
Total defined benefit obligation	11,953	3,868	1,337	962	18,120
Fair value of plan assets	10,877	4,884	1,074	892	17,727
Funding ratio (in %)	91 %	126 %	80 %	93 %	98 %

					Dec 31, 2017
in € m.	Germany	UK	U.S.	Other	Total
Defined benefit obligation related to					
Active plan participants	4,823	688	363	640	6,514
Participants in deferred status	2,196	2,583	536	93	5,408
Participants in payment status	5,071	905	502	246	6,724
Total defined benefit obligation	12,090	4,176	1,401	979	18,646
Fair value of plan assets	11,003	5,202	1,091	915	18,211
Funding ratio (in %)	91 %	125 %	78 %	93 %	98 %

The majority of the Group's defined benefit plan obligations relate to Germany, the United Kingdom and the United States. Within the other countries, the largest obligation relates to Switzerland. In Germany and some continental European countries, post-employment benefits are usually agreed on a collective basis with respective employee works councils, unions or their equivalent. The Group's main pension plans are governed by boards of trustees, fiduciaries or their equivalent.

Post-employment benefits can form an important part of an employee's total remuneration. The Group's approach is that their design shall be attractive to employees in the respective market, but sustainable for the Group to provide over the longer term. At the same time, the Group tries to limit its risks related to provision of such benefits. Consequently the Group has moved to offer defined contribution plans in many locations over recent years.

In the past the Group typically offered pension plans based on final pay prior to retirement. These types of benefits still form a significant part of the pension obligations for participants in deferred and payment status. Currently, in Germany and the United States, the main defined benefit pension plans for active staff are cash account type plans where the Group credits an annual amount to individual accounts based on an employee's current salary. Dependent on the plan rules, the accounts increase either at a fixed interest rate or participate in market movements of certain underlying investments to limit the investment risk for the Group. Sometimes, in particular in Germany, there is a guaranteed benefit amount within the plan rules, e.g. payment of at least the amounts contributed. Upon retirement, beneficiaries may usually opt for a lump sum or for conversion of the accumulated account balance into an annuity. This conversion is often based on market conditions and mortality assumptions at retirement. In the past, the main defined benefit pension plan in the United Kingdom was redesigned for active employees still eligible to the plan to reduce the overall long-term risk exposure to the Group. Furthermore recent changes to pension legislation and taxation in the UK continued to cause increased take-up of cash options and transfer values out of the defined benefit pension plans.

The Group also sponsors retirement and termination indemnity plans in several countries, as well as some post-employment medical plans for a number of current and retired employees, mainly in the United States. The post-employment medical plans typically pay fixed percentages of medical expenses of eligible retirees after a set deductible has been met. In the United States, once a retiree is eligible for Medicare, the Group contributes to a Health Reimbursement Account and the retiree is no longer eligible for the Group's medical program. The Group's total defined benefit obligation for post-employment medical plans was € 192 million and € 196 million at December 31, 2018 and December 31, 2017, respectively. In combination with the benefit structure, these plans represent limited risk for the Group, given the nature and size of the post-retirement medical plan liabilities of € 192 million versus the size of the Group's balance sheet at year end 2018.

The following amounts of expected benefit payments from the Group's defined benefit plans include benefits attributable to employees' past and estimated future service, and include both amounts paid from the Group's external pension trusts and paid directly by the Group in respect of unfunded plans.

in € m.	Germany	UK	U.S.	Other	Total
Actual benefit payments 2018	437	176	114	76	803
Benefits expected to be paid 2019	439	115	81	66	701
Benefits expected to be paid 2020	448	92	76	59	675
Benefits expected to be paid 2021	460	98	82	59	699
Benefits expected to be paid 2022	480	106	82	61	729
Benefits expected to be paid 2023	498	116	86	60	760
Benefits expected to be paid 2024 – 2028	2,747	694	455	321	4,217
Weighted average duration of defined benefit obligation (in years)	14	22	11	12	15

Multi-employer Plans

In Germany, the Group is a member of the BVV Versicherungsverein des Bankgewerbes a.G. (BVV) together with other financial institutions. The BVV offers retirement benefits to eligible employees in Germany as a complement to post-employment benefit promises of the Group. Both employers and employees contribute on a regular basis to the BVV. The BVV provides annuities of a fixed amount to individuals on retirement and increases these fixed amounts if surplus assets arise within the plan. According to legislation in Germany, the employer is ultimately liable for providing the benefits to its employees. An increase in benefits may also arise due to additional obligations to retirees for the effects of inflation. BVV is a multi-employer defined benefit plan. However, in line with industry practice, the Group accounts for it as a defined contribution plan since insufficient information is available to identify assets and liabilities relating to the Group's current and former employees, primarily because the BVV does not fully allocate plan assets to beneficiaries nor to member companies. According to the BVV's disclosures, there is no current deficit in the plan that may affect the amount of future Group contributions. Furthermore, any plan surplus emerging in the future will be distributed to the plan members, hence it cannot reduce future Group contributions. In June 2016, the BVV's Annual General Meeting approved a reduction in benefits from future contributions for certain groups of employees. Similar to other participating companies, the Group committed to make up for reduced benefit levels by increasing contributions to the BVV from January 1, 2017. A corresponding labor agreement has been signed with the German works council.

The Group's expenses for defined contribution plans also include annual contributions by DB Privat- und Firmenkundenbank AG to the pension fund for postal civil servants in Germany. Responsibility for the liability for these benefits lies with the German government.

Governance and Risk

The Group maintains a Pensions Risk Committee to oversee its pension and related risks on a global basis. This Committee meets quarterly, reports directly to the Senior Executive Compensation Committee and is supported by the Pensions Operating Committee.

Within this context, the Group develops and maintains guidelines for governance and risk management, including funding, asset allocation and actuarial assumption setting. In this regard, risk management means the management and control of risks for the Group related to market developments (e.g., interest rate, credit spread, price inflation), asset investment, regulatory or legislative requirements, as well as monitoring demographic changes (e.g., longevity). Especially during and after acquisitions or changes in the external environment (e.g., legislation, taxation), topics such as the general plan design or potential plan amendments are considered. Any plan changes follow a process requiring approval by Group Human Resources. To the extent that pension plans are funded, the assets held mitigate some of the liability risks, but introduce investment risk.

In the Group's key pension countries, the Group's largest post-employment benefit plan risk exposures relate to potential changes in credit spreads, interest rates, price inflation and longevity, although these have been partially mitigated through the investment strategy adopted.

Overall, the Group seeks to minimize the impact of pensions on the Group's financial position from market movements, subject to balancing the trade-offs involved in financing post-employment benefits, regulatory capital and constraints from local funding or accounting requirements. The Group measures its pension risk exposures on a regular basis using specific metrics developed by the Group for this purpose.

Funding

The Group maintains various external pension trusts to fund the majority of its defined benefit plan obligations. The Group's funding policy is to maintain coverage of the defined benefit obligation by plan assets within a range of 90 % to 100 % of the obligation, subject to meeting any local statutory requirements. The Group has also determined that certain plans should remain unfunded, although their funding approach is subject to periodic review, e.g. when local regulations or practices change. Obligations for the Group's unfunded plans are accrued on the balance sheet.

For most of the externally funded defined benefit plans there are local minimum funding requirements. The Group can decide on any additional plan contributions, with reference to the Group's funding policy. There are some locations, e.g. the United Kingdom, where the trustees and the Bank jointly agree contribution levels. In most countries the Group expects to receive an economic benefit from any plan surpluses of plan assets compared to defined benefit obligations, typically by way of reduced future contributions. Given the broadly fully funded position and the investment strategy adopted in the Group's key funded defined benefit plans, any minimum funding requirements that may apply are not expected to place the Group under any material adverse cash strain in the short term. With reference to the Group's funding policy, the Group considers not re-claiming benefits paid from the Group's assets as an equivalent to making cash contributions into the external pension trusts during the year.

For post-retirement medical plans, the Group accrues for obligations over the period of employment and pays the benefits from Group assets when the benefits become due.

Actuarial Methodology and Assumptions

December 31 is the measurement date for all plans. All plans are valued by independent qualified actuaries using the projected unit credit method. A Group policy provides guidance to local actuaries to ensure consistency globally on setting actuarial assumptions which are finally determined by the Group's Pensions Operating Committee. Senior management of the Group is regularly informed of movements and changes in key actuarial assumptions.

The key actuarial assumptions applied in determining the defined benefit obligations at December 31 are presented below in the form of weighted averages.

	Dec 31, 2018				Dec 31, 2017			
	Germany	UK	U.S.[1]	Other	Germany	UK	U.S.[1]	Other
Discount rate (in %)	1.7 %	2.7 %	4.2 %	2.6 %	1.7 %	2.5 %	3.5 %	2.5 %
Rate of price inflation (in %)	1.6 %	3.5 %	2.2 %	1.9 %	1.8 %	3.5 %	2.2 %	2.0 %
Rate of nominal increase in future compensation levels (in %)	2.1 %	4.0 %	2.3 %	2.9 %	2.3 %	4.5 %	2.3 %	3.1 %
Rate of nominal increase for pensions in payment (in %)	1.5 %	3.3 %	2.2 %	1.0 %	1.7 %	3.3 %	2.2 %	1.1 %
Assumed life expectancy at age 65								
For a male aged 65 at measurement date	20.0	23.5	22.2	21.8	19.3	23.6	22.2	21.7
For a female aged 65 at measurement date	23.6	25.4	23.7	24.1	23.3	25.4	23.7	24.1
For a male aged 45 at measurement date	22.8	24.8	23.7	23.3	21.9	24.9	23.8	23.1
For a female aged 45 at measurement date	25.8	26.8	25.2	25.6	25.8	26.9	25.2	25.6
Mortality tables applied	Richttafeln Heubeck 2018G	SAPS (S2) Light with CMI 2017 projections	RP2014 White-collar with MP2018 projections	Country specific tables	Richttafeln Heubeck 2005G	SAPS (S1) Light with CMI 2016 projections	RP2014 White-collar with MP 2017 projections	Country specific tables

[1] Cash balance interest crediting rate in line with the 30-year US government bond yield.

For the Group's most significant plans in the key countries, the discount rate used at each measurement date is set based on a high quality corporate bond yield curve – derived based on bond universe information sourced from reputable third-party index and data providers and rating agencies – reflecting the timing, amount and currency of the future expected benefit payments for the respective plan. For longer durations where limited bond information is available, reasonable yield curve extrapolation methods are applied using respective actual swap rates and credit spread assumptions. Consistent discount rates are used across all plans in each currency zone, based on the assumption applicable for the Group's largest plan(s) in that zone. For plans in the other countries, the discount rate is based on high quality corporate or government bond yields applicable in the respective currency, as appropriate at each measurement date with a duration broadly consistent with the respective plan's obligations.

In 2017 the Group moved to a more standardized, simpler approach to set its discount rate used to value its defined benefit plans in the Eurozone; similar approaches are generally accepted and are already used for the Group's other major pension plans in the United Kingdom and the United States. The refinement resulted in no change in the discount rate and so no effect on the Group's Consolidated Statement of Comprehensive Income in 2017.

The price inflation assumptions in the eurozone and the United Kingdom are set with reference to market measures of inflation based on inflation swap rates in those markets at each measurement date. For other countries, the price inflation assumptions are typically based on long term forecasts by Consensus Economics Inc.

The assumptions for the increases in future compensation levels and for increases to pensions in payment are developed separately for each plan, where relevant. Each is set based on the price inflation assumption and reflecting the Group's reward structure or policies in each market, as well as relevant local statutory and plan-specific requirements.

Among other assumptions, mortality assumptions can be significant in measuring the Group's obligations under its defined benefit plans. These assumptions have been set in accordance with current best practice in the respective countries. Future potential improvements in longevity have been considered and included where appropriate.

The valuation of the defined benefit obligation for the German plans as of December 31, 2018 are based for the first time on the Heubeck 2018G mortality tables. The tables reflect the latest statistics of the statutory German social security pension system and of the Federal Statistical Office.

Reconciliation in Movement of Liabilities and Assets – Impact on Financial Statements

					2018
in € m.	Germany	UK	U.S.	Other	Total
Change in the present value of the defined benefit obligation:					
Balance, beginning of year	12,090	4,176	1,401	979	18,646
Defined benefit cost recognized in Profit & Loss					
Current service cost	204	30	17	45	296
Interest cost	203	104	49	23	379
Past service cost and gain or loss arising from settlements	(33)	18	0	(1)	(16)
Defined benefit cost recognized in Other Comprehensive Income					
Actuarial gain or loss arising from changes in financial assumptions	(135)	(187)	(89)	(23)	(434)
Actuarial gain or loss arising from changes in demographic assumptions	98[1]	(48)	(3)	(2)	45
Actuarial gain or loss arising from experience	(38)	(7)	11	4	(30)
Cash flow and other changes					
Contributions by plan participants	3	0	0	16	19
Benefits paid	(437)	(176)	(114)	(76)	(803)
Payments in respect to settlements	0	0	0	(11)	(11)
Acquisitions/Divestitures	(2)	0	0	0	(2)
Exchange rate changes	0	(42)	65	8	31
Other	0	0	0	0	0
Balance, end of year	11,953	3,868	1,337	962	18,120
thereof:					
Unfunded	0	10	193	112	315
Funded	11,953	3,858	1,144	850	17,805
Change in fair value of plan assets:					
Balance, beginning of year	11,003	5,202	1,091	915	18,211
Defined benefit cost recognized in Profit & Loss					
Interest income	187	130	38	20	375
Defined benefit cost recognized in Other Comprehensive Income					
Return from plan assets less interest income	(351)	(218)	(53)	(33)	(655)
Cash flow and other changes					
Contributions by plan participants	3	0	0	16	19
Contributions by the employer	473	0	52	33	558
Benefits paid[2]	(437)	(175)	(102)	(53)	(767)
Payments in respect to settlements	0	0	0	(12)	(12)
Acquisitions/Divestitures	(1)	0	0	(1)	(2)
Exchange rate changes	0	(53)	52	7	6
Other	0	0	0	0	0
Plan administration costs	0	(2)	(4)	0	(6)
Balance, end of year	10,877	4,884	1,074	892	17,727
Funded status, end of year	(1,076)	1,016	(263)	(70)	(393)
Change in irrecoverable surplus (asset ceiling)					
Balance, beginning of year	0	0	0	(44)	(44)
Interest cost	0	0	0	0	0
Changes in irrecoverable surplus	0	0	0	20	20
Exchange rate changes	0	0	0	(1)	(1)
Balance, end of year	0	0	0	(25)	(25)
Net asset (liability) recognized	(1,076)	1,016	(263)	(95)	(418)[3]

[1] Resulting predominantly from updated mortality assumptions (Heubeck 2018G instead of Heubeck 2005G)
[2] For funded plans only.
[3] Thereof € 1,097 million recognized in Other assets and € 1,515 million in Other liabilities.

in € m.	Germany	UK	U.S.	Other	2017 Total
Change in the present value of the defined benefit obligation:					
Balance, beginning of year	11,978	4,496	1,548	1,091	19,113
Defined benefit cost recognized in Profit & Loss					
Current service cost	213	34	21	50	318
Interest cost	202	114	56	25	397
Past service cost and gain or loss arising from settlements	34	4	0	(11)	27
Defined benefit cost recognized in Other Comprehensive Income					
Actuarial gain or loss arising from changes in financial assumptions	76	(43)	65	3	101
Actuarial gain or loss arising from changes in demographic assumptions	0	(16)	(6)	(11)	(33)
Actuarial gain or loss arising from experience	(3)	(17)	5	(9)	(24)
Cash flow and other changes					
Contributions by plan participants	3	0	0	15	18
Benefits paid	(413)	(245)	(99)	(83)	(840)
Payments in respect to settlements	0	0	0	(26)	(26)
Acquisitions/Divestitures	0	0	0	0	0
Exchange rate changes	0	(151)	(189)	(63)	(403)
Other	0	0	0	(2)	(2)
Balance, end of year	12,090	4,176	1,401	979	18,646
thereof:					
Unfunded	2	12	195	116	325
Funded	12,088	4,164	1,206	863	18,321
Change in fair value of plan assets:					
Balance, beginning of year	10,975	5,352	1,219	973	18,519
Defined benefit cost recognized in Profit & Loss					
Interest income	187	135	44	22	388
Defined benefit cost recognized in Other Comprehensive Income					
Return from plan assets less interest income	(187)	144	32	32	21
Cash flow and other changes					
Contributions by plan participants	3	0	0	15	18
Contributions by the employer	438	0	31	22	491
Benefits paid[1]	(413)	(244)	(86)	(63)	(806)
Payments in respect to settlements	0	0	0	(26)	(26)
Acquisitions/Divestitures	0	0	0	0	0
Exchange rate changes	0	(183)	(147)	(58)	(388)
Other	0	0	0	(1)	(1)
Plan administration costs	0	(2)	(2)	(1)	(5)
Balance, end of year	11,003	5,202	1,091	915	18,211
Funded status, end of year	(1,087)	1,026	(310)	(64)	(435)
Change in irrecoverable surplus (asset ceiling)					
Balance, beginning of year	0	0	0	0	0
Interest cost	0	0	0	0	0
Changes in irrecoverable surplus	0	0	0	(46)	(46)
Exchange rate changes	0	0	0	2	2
Balance, end of year	0	0	0	(44)	(44)
Net asset (liability) recognized	(1,087)	1,026	(310)	(108)	(479)[2]

[1] For funded plans only
[2] Thereof € 1,113 million recognized in Other assets and € 1,592 million in Other liabilities.

There are no reimbursement rights for the Group.

Investment Strategy

The Group's investment objective is to protect the Group from adverse impacts of its defined benefit pension plans on key financial metrics. In the past, the primary focus has been on protecting the plans' IFRS funded status in the case of adverse market scenarios. Recently there has been a shift in the investment strategy in selected markets to balance competing key financial metrics. Investment managers manage pension assets in line with investment mandates or guidelines as agreed with the pension plans' trustees and investment committees.

For key defined benefit plans for which the Bank aims to protect the IFRS funded status, the Group applies a liability driven investment (LDI) approach. Risks from mismatches between fluctuations in the present value of the defined benefit obligations and plan assets due to capital market movements are minimized, subject to balancing relevant trade-offs. This is achieved by allocating plan assets closely to the market risk factor exposures of the pension liability to interest rates, credit spreads and inflation. Thereby, plan assets broadly reflect the underlying risk profile and currency of the pension obligations. For pension plans where the LDI approach may impact adversely other key financial metrics, the Group deviates from this primary investment strategy. For example, in 2015, the Group started to adjust the investment strategy for the German main pension plan assets by reducing the interest rate and credit spread hedges. The Group closely monitors this divergence from the primary investment strategy and has put in place governance mechanisms to ensure a regular review of the deviation from the LDI approach.

Where the desired hedging level for market risks cannot be achieved with physical instruments (i.e. corporate and government bonds), derivatives are employed. Derivative overlays mainly include interest rate, inflation swaps and credit default swaps. Other instruments are also used, such as interest rate futures and options. In practice, a completely hedged approach is impractical, for instance because of insufficient market depth for ultra-long-term corporate bonds, as well as liquidity and cost considerations. Therefore, plan assets contain further asset categories to create long-term return enhancement and diversification benefits such as equity, real estate, high yield bonds or emerging markets bonds.

Plan asset allocation to key asset classes

The following table shows the asset allocation of the Group's funded defined benefit plans to key asset classes, i.e. exposures include physical securities in discretely managed portfolios and underlying asset allocations of any commingled funds used to invest plan assets.

Asset amounts in the following table include both "quoted" (i.e. Level 1 assets in accordance with IFRS 13 – amounts invested in markets where the fair value can be determined directly from prices which are quoted in active, liquid markets) and "other" (i.e. Level 2 and 3 assets in accordance with IFRS 13) assets.

	Dec 31, 2018					Dec 31, 2017				
in € m.	Germany	UK	U.S.	Other	Total	Germany	UK	U.S.	Other	Total
Cash and cash equivalents	1,138	715	(12)	77	1,918	1,260	419	26	74	1,779
Equity instruments[1]	1,148	571	107	60	1,886	1,265	582	118	68	2,033
Investment-grade bonds[2]										
Government	1,975	699	428	153	3,255	2,212	1,167	367	161	3,907
Non-government bonds	5,196	2,805	405	217	8,623	5,189	2,447	472	175	8,283
Non-investment-grade bonds										
Government	175	0	1	19	195	177	0	0	14	191
Non-government bonds	166	80	14	22	282	610	70	20	37	737
Structured products	39	6	52	16	113	41	402	51	26	520
Insurance	0	0	0	16	16	0	0	0	27	27
Alternatives										
Real estate	285	52	0	58	395	232	117	0	56	405
Commodities	53	0	0	0	53	48	24	0	0	72
Private equity	54	0	0	11	65	58	0	0	0	58
Other[3]	1,419	22	0	243	1,684	788	36	0	274	1,098
Derivatives (Market Value)										
Interest rate	(192)	129	13	(6)	(56)	(191)[4]	148	37	(4)	(10)
Credit	13	0	82	0	95	(155)	(1)	0	(1)	(157)
Inflation	(608)	(194)	0	5	(797)	(544)[4]	(210)	0	6	(748)
Foreign exchange	14	(1)	0	1	14	10	1	0	2	13
Other	2	0	(16)	0	(14)	3	0	0	0	3
Total fair value of plan assets	**10,877**	**4,884**	**1,074**	**892**	**17,727**	11,003	5,202	1,091	915	18,211

[1] Allocation of equity exposure is broadly in line with the typical index in the respective market, e.g. the equity portfolio's benchmark of the UK retirement benefit plans is the MSCI All Countries World Index.
[2] Investment-grade means BBB and above. Average credit rating exposure for the Group's main plans is around A.
[3] Amongst others this position contains commingled funds which could not be segregated into the other asset categories. In particular the increase from 2017 to 2018 is caused by such positions.
[4] Comparative 2017 figures have been changed retrospectively to be in line with the current assignment of assets to the derivative categories.

The following table sets out the Group's funded defined benefit plan assets only invested in "quoted" assets, i.e. Level 1 assets in accordance with IFRS 13.

	Dec 31, 2018					Dec 31, 2017				
in € m.	Germany	UK	U.S.	Other	Total	Germany	UK	U.S.	Other	Total
Cash and cash equivalents	1,162	30	(16)	40	1,216	1,251	22	24	28	1,325
Equity instruments[1]	1,015	571	107	49	1,742	1,154	582	118	58	1,912
Investment-grade bonds[2]										
Government	1,013	695	423	52	2,183	1,190	1,163	362	73	2,788
Non-government bonds	0	0	0	0	0	0	0	0	0	0
Non-investment-grade bonds										
Government	0	0	0	2	2	1	0	0	0	1
Non-government bonds	0	0	0	0	0	0	0	0	0	0
Structured products	0	0	0	0	0	0	0	0	0	0
Insurance	0	0	0	0	0	0	0	0	0	0
Alternatives										
Real estate	0	0	0	0	0	0	0	0	0	0
Commodities	0	0	0	0	0	0	0	0	0	0
Private equity	0	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	0	0
Derivatives (Market Value)										
Interest rate	0	0	(17)	0	(17)	1	0	6	0	7
Credit	0	0	0	0	0	0	(1)	0	0	(1)
Inflation	0	0	0	0	0	0	0	0	0	0
Foreign exchange	0	(1)	0	0	(1)	0	1	0	0	1
Other	2	0	0	0	2	3	0	0	0	3
Total fair value of quoted plan assets	**3,192**	**1,295**	**497**	**143**	**5,127**	3,600	1,767	510	159	6,036

[1] Allocation of equity exposure is broadly in line with the typical index in the respective market, e.g. the equity portfolio's benchmark of the UK retirement benefit plans is the MSCI All Countries World Index.
[2] Investment-grade means BBB and above. Average credit rating exposure for the Group's main plans is around A.

The following tables show the asset allocation of the "quoted" and "other" defined benefit plan assets by key geography in which they are invested.

							Dec 31, 2018
in € m.	Germany	United Kingdom	United States	Other Eurozone	Other developed countries	Emerging markets	Total
Cash and cash equivalents	141	701	65	953	29	29	1,918
Equity instruments	252	108	708	360	363	95	1,886
Government bonds (investment-grade and above)	870	574	474	650	249	438	3,255
Government bonds (non-investment-grade)	0	0	0	4	24	167	195
Non-government bonds (investment-grade and above)	718	2,129	2,023	2,984[1]	657	112	8,623
Non-government bonds (non-investment-grade)	4	65	13	186	5	9	282
Structured products	38	21	52	2	0	0	113
Subtotal	2,023	3,598	3,335	5,139	1,327	850	16,272
Share (in %)	12	22	20	32	8	5	100
Other asset categories							1,455
Fair value of plan assets							17,727

[1] Majority of this amount relates to bonds of French, Dutch and Italian corporate bonds.

							Dec 31, 2017
in € m.	Germany	United Kingdom	United States	Other Eurozone	Other developed countries	Emerging markets	Total
Cash and cash equivalents	294	126	96	1,204	16	43	1,779
Equity instruments	349	83	802	317	336	146	2,033
Government bonds (investment-grade and above)	1,057	1,087	397	627	253	486	3,907
Government bonds (non-investment-grade)	0	0	0	9	23	159	191
Non-government bonds (investment-grade and above)	575	1,890	2,196	2,607[1]	906	109	8,283
Non-government bonds (non-investment-grade)	4	44	20	640	19	10	737
Structured products	41	422	51	1	5	0	520
Subtotal	2,320	3,652	3,562	5,405	1,558	953	17,450
Share (in %)	13	21	20	31	9	5	100
Other asset categories							761
Fair value of plan assets							18,211

[1] Majority of this amount relates to bonds of French, Dutch and Italian corporate bonds.

Plan assets include derivative transactions with Group entities with a negative market value of around € 692 million and € 737 million at December 31, 2018 and December 31, 2017, respectively. There is neither a material amount of securities issued by the Group nor other claims on Group assets included in the fair value of plan assets. The plan assets do not include any real estate which is used by the Group.

In addition, the Group estimates and allows for uncertain income tax positions which may have an impact on the Group's plan assets. Significant judgment is required in making these estimates and the Group's final net liabilities may ultimately be materially different.

Key Risk Sensitivities

The Group's defined benefit obligations are sensitive to changes in capital market conditions and actuarial assumptions. Sensitivities to capital market movements and key assumption changes are presented in the following table. Each market risk factor or assumption is changed in isolation. Sensitivities of the defined benefit obligations are approximated using geometric extrapolation methods based on plan durations for the respective assumption. Duration is a risk measure that indicates the broad sensitivity of the obligations to a change in an underlying assumption and provides a reasonable approximation for small to moderate changes in those assumptions.

For example, the discount rate duration is derived from the change in the defined benefit obligation to a change in the discount rate based on information provided by the local actuaries of the respective plans. The resulting duration is used to estimate the remeasurement liability loss or gain from changes in the discount rate. For other assumptions, a similar approach is used to derive the respective sensitivity results.

For defined benefit pension plans, changes in capital market conditions will impact the plan obligations via actuarial assumptions – mainly discount rate and price inflation rate – as well as the plan assets. Where the Group applies a LDI approach, the Bank's overall exposure to changes is reduced. Consequently, to aid understanding of the Group's risk exposures related to key capital market movements, the net impact of the change in the defined benefit obligations and plan assets due to a change of the related market risk factor or underlying actuarial assumption is shown; for sensitivities to changes in actuarial assumptions that do not impact the plan assets, only the impact on the defined benefit obligations is shown.

Asset-related sensitivities are derived for the Group's major plans by using risk sensitivity factors determined by the Group's Market Risk Management function. These sensitivities are calculated based on information provided by the plans' investment managers and extrapolated linearly to reflect the approximate change of the plan assets' market value in case of a change in the underlying risk factor.

The sensitivities illustrate plausible variations over time in capital market movements and key actuarial assumptions. The Group is not in a position to provide a view on the likelihood of these capital market or assumption changes. While these sensitivities illustrate the overall impact on the funded status of the changes shown, the significance of the impact and the range of reasonable possible alternative assumptions may differ between the different plans that comprise the aggregated results. Even though plan assets and plan obligations are sensitive to similar risk factors, actual changes in plan assets and obligations may not fully offset each other due to imperfect correlations between market risk factors and actuarial assumptions. Caution should be used when extrapolating these sensitivities due to non-linear effects that changes in capital market conditions and key actuarial assumptions may have on the overall funded status. Any management actions that may be taken to mitigate the inherent risks in the post-employment defined benefit plans are not reflected in these sensitivities.

	Dec 31, 2018				Dec 31, 2017			
in € m.	Germany	UK	U.S.	Other	Germany	UK	U.S.	Other
Discount rate (–50 bp):								
(Increase) in DBO	(840)	(430)	(40)	(50)	(875)	(465)	(40)	(55)
Expected increase in plan assets[1]	235	435	35	20	215	505	35	25
Expected net impact on funded status (de-) increase	**(605)**	**5**	**(5)**	**(30)**	(660)	40	(5)	(30)
Discount rate (+50 bp):								
Decrease in DBO	785	385	25	50	810	420	30	50
Expected (decrease) in plan assets[1]	(235)	(435)	(35)	(20)	(215)	(505)	(35)	(25)
Expected net impact on funded status (de-) increase	**550**	**(50)**	**(10)**	**30**	595	(85)	(5)	25
Credit spread (–50 bp):								
(Increase) in DBO	(840)	(430)	(75)	(55)	(875)	(465)	(85)	(60)
Expected increase in plan assets[1]	220	125	20	10	150	125	20	10
Expected net impact on funded status (de-) increase	**(620)**	**(305)**	**(55)**	**(45)**	(725)	(340)	(65)	(50)
Credit spread (+50 bp):								
Decrease in DBO	785	385	70	50	810	420	80	55
Expected (decrease) in plan assets[1]	(220)	(125)	(20)	(10)	(150)	(125)	(20)	(10)
Expected net impact on funded status (de-) increase	**565**	**260**	**50**	**40**	660	295	60	45
Rate of price inflation (–50 bp):[2]								
Decrease in DBO	335	325	0	20	345	345	0	20
Expected (decrease) in plan assets[1]	(190)	(270)	0	(10)	(180)	(310)	0	(10)
Expected net impact on funded status (de-) increase	**145**	**55**	**0**	**10**	165	35	0	10
Rate of price inflation (+50 bp):[2]								
(Increase) in DBO	(345)	(360)	0	(20)	(360)	(375)	0	(25)
Expected increase in plan assets[1]	190	270	0	10	180	310	0	10
Expected net impact on funded status (de-) increase	**(155)**	**(90)**	**0**	**(10)**	(180)	(65)	0	(15)
Rate of real increase in future compensation levels (–50 bp):								
Decrease in DBO, net impact on funded status	60	10	0	10	70	15	0	15
Rate of real increase in future compensation levels (+50 bp):								
(Increase) in DBO, net impact on funded status	(60)	(10)	0	(15)	(70)	(15)	0	(15)
Longevity improvements by 10 %:[3]								
(Increase) in DBO, net impact on funded status	(295)	(110)	(25)	(10)	(305)	(130)	(25)	(15)

[1] Expected changes in the fair value of plan assets contain the simulated impact from the biggest plans in Germany, the UK, the U.S., Channel Islands, Switzerland and Belgium which cover over 99 % of the total fair value of plan assets. The fair value of plan assets for other plans is assumed to be unchanged for this presentation.
[2] Incorporates sensitivity to changes in pension benefits to the extent linked to the price inflation assumption.
[3] Estimated to be equivalent to an increase of around 1 year in overall life expectancy.

Expected cash flows

The following table shows expected cash flows for post-employment benefits in 2019, including contributions to the Group's external pension trusts in respect of funded plans, direct payment to beneficiaries in respect of unfunded plans, as well as contributions to defined contribution plans.

	2019
in € m.	Total
Expected contributions to	
Defined benefit plan assets	500
BVV	65
Pension fund for Postbank's postal civil servants	85
Other defined contribution plans	280
Expected benefit payments for unfunded defined benefit plans	30
Expected total cash flow related to post-employment benefits	960

Expense of employee benefits

The following table presents a breakdown of specific expenses according to the requirements of IAS 19 and IFRS 2.

in € m.	2018	2017	2016
Expenses for defined benefit plans:			
Service cost	280	345	272
Net interest cost (income)	4	9	(11)
Total expenses defined benefit plans	**284**	354	261
Expenses for defined contribution plans:			
BVV	62	66	50
Pension fund for Postbank's postal civil servants	88	93	95
Other defined contribution plans	271	281	284
Total expenses for defined contribution plans	**421**	440	429
Total expenses for post-employment benefit plans	**705**	794	690
Employer contributions to mandatory German social security pension plan	**236**	243	237
Expenses for share-based payments, equity settled[1]	560	535	620
Expenses for share-based payments, cash settled[1]	1	22	3
Expenses for cash retention plans[1]	481	363	487
Expenses for severance payments[2]	137	94	149

[1] Including expenses for new hire awards and the acceleration of expenses not yet amortized due to the discontinuation of employment including those amounts which are recognized as part of the Group's restructuring expenses.
[2] Excluding the acceleration of expenses for deferred compensation awards not yet amortized.

36 – Income Taxes

in € m.	2018	2017	2016
Current tax expense (benefit):			
Tax expense (benefit) for current year	733	874	881
Adjustments for prior years	(20)	(145)	(23)
Total current tax expense (benefit)	**713**	729	858
Deferred tax expense (benefit):			
Origination and reversal of temporary difference, unused tax losses and tax credits	316	(113)	(276)
Effect of changes in tax law and/or tax rate	(6)	1,437	(3)
Adjustments for prior years	(34)	(90)	(33)
Total deferred tax expense (benefit)	**276**	1,234	(312)
Total income tax expense (benefit)	**989**	1,963	546

Income tax expense in 2016 includes policyholder tax attributable to policyholder earnings amounting to an income tax expense of € 23 million.

Total current tax expense includes benefits from previously unrecognized tax losses, tax credits and deductible temporary differences, which reduced the current tax by € 5 million in 2017 and by € 7 million in 2016.

Total deferred tax expense includes benefits from previously unrecognized tax losses (tax credits/deductible temporary differences) and the reversal of previous write-downs of deferred tax assets and expenses arising from write-downs of deferred tax assets, which increased the deferred tax expense by € 253 million in 2018 and by € 163 million in 2017. In 2016 these effects increased the deferred tax benefit by € 38 million.

Difference between applying German statutory (domestic) income tax rate and actual income tax expense/(benefit)

in € m.	2018	2017	2016
Expected tax expense (benefit) at domestic income tax rate of 31.3% (31.3% for 2017 and 31.3% for 2016)	**416**	384	(254)
Foreign rate differential	8	(37)	(38)
Tax-exempt gains on securities and other income	(209)	(431)	(599)
Loss (income) on equity method investments	(19)	(21)	(19)
Nondeductible expenses	340	540	1,074
Impairments of goodwill	0	0	250
Changes in recognition and measurement of deferred tax assets[1]	253	159	(45)
Effect of changes in tax law and/or tax rate	(6)	1,437	(3)
Effect related to share-based payments	133	14	66
Effect of policyholder tax	0	0	23
Other[1]	73	(82)	91
Actual income tax expense (benefit)	**989**	1,963	546

[1] Current and deferred tax expense/(benefit) relating to prior years are mainly reflected in the line items "Changes in recognition and measurement of deferred tax assets" and "Other".

The Group is under continuous examinations by tax authorities in various jurisdictions. “Other” in the preceding table includes the effects of these examinations by the tax authorities.

The domestic income tax rate, including corporate tax, solidarity surcharge, and trade tax, used for calculating deferred tax assets and liabilities was 31.3 % for 2018, 2017 and 2016.

Income taxes charged or credited to equity (other comprehensive income/additional paid in capital)

in € m.	2018	2017	2016
Actuarial gains/losses related to defined benefit plans	**18**	(23)	344
Net fair value gains (losses) attributable to credit risk related to financial liabilities designated as at fair value through profit or loss	**(8)**	0	0
Financial assets available for sale:			
Unrealized net gains/losses arising during the period	0	4	20
Net gains/losses reclassified to profit or loss	0	99	81
Financial assets mandatory at fair value through other comprehensive income:			
Unrealized net gains/losses arising during the period	48	0	0
Realized net gains/losses arising during the period (reclassified to profit or loss)	86	0	0
Derivatives hedging variability of cash flows:			
Unrealized net gains/losses arising during the period	1	4	(14)
Net gains/losses reclassified to profit or loss	0	42	1
Other equity movement:			
Unrealized net gains/losses arising during the period	91	2	(71)
Net gains/losses reclassified to profit or loss	2	(5)	100
Income taxes (charged) credited to other comprehensive income	**238**	123	461
Other income taxes (charged) credited to equity	**1**	73	93

Major components of the Group’s gross deferred tax assets and liabilities

in € m.	Dec 31, 2018[1]	Dec 31, 2017[1]
Deferred tax assets:		
Unused tax losses	2,934	2,985
Unused tax credits	160	387
Deductible temporary differences:		
Trading activities, including derivatives	2,986	3,514
Employee benefits, including equity settled share based payments	2,140	2,208
Loans and borrowings, including allowance for loans	795	1,015
Fair value OCI (IFRS 9)	33	5
Intangible Assets	119	119
Accrued interest expense	1,133	180
Other assets	886	759
Other provisions	180	271
Other liabilities	21	42
Total deferred tax assets pre offsetting	**11,387**	11,485
Deferred tax liabilities:		
Taxable temporary differences:		
Trading activities, including derivatives	3,038	3,794
Employee benefits, including equity settled share based payments	312	266
Loans and borrowings, including allowance for loans	345	144
Fair value OCI (IFRS 9)	52	89
Intangible Assets	453	336
Other assets	344	270
Other provisions	85	83
Other liabilities	40	50
Total deferred tax liabilities pre offsetting	**4,669**	5,032

[1] Following the IFRS 9 introduction the presentation was changed and a more granular break down related to the type of temporary differences is provided. Comparatives were adjusted accordingly.

Deferred tax assets and liabilities, after offsetting

in € m.	Dec 31, 2018	Dec 31, 2017
Presented as deferred tax assets	7,230	6,799
Presented as deferred tax liabilities	512	346
Net deferred tax assets	**6,718**	6,453

The change in the balance of deferred tax assets and deferred tax liabilities does not equal the deferred tax expense/(benefit). This is due to (1) deferred taxes that are booked directly to equity, (2) the effects of exchange rate changes on tax assets and liabilities denominated in currencies other than euro, (3) the acquisition and disposal of entities as part of ordinary activities and (4) the reclassification of deferred tax assets and liabilities which are presented on the face of the balance sheet as components of other assets and liabilities.

Items for which no deferred tax assets were recognized

in € m.	Dec 31, 2018[1]	Dec 31, 2017[1]
Deductible temporary differences	**(9)**	(34)
Not expiring	(5,738)	(4,875)
Expiring in subsequent period	(52)	(19)
Expiring after subsequent period	(289)	(450)
Unused tax losses	**(6,079)**	(5,344)
Expiring after subsequent period	0	(11)
Unused tax credits	**(1)**	(12)

[1] Amounts in the table refer to deductible temporary differences, unused tax losses and tax credits for federal income tax purposes.

Deferred tax assets were not recognized on these items because it is not probable that future taxable profit will be available against which the unused tax losses, unused tax credits and deductible temporary differences can be utilized.

As of December 31, 2018 and December 31, 2017, the Group recognized deferred tax assets of € 6.5 billion and € 5.9 billion, respectively, that exceed deferred tax liabilities in entities which have suffered a loss in either the current or preceding period. This is based on management's assessment that it is probable that the respective entities will have taxable profits against which the unused tax losses, unused tax credits and deductible temporary differences can be utilized. Generally, in determining the amounts of deferred tax assets to be recognized, management uses historical profitability information and, if relevant, forecasted operating results, based upon approved business plans, including a review of the eligible carry-forward periods, tax planning opportunities and other relevant considerations.

As of December 31, 2018 and December 31, 2017, the Group had temporary differences associated with the Group's parent company's investments in subsidiaries, branches and associates and interests in joint ventures of € 27 million and € 72 million respectively, in respect of which no deferred tax liabilities were recognized.

37 – Derivatives

Derivative financial instruments and hedging activities

Derivative contracts used by the Group include swaps, futures, forwards, options and other similar types of contracts. In the normal course of business, the Group enters into a variety of derivative transactions for sales, market-making and risk management purposes. The Group's objectives in using derivative instruments are to meet customers' risk management needs and to manage the Group's exposure to risks.

In accordance with the Group's accounting policy relating to derivatives and hedge accounting as described in Note 1 "Significant Accounting Policies and Critical Accounting Estimates", all derivatives are carried at fair value in the balance sheet regardless of whether they are held for trading or non-trading purposes.

Derivatives held for sales and market-making purposes

Sales and market-making

The majority of the Group's derivatives transactions relate to sales and market-making activities. Sales activities include the structuring and marketing of derivative products to customers to enable them to take, transfer, modify or reduce current or expected risks. Market-making involves quoting bid and offer prices to other market participants, enabling revenue to be generated based on spreads and volume.

Risk management

The Group uses derivatives in order to reduce its exposure to market risks as part of its asset and liability management. This is achieved by entering into derivatives that hedge specific portfolios of fixed rate financial instruments and forecast transactions as well as strategic hedging against overall balance sheet exposures. The Group actively manages interest rate risk through, among other things, the use of derivative contracts. Utilization of derivative financial instruments is modified from time to time within prescribed limits in response to changing market conditions, as well as to changes in the characteristics and mix of the related assets and liabilities.

Derivatives qualifying for hedge accounting

The Group applies hedge accounting if derivatives meet the specific criteria described in Note 1 “Significant Accounting Policies and Critical Accounting Estimates”.

In fair value hedge relationship, the Group uses primarily interest rate swaps and options, in order to protect itself against movements in the fair value of fixed-rate financial instruments due to movements in market interest rates. In a cash flow hedge relationship, the Group uses interest rate swaps in order to protect itself against exposure to variability in interest rates. The Group enters into foreign exchange forwards and swaps for hedges of translation adjustments resulting from translating the financial statements of net investments in foreign operations into the reporting currency of the parent at period end spot rates.

The Group assesses and measures hedge effectiveness of a hedging relationship based on the change in the fair value or cash flows of the derivative hedging instrument relative to the change in the fair value or cash flows of the hedged item attributable to the hedged risk. Potential sources of ineffectiveness can be attributed to differences between hedging instruments and hedged items:

- Mismatches in the terms of hedged items and hedging instruments, for example the frequency and timing of when interest rates are reset, frequency of payment and callable features.
- Difference in the discounting rate applied to the hedged item and the hedging instrument, taking into consideration differences in the reset frequency of the hedged item and hedging instrument.
- Derivatives used as hedging instrument with a non-zero fair value at inception date of the hedging relationship, resulting in mismatch in terms with the hedged item.

Interest rate risk

The Group uses interest rate swaps and options to manage its exposure to interest rate risk by modifying the re-pricing characteristics of existing and/or forecasted assets and liabilities, including funding and investment activities. The interest rate swaps and options are designated in either a fair value hedge or a cash flow hedge. For fair value hedges, the Group uses interest rate swaps and options contracts to manage the fair value movements of fixed rate financial instruments due to changes in benchmark interest. For cash flow hedges, we use interest rate swaps to manage the exposure to cash flow variability of our variable rate instruments as a result of changes in benchmark interest rates.

The Group manages its interest rate risk exposure on portfolio basis with frequent changes in the portfolio due to the origination of new loans and bonds, repayments of existing loans and bonds, issuance of new funding liabilities and repayment of existing funding liabilities. Accordingly, a dynamic hedging accounting approach is adopted for the portfolio, in which individual hedge relationships are designated and de-designated on a more frequent basis (e.g. on a monthly basis).

Foreign exchange risk

The Group manages its foreign currency risk (including U.S. dollar and British pound) from investments in foreign operation through net investment hedges using a combination of foreign exchange forwards and swaps as hedging instruments.

As the investments in foreign operations are only hedged to the extent of the notional amount of the hedging derivative instrument the Group generally does not expect to incur significant ineffectiveness on hedges of net investments in foreign operations.

Fair value hedge accounting

Derivatives held as fair value hedges

	Dec 31, 2018			2018	Dec 31, 2017	
in € m.	Assets	Liabilities	Nominal amount	Fair Value changes used for hedge effectiveness	Assets	Liabilities
Derivatives held as fair value hedges	5,462	975	156,025	(557)	5,936	562

	2018
in € m.	Hedge ineffectiveness
Result of fair value hedges	37

Financial instruments designated as fair value hedges

					Dec 31, 2018		2018
	Carrying amount of Financial instruments designated as fair value hedges		Accumulated amount of fair value hedge adjustments - Total		Accumulated amount of fair value hedge adjustments - Terminated hedge relationships		Fair Value changes used for hedge effectiveness
in € m.	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities	
Financial assets at fair value through other comprehensive income	16,900	0	326	0	(35)	0	(31)
Loans at amortized cost	8,794	0	59	0	1	0	118
Long-term debt	0	87,356	0	2,292	0	369	506
Other Assets/ Liabilities	0	0	0	0	0	0	0

For the years ended December 31, 2018, 2017 and 2016, a loss of € 0.6 billion, a loss of € 1.6 billion and a loss of € 0.6 billion, respectively, were recognized on the hedging instruments. For the same periods, the results on the hedged items, which were attributable to the hedged risk, were a gain of € 0.6 billion, a gain of € 1.3 billion and a gain of € 1.0 billion.

Cash flow hedge accounting

Derivatives held as cash flow hedges

	Dec 31, 2018			2018	Dec 31, 2017	
in € m.	Assets	Liabilities	Nominal amount	Fair Value changes used for hedge effectiveness	Assets	Liabilities
Derivatives held as cash flow hedges	29	1	3,689	(0)	37	3

Periods when hedged cash flows are expected to occur and when they are expected to affect the income statement

in € m.	Within 1 year	1–3 years	3–5 years	Over 5 years
As of December 31, 2017				
Cash inflows from assets	28	18	0	0
Cash outflows from liabilities	0	0	13	0
Net cash flows 2017	28	18	(13)	0

Cash flow hedge balances

in € m.	Dec 31, 2018	Dec 31, 2017	Dec 31, 2016
Reported in Equity[1]	25	28	198
thereof relates to terminated programs	0	0	0
Gains (losses) posted to equity for the year ended	(3)	(34)	62
Gains (losses) removed from equity for the year ended	0	136	2
thereof relates to terminated programs	0	0	0
Changes of hedged item's value used for hedge effectiveness	0	0	0
Ineffectiveness recorded within P&L	0	0	(17)

[1] Reported in equity refers to accumulated other comprehensive income as presented in the consolidated balance sheet.

As of December 31, 2018 the longest term cash flow hedge matures in 2022.

The financial instruments designated as cash flow hedges are recognized as Loans at amortized cost in the Group's consolidated balance sheet.

Net investment hedge accounting

Derivatives held as net investment hedges

	Dec 31, 2018			2018	Dec 31, 2017	
in € m.	Assets	Liabilities	Nominal amount	Fair Value changes used for hedge effectiveness	Assets	Liabilities
Derivatives held as net investment hedges	718	1,710	43,456	(1,380)	612	904

	2018	
in € m.	Fair value changes recognised in Equity[1]	Hedge ineffectiveness
Result of net investment hedges	1,742	(345)

[1] Reported in equity refers to accumulated other comprehensive income as presented in the consolidated balance sheet

For the years ended December 31, 2018, 2017 and 2016, losses of € 345 million, € 348 million and € 437 million, respectively, were recognized due to hedge ineffectiveness which includes the forward point element of the hedging instruments.

Profile of derivatives held as net investment hedges

in € m.	Within 1 year	1–3 years	3–5 years	Over 5 years
As of December 31, 2018				
Nominal amount Foreign exchange forwards	28,808	110	13	0
Nominal amount Foreign exchange swaps	3,972	5,601	1,982	2,970
Total	32,780	5,711	1,995	2,970

The Group uses a combination a rolling foreign exchange forward strategy and a static foreign currency swap hedging strategy. For the year ended December 31, 2018 the average foreign currency rate for the Group's foreign currency Euro/USD swap portfolio was 0.82.

38 – Related Party Transactions

Parties are considered to be related if one party has the ability to directly or indirectly control the other party or exercise significant influence over the other party in making financial or operational decisions. The Group's related parties include:

- key management personnel, close family members of key management personnel and entities which are controlled, significantly influenced by, or for which significant voting power is held by key management personnel or their close family members,
- subsidiaries, joint ventures and associates and their respective subsidiaries, and
- post-employment benefit plans for the benefit of Deutsche Bank employees.

Transactions with Key Management Personnel

Key management personnel are those persons having authority and responsibility for planning, directing and controlling the activities of Deutsche Bank, directly or indirectly. The Group considers the members of the Management Board and of the Supervisory Board of the parent company to constitute key management personnel for purposes of IAS 24.

Compensation expense of key management personnel

in € m.	2018	2017	2016
Short-term employee benefits	41	39	40
Post-employment benefits	10	10	9
Other long-term benefits	2	7	7
Termination benefits	32	3	0
Share-based payment	2	22	12
Total	**87**	81	68

The above table does not contain compensation that employee representatives and former board members on the Supervisory Board have received. The aggregated compensation paid to such members for their services as employees of Deutsche Bank or status as former employees (retirement, pension and deferred compensation) amounted to € 1.1 million as of December 31, 2018, € 1.1 million as of December 31, 2017 and € 1.1 million as of December 31, 2016.

Among the Group's transactions with key management personnel as of December 31, 2018 were loans and commitments of € 45 million and deposits of € 34 million. As of December 31, 2017, the Group's transactions with key management personnel were loans and commitments of € 48 million and deposits of € 123 million.

In addition, the Group provides banking services, such as payment and account services as well as investment advice, to key management personnel and their close family members.

Transactions with Subsidiaries, Joint Ventures and Associates

Transactions between Deutsche Bank AG and its subsidiaries meet the definition of related party transactions. If these transactions are eliminated on consolidation, they are not disclosed as related party transactions. Transactions between the Group and its associated companies and joint ventures and their respective subsidiaries also qualify as related party transactions.

Transactions for subsidiaries, joint ventures and associates are presented combined in below table as these are not material individually.

Loans

in € m.	2018	2017
Loans outstanding, beginning of year	**256**	297
Movement in loans during the period[1]	(21)	(26)
Changes in the group of consolidated companies	0	(1)
Exchange rate changes/other	(7)	(15)
Loans outstanding, end of year[2]	**228**	256
Other credit risk related transactions:		
Allowance for loan losses	0	0
Provision for loan losses	0	0
Guarantees and commitments	3	9

[1] Net impact of loans issued and loans repayment during the year is shown as "Movement in loans during the period".
[2] Loans past due were € 0 million as of December 31, 2018 and € 0 million as of December 31, 2017. For the total loans the Group held collateral of € 14 million and € 14 million as of December 31, 2018 and December 31, 2017, respectively.

Deposits

in € m.	2018	2017
Deposits outstanding, beginning of year	**67**	87
Movement in deposits during the period[1]	2	(15)
Changes in the group of consolidated companies	0	(0)
Exchange rate changes/other	(0)	(4)
Deposits outstanding, end of year	**68**	67

[1] Net impact of deposits received and deposits repaid during the year is shown as "Movement in deposits during the period".

Other Transactions

Trading assets and positive market values from derivative financial transactions with associated companies amounted to € 2 million as of December 31, 2018 and € 6 million as of December 31, 2017. Trading liabilities and negative market values from derivative financial transactions with associated companies amounted to € 0 million as of December 31, 2018 and € 0 million as of December 31, 2017.

Other transactions with related parties also reflected the following:

TradeWeb Markets: In the first quarter 2018, the Group ceased to have significant influence over its equity method investment in TradeWeb Markets LLC and recognized a remeasurement gain of € 84 million equal to the difference between the fair value and the carrying amount of the investment.

Transactions with Pension Plans

Under IFRS, certain post-employment benefit plans are considered related parties. The Group has business relationships with a number of its pension plans pursuant to which it provides financial services to these plans, including investment management services. The Group's pension funds may hold or trade Deutsche Bank shares or securities.

Transactions with related party pension plans

in € m.	2018	2017
Equity shares issued by the Group held in plan assets	1	0
Other assets	0	0
Fees paid from plan assets to asset managers of the Group	24	25
Market value of derivatives with a counterparty of the Group	(692)	(737)
Notional amount of derivatives with a counterparty of the Group	7,325	10,150

39 – Information on Subsidiaries

Composition of the Group

Deutsche Bank AG is the direct or indirect holding company for the Group's subsidiaries.

The Group consists of 707 (2017: 845) consolidated entities, thereof 251 (2017: 305) consolidated structured entities. 506 (2017: 612) of the entities controlled by the Group are directly or indirectly held by the Group at 100 % of the ownership interests (share of capital). Third parties also hold ownership interests in 201 (2017: 233) of the consolidated entities (noncontrolling interests). As of December 31, 2017 and 2018, one subsidiary has material noncontrolling interests. Noncontrolling interests for all other subsidiaries are neither individually nor cumulatively material to the Group.

Subsidiaries with significant non-controlling interests

	Dec 31, 2018	Dec 31, 2017
DWS Group GmbH & Co. KGaA		
Proportion of ownership interests and voting rights held by non-controlling interests	20.51 %	0 %
Place of business	Global	Global

in € m	Dec 31, 2018	Dec 31, 2017
Net income attributable to non-controlling interests	58	0
Accumulated non-controlling interests of the subsidiary	1,355	0
Dividends paid to non-controlling interests	0	0
Summarized financial information:		
Total assets	10,694	11,226
Total liabilities	4,155	4,860
Total net revenues	2,259	2,509
Net income (loss)	391	634
Total comprehensive income (loss), net of tax	589	604

Significant restrictions to access or use the Group's assets

Statutory, contractual or regulatory requirements as well as protective rights of noncontrolling interests might restrict the ability of the Group to access and transfer assets freely to or from other entities within the Group and to settle liabilities of the Group.

Since the Group did not have any material noncontrolling interests at the balance sheet date, any protective rights associated with these did not give rise to significant restrictions.

The following restrictions impact the Group's ability to use assets:

- The Group has pledged assets to collateralize its obligations under repurchase agreements, securities financing transactions, collateralized loan obligations and for margining purposes for OTC derivative liabilities.
- The assets of consolidated structured entities are held for the benefit of the parties that have bought the notes issued by these entities.
- Regulatory and central bank requirements or local corporate laws may restrict the Group's ability to transfer assets to or from other entities within the Group in certain jurisdictions.

Restricted assets

in € m.	Dec 31, 2018 Total assets	Dec 31, 2018 Restricted assets	Dec 31, 2017 Total assets	Dec 31, 2017 Restricted assets
Interest-earning deposits with banks	176,022	188	210,481	772
Financial assets at fair value through profit or loss	573,344	48,320	636,970	58,210
Financial assets available for sale	N/A	N/A	49,397	9,915
Financial assets at fair value through other comprehensive income	51,182	4,375	N/A	N/A
Loans at amortized cost	400,297	76,573	401,699	71,971
Other	147,293	1,991	176,186	13,594
Total	**1,348,137**	**131,447**	1,474,732	154,462

The table above excludes assets that are not encumbered at an individual entity level but which may be subject to restrictions in terms of their transferability within the Group. Such restrictions may be based on local connected lending requirements or similar regulatory restrictions. In this situation, it is not feasible to identify individual balance sheet items that cannot be transferred. This is also the case for regulatory minimum liquidity requirements. The Group identifies the volume of liquidity reserves in excess of local stress liquidity outflows. The aggregate amount of such liquidity reserves that are considered restricted for this purpose is € 34.9 billion as of December 31, 2018 (as of December 31, 2017: € 23.5 billion).

40 – Structured Entities

Nature, purpose and extent of the Group's interests in structured entities

The Group engages in various business activities with structured entities which are designed to achieve a specific business purpose. A structured entity is one that has been set up so that any voting rights or similar rights are not the dominant factor in deciding who controls the entity. An example is when voting rights relate only to administrative tasks and the relevant activities are directed by contractual arrangements.

A structured entity often has some or all of the following features or attributes:

- Restricted activities;
- A narrow and well defined objective;
- Insufficient equity to permit the structured entity to finance its activities without subordinated financial support;
- Financing in the form of multiple contractually linked instruments to investors that create concentrations of credit or other risks (tranches).

The principal uses of structured entities are to provide clients with access to specific portfolios of assets and to provide market liquidity for clients through securitizing financial assets. Structured entities may be established as corporations, trusts or partnerships. Structured entities generally finance the purchase of assets by issuing debt and equity securities that are collateralized by and/or indexed to the assets held by the structured entities. The debt and equity securities issued by structured entities may include tranches with varying levels of subordination.

Structured entities are consolidated when the substance of the relationship between the Group and the structured entities indicate that the structured entities are controlled by the Group, as discussed in Note 1 "Significant Accounting Policies and Critical Accounting Estimates".

Consolidated structured entities

The Group has contractual arrangements which may require it to provide financial support to the following types of consolidated structured entities.

Securitization vehicles

The Group uses securitization vehicles for funding purchase of diversified pool of assets. The Group provides financial support to these entities in the form of liquidity facility. As of December 31, 2018, and December 31, 2017, there were no outstanding loan commitments to these entities.

Funds

The Group may provide funding and liquidity facility or guarantees to funds consolidated by the group. As of December 31, 2018 and December 31, 2017, the notional value of the liquidity facilities and guarantees provided by the group to such funds was € 3.0 billion and € 7.2 billion, respectively.

Unconsolidated structured entities

These are entities which are not consolidated because the Group does not control them through voting rights, contract, funding agreements, or other means. The extent of the Group's interests to unconsolidated structured entities will vary depending on the type of structured entities.

Below is a description of the Group's involvements in unconsolidated structured entities by type.

Repackaging and investment entities

Repackaging and investment entities are established to meet clients' investment needs through the combination of securities and derivatives. These entities are not consolidated by the Group because the Group does not have power to influence the returns obtained from the entities. These entities are usually set up to provide a certain investment return pre-agreed with the investor, and the Group is not able to change the investment strategy or return during the life of the transaction.

Third party funding entities

The Group provides funding to structured entities that hold a variety of assets. These entities may take the form of funding entities, trusts and private investment companies. The funding is collateralized by the asset in the structured entities. The group's involvement involves predominantly both lending and loan commitments.

The vehicles used in these transactions are controlled by the borrowers where the borrowers have the ability to decide whether to post additional margin or collateral in respect of the financing. In such cases, where borrowers can decide to continue or terminate the financing, the borrowers will consolidate the vehicle.

Securitization Vehicles

The Group establishes securitization vehicles which purchase diversified pools of assets, including fixed income securities, corporate loans, and asset-backed securities (predominantly commercial and residential mortgage-backed securities and credit card receivables). The vehicles fund these purchases by issuing multiple tranches of debt and equity securities, the repayment of which is linked to the performance of the assets in the vehicles.

The Group often transfers assets to these securitization vehicles and provides financial support to these entities in the form of liquidity facilities.

The Group also invests and provides liquidity facilities to third party sponsored securitization vehicles.

The securitization vehicles that are not consolidated into the Group are those where the Group does not hold the power or ability to unilaterally remove the servicer or special servicer who has been delegated power over the activities of the entity.

Funds

The Group establishes structured entities to accommodate client requirements to hold investments in specific assets. The Group also invests in funds that are sponsored by third parties. A group entity may act as fund manager, custodian or some other capacity and provide funding and liquidity facilities to both group sponsored and third party funds. The funding provided is collateralized by the underlying assets held by the fund.

The Group does not consolidate funds when Deutsche Bank is deemed agent or when another third party investor has the ability to direct the activities of the fund.

Other

These are Deutsche Bank sponsored or third party structured entities that do not fall into any criteria above. These entities are not consolidated by the Group when the Group does not hold power over the decision making of these entities.

Income derived from involvement with structured entities

The Group earns management fees and, occasionally, performance-based fees for its investment management service in relation to funds. Interest income is recognized on the funding provided to structured entities. Any trading revenue as a result of derivatives with structured entities and from the movements in the value of notes held in these entities is recognized in 'Net gains/losses on financial assets/liabilities held at fair value through profit and loss'.

Interests in unconsolidated structured entities

The Group's interests in unconsolidated structured entities refer to contractual and non-contractual involvement that exposes the Group to variability of returns from the performance of the structured entities. Examples of interests in unconsolidated structured entities include debt or equity investments, liquidity facilities, guarantees and certain derivative instruments in which the Group is absorbing variability of returns from the structured entities.

Interests in unconsolidated structured entities exclude instruments which introduce variability of returns into the structured entities. For example, when the Group purchases credit protection from an unconsolidated structured entity whose purpose and design is to pass through credit risk to investors, the Group is providing the variability of returns to the entity rather than absorbing variability. The purchased credit protection is therefore not considered as an interest for the purpose of the table below.

Maximum Exposure to unconsolidated structured entities

The maximum exposure to loss is determined by considering the nature of the interest in the unconsolidated structured entity. The maximum exposure for loans and trading instruments is reflected by their carrying amounts in the consolidated balance sheet. The maximum exposure for derivatives and off-balance sheet commitments such as guarantees, liquidity facilities and loan commitments under IFRS 12, as interpreted by the Group, is reflected by the notional amounts. Such amounts or their development do not reflect the economic risks faced by the Group because they do not take into account the effects of collateral or hedges nor the probability of such losses being incurred. At December 31, 2018, the notional related to the positive and negative replacement values of derivatives and off-balance sheet commitments were € 372 billion, € 1,311 billion and € 17 billion respectively. At December 31, 2017, the notional related to the positive and negative replacement values of derivatives and off-balance sheet commitments were € 327 billion, € 1,146 billion and € 28 billion (comparatives adjusted) respectively.

Size of structured entities

The Group provides a different measure for size of structured entities depending on their type. The following measures have been considered as appropriate indicators for evaluating the size of structured entities:

- Funds – Net asset value or assets under management where the Group holds fund units and notional of derivatives when the Group's interest comprises of derivatives.
- Securitizations – notional of notes in issue when the Group derives its interests through notes its holds and notional of derivatives when the Group's interests is in the form of derivatives.
- Third party funding entities –Total assets in entities
- Repackaging and investment entities – Fair value of notes in issue

For Third party funding entities, size information is not publicly available, therefore the Group has disclosed the greater of the collateral the Group has received/pledged or the notional of the exposure the Group has to the entity.

The following table shows, by type of structured entity, the carrying amounts of the Group's interests recognized in the consolidated statement of financial position as well as the maximum exposure to loss resulting from these interests. It also provides an indication of the size of the structured entities. The carrying amounts presented below do not reflect the true variability of returns faced by the Group because they do not take into account the effects of collateral or hedges.

Carrying amounts and size relating to Deutsche Bank's interests

					Dec 31, 2018
in € m.	Repackaging and Investment Entities	Third Party Funding Entities	Securitizations	Funds	Total
Assets					
Cash and central bank balances	0	0	0	0	0
Interbank balances (w/o central banks)	1	14	0	28	43
Central bank funds sold and securities purchased under resale agreements	0	508	8	1,397	1,913
Securities Borrowed	0	0	0	461	461
Total financial assets at fair value through profit or loss	342	4,578	5,956	77,166	88,041
Trading assets	244	3,480	4,567	9,297	17,587
Positive market values (derivative financial instruments)	98	571	122	6,516	7,308
Non-trading financial assets mandatory at fair value through profit or loss	0	0	0	0	0
Financial assets designated at fair value through profit or loss	0	526	1,266	61,353	63,145
Financial assets at fair value through other comprehensive income	0	286	240	832	1,358
Financial assets available for sale	N/A	N/A	N/A	N/A	N/A
Loans at amortized cost	220	40,552	27,322	8,370	76,464
Other assets	5	519	216	10,464	11,203
Total assets	**568**	**46,456**	**33,741**	**98,719**	**179,483**
Liabilities					
Total financial liabilities at fair value through profit or loss	102	56	3	15,482	15,644
Negative market values (derivative financial instruments)	102	56	3	15,482	15,644
Other short-term borrowings	0	0	0	6,596	6,596
Total liabilities	**102**	**56**	**3**	**22,078**	**22,240**
Off-balance sheet exposure	0	4,363	9,524	3,028	16,915
Total	**466**	**50,762**	**43,261**	**79,668**	**174,158**
Size of structured entity	2,514	60,525	284,181	2,970,958	

	Dec 31, 2017				
in € m.	Repackaging and Investment Entities	Third Party Funding Entities	Securitizations	Funds	Total
Assets					
Cash and central bank balances	0	0	0	0	0
Interbank balances (w/o central banks)	63	0	0	270	333
Central bank funds sold and securities purchased under resale agreements	105	229	18	1,827	2,178
Securities Borrowed	0	13	0	11,065	11,078
Total financial assets at fair value through profit or loss	569	4,057	5,445	60,057	70,128
Trading assets	349	3,490	5,130	12,380	21,349
Positive market values (derivative financial instruments)	175	553	105	8,670	9,504
Non-trading financial assets mandatory at fair value through profit or loss	N/A	N/A	N/A	N/A	N/A
Financial assets designated at fair value through profit or loss	44	13	210	39,007	39,275
Financial assets at fair value through other comprehensive income	N/A	N/A	N/A	N/A	N/A
Financial assets available for sale	0	1,039	384	730	2,153
Loans at amortized cost	146	37,352	18,533	18,050	74,081
Other assets	50	192	173	21,087	21,502
Total assets	934	42,882	24,552	113,085	181,453
Liabilities					
Total financial liabilities at fair value through profit or loss	120	73	41	13,486	13,720
Negative market values (derivative financial instruments)	120	73	41	13,486	13,720
Other short-term borrowings	0	0	0	9,533	9,533
Total liabilities	120	73	41	23,019	23,253
Off-balance sheet exposure	0	10,079	9,256	8,377[1]	27,712[1]
Total	814	52,888	33,767	98,443[1]	185,912[1]
Size of structured entity	6,833	90,664	281,826	2,181,810	

[1] The comparatives have been adjusted.

Trading assets –Total trading assets as of December 31, 2018 and December 31, 2017 of € 17.6 billion and € 21.3 billion are comprised primarily of € 4.6 billion and € 5.1 billion in Securitizations and € 9.3 billion and € 12.4 billion in Funds structured entities respectively. The Group's interests in securitizations are collateralized by the assets contained in these entities. Where the Group holds fund units these are typically in regards to market making in funds or otherwise serve as hedges for notes issued to clients. Moreover the credit risk arising from loans made to Third party funding structured entities is mitigated by the collateral received.

Financial assets designated at fair value through profit or loss – Reverse repurchase agreements to Funds comprise the majority of the interests in this category and are collateralized by the underlying securities.

Loans – Loans as of December 31, 2018 and December 31, 2017 consist of € 76.5 billion and € 74.1 billion investment in securitization tranches and financing to Third party funding entities. The Group's financing to Third party funding entities is collateralized by the assets in those structured entities.

Other assets – Other assets as of December 31, 2018 and December 31, 2017 of € 11.2 billion and € 21.5 billion, respectively, consist primarily of prime brokerage receivables and cash margin balances.

Pending Receivables – Pending Receivable balances are not included in this disclosure note due to the fact that these balances arise from typical customer supplier relationships out of e.g. brokerage type activities and their inherent volatility would not provide users of the financial statements with effective information about Deutsche Bank's exposures to structured entities.

Financial Support

Deutsche Bank did not provide non-contractual support during the year to unconsolidated structured entities.

Sponsored Unconsolidated Structured Entities where the Group has no interest as of December 31, 2018 and December 31, 2017.

As a sponsor, the Group is involved in the legal set up and marketing of the entity and supports the entity in different ways, namely:

- transferring assets to the entities
- providing seed capital to the entities
- providing operational support to ensure the entity's continued operation
- providing guarantees of performance to the structured entities.

The Group is also deemed a sponsor for a structured entity if market participants would reasonably associate the entity with the Group. Additionally, the use of the Deutsche Bank name for the structured entity indicates that the Group has acted as a sponsor.

The gross revenues from sponsored entities where the Group did not hold an interest as of December 31, 2018 and December 31, 2017 were € (220) million and € 56 million respectively. Instances where the Group does not hold an interest in an unconsolidated sponsored structured entity include cases where any seed capital or funding to the structured entity has already been repaid in full to the Group during the year. This amount does not take into account the impacts of hedges and is recognized in Net gains/losses on financial assets/liabilities at fair value through profit and loss. The aggregated carrying amounts of assets transferred to sponsored unconsolidated structured entities in 2018 were € 4.1 billion for securitization and € 2.4 billion for repackaging and investment entities. In 2017, they were € 2.1 billion for securitization and € 26 million for repackaging and investment entities.

41 – Current and Non-Current Assets and Liabilities

Asset and liability line items by amounts recovered or settled within or after one year

Asset items as of December 31, 2018

	Amounts recovered or settled		Total
in € m.	within one year	after one year	Dec 31, 2018
Cash and central bank balances	188,691	40	188,732
Interbank balances (w/o central banks)	8,282	599	8,881
Central bank funds sold and securities purchased under resale agreements	5,861	2,361	8,222
Securities borrowed	3,396	0	3,396
Financial assets at fair value through profit or loss	536,367	36,977	573,344
Financial assets at fair value through other comprehensive income	16,725	34,457	51,182
Financial assets available for sale	N/A	N/A	N/A
Equity method investments	0	879	879
Loans at amortized cost	110,828	289,468	400,297
Securities held to maturity	N/A	N/A	N/A
Property and equipment	0	2,421	2,421
Goodwill and other intangible assets	0	9,141	9,141
Other assets	82,588	10,856	93,444
Assets for current tax	396	574	970
Total assets before deferred tax assets	953,134	387,774	1,340,907
Deferred tax assets			7,230
Total assets			1,348,137

Liability items as of December 31, 2018

	Amounts recovered or settled		Total
in € m.	within one year	after one year	Dec 31, 2018
Deposits	531,700	32,705	564,405
Central bank funds purchased and securities sold under repurchase agreements	4,866	1	4,867
Securities loaned	3,359	0	3,359
Financial liabilities at fair value through profit or loss	410,409	5,271	415,680
Other short-term borrowings	14,158	0	14,158
Other liabilities	115,511	2,002	117,513
Provisions	2,711	0	2,711
Liabilities for current tax	286	658	944
Long-term debt	47,317	104,766	152,083
Trust preferred securities	3,168	0	3,168
Total liabilities before deferred tax liabilities	1,133,485	145,403	1,278,887
Deferred tax liabilities			512
Total liabilities			1,279,400

Asset items as of December 31, 2017

	Amounts recovered or settled		Total
in € m.	within one year	after one year	Dec 31, 2017
Cash and central bank balances	225,537	118	225,655
Interbank balances (w/o central banks)	8,681	585	9,265
Central bank funds sold and securities purchased under resale agreements	9,216	755	9,971
Securities borrowed	16,710	22	16,732
Financial assets at fair value through profit or loss	623,075	13,895	636,970
Financial assets available for sale	9,882	39,514	49,397
Equity method investments	0	866	866
Loans	113,190	288,510	401,699
Securities held to maturity	0	3,170	3,170
Property and equipment	0	2,663	2,663
Goodwill and other intangible assets	0	8,839	8,839
Other assets	95,383	6,108	101,491
Assets for current tax	840	375	1,215
Total assets before deferred tax assets	1,102,514	365,419	1,467,933
Deferred tax assets			6,799
Total assets			1,474,732

Liability items as of December 31, 2017

	Amounts recovered or settled		Total
in € m.	within one year	after one year	Dec 31, 2017
Deposits	550,987	30,886	581,873
Central bank funds purchased and securities sold under repurchase agreements	17,591	515	18,105
Securities loaned	6,688	1	6,688
Financial liabilities at fair value through profit or loss	473,165	5,471	478,636
Other short-term borrowings	18,411	0	18,411
Other liabilities	127,388	4,820	132,208
Provisions	4,158	0	4,158
Liabilities for current tax	366	635	1,001
Long-term debt	46,403	113,313	159,715
Trust preferred securities	4,825	666	5,491
Total liabilities before deferred tax liabilities	1,249,981	156,306	1,406,287
Deferred tax liabilities			346
Total liabilities			1,406,633

42 – Events after the Reporting Period

After the reporting date no material events occurred which had a significant impact on our results of operations, financial position and net assets.

43 – Regulatory capital Information

General definitions

The calculation of our regulatory capital incorporates the capital requirements following the “Regulation (EU) No 575/2013 on prudential requirements for credit institutions and investment firms” (Capital Requirements Regulation or “CRR”) and the “Directive 2013/36/EU on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms” (Capital Requirements Directive 4 or “CRD 4”) as implemented into German law. The information in this section as well as in the section “Development of risk-weighted Assets” is based on the regulatory principles of consolidation.

This section refers to the capital adequacy of the group of entities consolidated for banking regulatory purposes pursuant to the CRR and the German Banking Act (“Kreditwesengesetz” or “KWG”). Therein not included are insurance companies or companies outside the finance sector.

The total regulatory capital pursuant to the effective regulations as of year-end 2018 comprises Tier 1 and Tier 2 (T2) capital. Tier 1 capital is subdivided into Common Equity Tier 1 (CET 1) capital and Additional Tier 1 (AT1) capital.

Common Equity Tier 1 (CET 1) capital consists primarily of common share capital (reduced by own holdings) including related share premium accounts, retained earnings (including losses for the financial year, if any) and accumulated other comprehensive income, subject to regulatory adjustments (i.e. prudential filters and deductions). Prudential filters for CET 1 capital, according to Articles 32 to 35 CRR, include (i) securitization gains on sale, (ii) cash flow hedges and changes in the value of own liabilities, and (iii) additional value adjustments. CET 1 capital deductions comprise (i) intangible assets, (ii) deferred tax assets that rely on future profitability, (iii) negative amounts resulting from the calculation of expected loss amounts, (iv) net defined benefit pension fund assets, (v) reciprocal cross holdings in the capital of financial sector entities and, (vi) significant and non-significant investments in the capital (CET 1, AT1, T2) of financial sector entities above certain thresholds. All items not deducted (i.e., amounts below the threshold) are subject to risk-weighting.

Additional Tier 1 (AT1) capital consists of AT1 capital instruments and related share premium accounts as well as noncontrolling interests qualifying for inclusion in consolidated AT1 capital, and during the transitional period grandfathered instruments eligible under earlier frameworks. To qualify as AT1 capital under CRR/CRD 4, instruments must have principal loss absorption through a conversion to common shares or a write-down mechanism allocating losses at a trigger point and must also meet further requirements (perpetual with no incentive to redeem; institution must have full dividend/coupon discretion at all times, etc.).

Tier 2 (T2) capital comprises eligible capital instruments, the related share premium accounts and subordinated long-term debt, certain loan loss provisions and noncontrolling interests that qualify for inclusion in consolidated T2 capital. To qualify as T2 capital, capital instruments or subordinated debt must have an original maturity of at least five years. Moreover, eligible capital instruments may inter alia not contain an incentive to redeem, a right of investors to accelerate repayment, or a credit sensitive dividend feature.

Capital instruments that no longer qualify as AT1 or T2 capital under the CRR/CRD 4 fully loaded rules are subject to grandfathering rules during the transitional period and are phased out from 2013 to 2022 with their recognition capped at 40 % in 2018 and the cap decreasing by 10 % every year.

Capital instruments

Our Management Board received approval from the 2017 Annual General Meeting to buy back up to 206.7 million shares before the end of April 2022. Thereof 103.3 million shares can be purchased by using derivatives, this includes 41.3 million derivatives with a maturity exceeding 18 months. During the period from the 2017 Annual General Meeting until the 2018 Annual General Meeting (May 24, 2018), 22.8 million shares have been purchased, of which 4.4 million shares through exercise of call options. The shares purchased were used for equity compensation purposes in the same period or are to be used in the upcoming period so that the number of shares held in Treasury from buybacks was 1.3 million as of the 2018 Annual General Meeting.

The 2018 Annual General Meeting granted our Management Board the approval to buy back up to 206.7 million shares before the end of April 2023. Thereof 103.3 million shares can be purchased by using derivatives, this includes 41.3 million derivatives with a maturity exceeding 18 months. These authorizations substitute the authorizations of the previous year. During the period from the 2018 Annual General Meeting until December 31, 2018, 9.3 million shares were purchased. The shares purchased are to be used in the upcoming period so that the number of shares held in Treasury from buybacks was 1.2 million as of December 31, 2018.

Since the 2017 Annual General Meeting, and as of December 31, 2018, authorized capital available to the Management Board is € 2,560 million (1,000 million shares). As of December 31, 2018, the conditional capital against cash stands at € 512 million (200 million shares). Additional conditional capital for equity compensation amounts to € 51.2 million (20 million shares). Further the 2018 Annual General Meeting authorized the issuance of participatory notes and other Hybrid Debt Securities that fulfill the regulatory requirements to qualify as Additional Tier 1 capital with an equivalent value of € 8.0 billion.

Our legacy Hybrid Tier 1 capital instruments (substantially all noncumulative trust preferred securities) are not recognized under fully loaded CRR/CRD 4 rules as Additional Tier 1 capital, mainly because they have no write-down or equity conversion feature. However, they are recognized as Additional Tier 1 capital under CRR/CRD 4 transitional provisions and can still be recognized as Tier 2 capital under the fully loaded CRR/CRD 4 rules. During the transitional phase-out period the maximum recognizable amount of Additional Tier 1 instruments from Basel 2.5 compliant issuances as of December 31, 2012 will be reduced at the beginning of each financial year by 10 % or € 1.3 billion, through 2022. For December 31, 2018, this resulted in eligible Additional Tier 1 instruments of € 7.6 billion (i.e. € 4.6 billion newly issued AT1 Notes plus € 3.0 billion of legacy Hybrid Tier 1 instruments recognizable during the transition period). € 3.0 billion of the legacy Hybrid Tier 1 instruments can still be recognized as Tier 2 capital under the fully loaded CRR/CRD 4 rules. Additional Tier 1 instruments recognized under fully loaded CRR/CRD 4 rules amounted to € 4.6 billion as of December 31, 2018. In 2018, the bank has redeemed one legacy Hybrid Tier 1 instrument with a notional of U.S. $ 2.0 billion and an eligible equivalent amount of € 1.6 billion and another legacy Hybrid Tier 1 instrument with a notional of € 1.0 billion and an eligible equivalent amount of € 1.0 billion. The first redemption was already derecognized from regulatory Additional Tier 1 capital in 2017 with the effective date of the call-permission by the ECB.

The total of our Tier 2 capital instruments as of December 31, 2018 recognized during the transition period under CRR/CRD 4 was € 6.2 billion. As of December 31, 2018, there were no legacy Hybrid Tier 1 instruments that are counted as Tier 2 capital under transitional rules. The gross notional value of the Tier 2 capital instruments was € 7.5 billion. Tier 2 instruments recognized under fully loaded CRR/CRD 4 rules amounted to € 9.2 billion as of December 31, 2018 (including the € 3.0 billion legacy Hybrid Tier 1 capital instruments only recognizable as Additional Tier 1 capital during the transitional period). In 2018, the bank has redeemed one Tier 2 capital instrument with a notional of JPY 21.0 billion and an eligible equivalent amount of € 0.1 billion and another Tier 2 capital instrument with a notional of JPY 3.0 billion and an eligible equivalent amount of € 0.0 billion. These redemptions were already derecognized from regulatory Tier 2 capital in 2017 with the effective date of the call-permission by the ECB.

Minimum capital requirements

Failure to meet minimum capital requirements can result in supervisory measures such as restrictions of profit distributions or limitations on certain businesses such as lending. We complied with the regulatory capital adequacy requirements in 2018.

Details on regulatory capital

Own Funds Template (incl. RWA and capital ratios)

in € m.	Dec 31, 2018 CRR/CRD 4[1]	Dec 31, 2017 CRR/CRD 4
Common Equity Tier 1 (CET 1) capital: instruments and reserves		
Capital instruments, related share premium accounts and other reserves[2]	45,515	45,195
Retained earnings	16,297	17,977
Accumulated other comprehensive income (loss), net of tax	382	660
Independently reviewed interim profits net of any foreseeable charge or dividend[3]	0	(751)
Other[2]	846	33
Common Equity Tier 1 (CET 1) capital before regulatory adjustments	**63,041**	63,114
Common Equity Tier 1 (CET 1) capital: regulatory adjustments		
Additional value adjustments (negative amount)	(1,504)	(1,204)
Other prudential filters (other than additional value adjustments)	(329)	(74)
Goodwill and other intangible assets (net of related tax liabilities) (negative amount)	(8,566)	(6,715)
Deferred tax assets that rely on future profitability excluding those arising from temporary differences (net of related tax liabilities where the conditions in Art. 38 (3) CRR are met) (negative amount)	(2,758)	(2,403)
Negative amounts resulting from the calculation of expected loss amounts[4]	(367)	(408)
Defined benefit pension fund assets (negative amount)	(1,111)	(900)
Direct, indirect and synthetic holdings by an institution of own CET 1 instruments (negative amount)	(25)	(117)
Direct, indirect and synthetic holdings by the institution of the CET 1 instruments of financial sector entities where the institution has a significant investment in those entities (amount above the 10 % / 15 % thresholds and net of eligible short positions) (negative amount)	0	0
Deferred tax assets arising from temporary differences (net of related tax liabilities where the conditions in Art. 38 (3) CRR are met) (amount above the 10 % / 15 % thresholds) (negative amount)	0	0
Other regulatory adjustments[5]	(895)	(485)
Total regulatory adjustments to Common Equity Tier 1 (CET 1) capital	**(15,555)**	(12,306)
Common Equity Tier 1 (CET 1) capital	**47,486**	50,808
Additional Tier 1 (AT1) capital: instruments		
Capital instruments and the related share premium accounts	4,676	4,676
Amount of qualifying items referred to in Art. 484 (4) CRR and the related share premium accounts subject to phase out from AT1	3,009	3,904
Additional Tier 1 (AT1) capital before regulatory adjustments	**7,685**	8,579
Additional Tier 1 (AT1) capital: regulatory adjustments		
Direct, indirect and synthetic holdings by an institution of own AT1 instruments (negative amount)	(80)	(26)
Residual amounts deducted from AT1 capital with regard to deduction from CET 1 capital during the transitional period pursuant to Art. 472 CRR	N/M	(1,730)
Other regulatory adjustments	0	0
Total regulatory adjustments to Additional Tier 1 (AT1) capital	**(80)**	(1,756)
Additional Tier 1 (AT1) capital	**7,604**	6,823
Tier 1 capital (T1 = CET 1 + AT1)	**55,091**	57,631
Tier 2 (T2) capital	**6,202**	6,384
Total capital (TC = T1 + T2)	**61,292**	64,016
Total risk-weighted assets	**350,432**	343,316
Capital ratios		
Common Equity Tier 1 capital ratio (as a percentage of risk-weighted assets)	13.6	14.8
Tier 1 capital ratio (as a percentage of risk-weighted assets)	15.7	16.8
Total capital ratio (as a percentage of risk-weighted assets)	17.5	18.6

N/M – Not meaningful

[1] With effect from January 1, 2018, the CRR/CRD 4 "transitional" (or "phase-in") rules under which CET 1 regulatory adjustments were phased in have reached a rate of 100 %, together with the 100 % phase-out rate of minority interest only recognizable under the transitional rules.

[2] Our IPO of DWS led to a € 0.9 billion CET 1 contribution which is reflected in 'Capital instruments, related share premium accounts and other reserves' at € 0.1 billion and minority interest in 'Other' at € 0.8 billion.

[3] No interim profits to be recognized as per ECB Decision (EU) 2015/656 in accordance with the Article 26(2) of Regulation (EU) No 575/2013 (ECB/2015/4).

[4] Based on Article 159 CRR and recent guidance provided by EBA (Q&A 2017_3426) published on January 18, 2019 only unearned credit spread additional value adjustments are used as specific credit risk adjustments.

[5] Includes € 0.6 billion capital deduction effective from January 2018 onwards, based on ECB guidance and following the EBA Guidelines on irrevocable payment commitments related to the Single Resolution Fund and the Deposit Guarantee Scheme. Further includes capital deduction of € 0.3 billion that was imposed on Deutsche Bank effective from October 2016 onwards based on a notification by the ECB pursuant to Article 16(1)(c) and 16(2)(d) of Regulation (EU) No 1024/2013.

Reconciliation of shareholders' equity to regulatory capital

in € m.	Dec 31, 2018	CRR/CRD 4 Dec 31, 2017
Total shareholders' equity per accounting balance sheet[1]	**62,495**	63,174
Deconsolidation/Consolidation of entities	(33)	(58)
Of which:		
Additional paid-in capital	(12)	(6)
Retained earnings	(150)	(228)
Accumulated other comprehensive income (loss), net of tax	130	176
Total shareholders' equity per regulatory balance sheet	**62,462**	63,116
Minority Interests (amount allowed in consolidated CET 1)[1]	846	33
Accrual for dividend and AT1 coupons[2]	(267)	0
Reversal of deconsolidation/consolidation of the position Accumulated other comprehensive income (loss), net of tax, during transitional period	0	(35)
Common Equity Tier 1 (CET 1) capital before regulatory adjustments	**63,041**	63,114
Additional value adjustments	(1,504)	(1,204)
Other prudential filters (other than additional value adjustments)	(329)	(74)
Regulatory adjustments relating to unrealized gains and losses pursuant to Art. 467 and 468 CRR	0	(144)
Goodwill and other intangible assets (net of related tax liabilities)	(8,566)	(6,715)
Deferred tax assets that rely on future profitability	(2,758)	(2,403)
Defined benefit pension fund assets	(1,111)	(900)
Direct, indirect and synthetic holdings by the institution of the CET 1 instruments of financial sector entities where the institution has a significant investment in those entities	0	0
Other regulatory adjustments	(1,287)	(866)
Common Equity Tier 1 capital	**47,486**	50,808

[1] Our IPO of DWS led to a € 0.9 billion CET 1 contribution which is reflected in the 'Total shareholders' equity per accounting balance sheet' at € 0.1 billion and 'Minority interests' at € 0.8 billion.
[2] No interim profits to be recognized as per ECB Decision (EU) 2015/656 in accordance with the Article 26(2) of Regulation (EU) No 575/2013 (ECB/2015/4).

Capital management

Our Treasury function manages solvency, capital adequacy, leverage and bail-in capacity ratios at Group level and locally in each region, as applicable. Treasury implements our capital strategy, which itself is developed by the Group Risk Committee and approved by the Management Board. Treasury, directly or through the Group Asset and Liability Committee, which has been established in the first half of the year 2018, manages, among other things, issuance and repurchase of shares and capital instruments, hedging of capital ratios against foreign exchange swings, setting capacities for key financial resources, design of shareholders' equity allocation, and regional capital planning. We are fully committed to maintaining our sound capitalization both from an economic and regulatory perspective. We continuously monitor and adjust our overall capital demand and supply in an effort to achieve an appropriate balance of the economic and regulatory considerations at all times and from all perspectives. These perspectives include book equity based on IFRS accounting standards, regulatory and economic capital as well as specific capital requirements from rating agencies.

Treasury manages the issuance and repurchase of capital instruments, namely Common Equity Tier 1, Additional Tier 1 and Tier 2 capital instruments as well as TLAC/MREL eligible debt instruments. Treasury constantly monitors the market for liability management trades. Such trades represent a countercyclical opportunity to create Common Equity Tier 1 capital by buying back our issuances below par.

Our core currencies are Euro, US Dollar, Chinese Renminbi and Pound Sterling. Treasury manages the sensitivity of our capital ratios against swings in core currencies. The capital invested into our foreign subsidiaries and branches in the other non-core currencies is largely hedged against foreign exchange swings. Treasury determines which currencies are to be hedged, develops suitable hedging strategies in close cooperation with Risk Management and finally executes these hedges.

Resource limit setting

Usage of key financial resources is influenced through the following governance processes and incentives.

Target resource capacities are reviewed in our annual strategic plan in line with our CET 1 and Leverage Ratio ambitions. In a quarterly process, the Group Asset and Liability Committee, which insofar as it replaced the Group Risk Committee as decision body, approves divisional resource limits for Total Capital Demand and leverage exposure that are based on the strategic plan but adjusted for market conditions and the short-term outlook. Limits are enforced through a close monitoring process and an excess charging mechanism.

Overall regulatory capital requirements are principally driven by either our CET 1 ratio (solvency) or leverage ratio (leverage) requirements, whichever is the more binding constraint. For the internal capital allocation, the combined contribution of each segment to the Group's Common Equity Tier 1 ratio, the Group's Leverage ratio and the Group's Capital Loss under Stress are weighted to reflect their relative importance and level of constraint to the Group. Contributions to the Common Equity Tier 1 ratio and the Leverage ratio are measured through Risk-Weighted Assets (RWA) and Leverage Ratio Exposure (LRE) assuming full implementation of CRR/CRD 4 rules. The Group's Capital Loss under Stress is a measure of the Group's overall economic risk exposure under a defined stress scenario. In our performance measurement, our methodology also applies different rates for the cost of equity for each of the business segments, reflecting in a more differentiated way the earnings volatility of the individual business models. This enables improved performance management and investment decisions.

Regional capital plans covering the capital needs of our branches and subsidiaries across the globe are prepared on an annual basis and presented to the Group Investment Committee. Most of our subsidiaries are subject to legal and regulatory capital requirements. In developing, implementing and testing our capital and liquidity, we fully take such legal and regulatory requirements into account.

Further, Treasury is represented on the Investment Committee of the largest Deutsche Bank pension fund which sets the investment guidelines for this fund. This representation is intended to ensure that pension assets are aligned with pension liabilities, thus protecting our capital base.

44 – Supplementary Information to the Consolidated Financial Statements according to Sections 297 (1a) / 315a HGB and the return on assets according to Article 26a of the German Banking Act

Staff Costs

in € m.	2018	2017
Staff costs:		
Wages and salaries	9,828	10,108
Social security costs	1,986	2,145
thereof: those relating to pensions	681	749
Total	**11,814**	12,253

Staff

The average number of effective staff employed in 2018 was 95,566 (2017: 97,733) of whom 41,967 (2017: 42,910) were women. Part-time staff is included in these figures proportionately. An average of 53,401 (2017: 54,214) staff members worked outside Germany.

Management Board and Supervisory Board Remuneration

In accordance with the requirements of the GAS 17, the members of the Management Board collectively received in the 2018 financial year compensation totaling € 52,181,136 (2017: € 37,665,535). Of that, € 25,711,111 (2017: € 29,200,000) was for fixed compensation, € 4,200,000 (2017: € 550,000) for functional allowances, € 2,123,102 (2017: € 2,053,520) for fringe benefits and € 20,146,923 (2017: € 5,862,015) for performance-related components.

Former members of the Management Board of Deutsche Bank AG or their surviving dependents received € 22,943,159 and € 27,694,325 for the years ended December 31, 2018 and 2017, respectively.

The compensation principles for Supervisory Board members are set forth in our Articles of Association. The compensation provisions, which were newly conceived in 2013, were last amended by resolution of the Annual General Meeting on May 18 2017 and became effective on October 5, 2017. The members of the Supervisory Board receive fixed annual compensation. The annual base compensation amounts to € 100,000 for each Supervisory Board member. The Supervisory Board Chairman receives twice that amount and the Deputy Chairperson one and a half times that amount. Members and chairs of the committees of the Supervisory Board are paid additional fixed annual compensation. 75 % of the compensation determined is disbursed to each Supervisory Board member after submitting invoices within the first three month of the following year. The other 25 % is converted by the company at the same time into company shares (notional shares) according to the provisions of the Articles of Association. The share value of this number of shares is paid to the respective Supervisory Board member in February of the year following his departure from the Supervisory Board or the expiration of his term of office according to the provisions of the Articles of Association, provided that the member does not leave the Supervisory Board due to important cause which would have justified dismissal. In case of a change in Supervisory Board membership during the year, compensation for the financial year will be paid on a pro rata basis, rounded up/down to full months. For the year of departure, the entire compensation is paid in cash; a forfeiture regulation applies to 25 % of the compensation for that financial year. The members of the Supervisory Board received for the financial year 2018 a total remuneration of € 5,766,669 (2017: € 5,150,000), of which € 4,676,041 will be paid out in spring 2019 (2018: € 3,987,500) according to the provisions of the Articles of Association.

Provisions for pension obligations to former members of the Management Board and their surviving dependents amounted to € 193,452,137 and € 214,154,039 at December 31, 2018 and 2017, respectively.

Loans and advances granted and contingent liabilities assumed for members of the Management Board amounted to € 11,180,396 and € 12,337,886 and for members of the Supervisory Board amounted to € 33,425,239 and € 35,210,035 for the years ended December 31, 2018 and 2017, respectively. Members of the Supervisory Board repaid € 4,662,819 loans in 2018.

Return on Assets

Article 26a of the German Banking Act defines the return on assets as net profit divided by average total assets. According to this definition the return on assets was 0.02 % and (0.05) % for the years ended December 31, 2018 and 2017, respectively.

Information on the parent company

Deutsche Bank Aktiengesellschaft is the parent company of Deutsche Bank Group. It is incorporated in Frankfurt am Main and is registered in the Commercial Register of the District Court Frankfurt am Main under registration number HRB 30000.

Corporate Governance

Deutsche Bank AG has approved the Declaration of Conformity in accordance with section 161 of the German Corporation Act (AktG). The declaration is published on Deutsche Bank's website (www.db.com/ir/en/documents.htm).

Principal accountant fees and services

Breakdown of the fees charged by the Group's auditor

Fee category in € m.	2018	2017
Audit fees	60	51
thereof to KPMG AG	33	23
Audit-related fees	12	18
thereof to KPMG AG	5	13
Tax-related fees	5	4
thereof to KPMG AG	2	2
All other fees	1	0
thereof to KPMG AG	1	0
Total fees	**78**	73

The Audit fees include fees for professional services for the audit of Deutsche Bank AG's annual financial statements and consolidated financial statements and do not include the 2017 audit fees for Postbank and its subsidiaries, as the 2017 financials of those entities are not audited by KPMG. The Audit-related fees include fees for other assurance services required by law or regulations, in particular for financial service specific attestation, for quarterly reviews, for spin-off audits and for merger audits, as well as fees for voluntary assurance services, like voluntary audits for internal management purposes and the issuance of comfort letters. Tax-related fees include fees for services relating to the preparation and review of tax returns and related compliance assistance and advice, tax consultation and advice relating to Group tax planning strategies and initiatives and assistance with assessing compliance with tax regulations.

45 – Country by Country Reporting

§ 26a KWG requires annual disclosure of certain information by country. The disclosed information is derived from the IFRS Group accounts of Deutsche Bank. It is however not reconcilable to other financial information in this report because of specific requirements published by Bundesbank on December 16, 2014 which include the requirement to present the country information prior to elimination of cross-border intra group transactions. In line with these Bundesbank requirements, intra group transactions within the same country are eliminated. These eliminations are identical to the eliminations applied for internal management reporting on countries and consist mostly of dividends paid.

The geographical location of subsidiaries and branches considers the country of incorporation or residence as well as the relevant tax jurisdiction. For the names, nature of activity and geographical location of subsidiaries and branches, please refer to Note 47 "Shareholdings". In addition, Deutsche Bank AG and its subsidiaries have German and foreign branches, for example in London, New York and Singapore. The net revenues are composed of net interest revenues and non-interest revenues.

in € m. (unless stated otherwise)	Net revenues (Turnover)	Employees (full-time equivalent)	Income (loss) before income taxes	Income tax (expense)/ benefit
				Dec 31, 2018
Argentina	0	0	0	0
Australia	300	434	45	(9)
Austria	12	86	(15)	(1)
Barbados	0	0	(0)	0
Belgium	178	638	2	3
Brazil	49	143	9	(10)
Canada	13	12	20	(6)
Cayman Islands	12	10	(2)	(0)
Chile	1	0	1	(0)
China	205	487	105	(26)
Colombia	0	0	0	0
Czech Republic	14	42	7	(2)
France	59	211	19	(10)
Germany	11,194	41,674	2,408	(374)
Great Britain	3,982	7,990	(872)	(56)
Greece	0	9	(0)	(0)
Guernsey	6	8	4	(0)
Hong Kong	693	1,185	49	6
Hungary	14	58	2	(1)
India	560	12,222	363	(164)
Indonesia	117	246	62	(20)
Ireland	27	478	(3)	(2)
Israel	2	12	0	0
Italy	707	3,645	(232)	(0)
Japan	376	568	70	(53)
Jersey	15	52	(15)	(0)
Latvia	1	0	0	0
Luxembourg	1,160	507	739	(140)
Malaysia	92	209	58	(14)
Malta	172	0	171	(0)
Mauritius	24	9	19	(3)
Mexico	16	46	(8)	(22)
Netherlands	253	668	83	0
New Zealand	0	0	0	0
Pakistan	13	66	4	(1)
Peru	0	0	0	0
Philippines	27	1,775	8	(5)
Poland	235	526	(25)	(5)
Portugal	18	374	(50)	(5)
Qatar	(0)	3	1	(0)
Romania	(0)	703	5	(1)
Russian Fed.	54	1,321	25	(6)
Saudi Arabia	16	65	(12)	3
Singapore	520	1,950	(98)	20
Slovakia	(0)	0	(5)	0
South Africa	46	60	(16)	0
South Korea	114	234	35	(8)
Spain	509	2,339	39	(14)
Sri Lanka	16	66	5	(3)
Sweden	1	27	4	(1)
Switzerland	270	652	14	(4)
Taiwan	48	167	14	(1)
Thailand	39	117	5	(3)
Turkey	49	114	28	(7)
UAE	14	180	(2)	(0)
Ukraine	5	32	2	(0)
Uruguay	0	0	0	0
USA	5,266	9,253	460	(22)
Venezuela	0	0	0	0
Vietnam	21	63	11	(2)

46 – Shareholdings

364 Subsidiaries
372 Consolidated Structured Entities
376 Companies accounted for at equity
378 Other Companies, where the holding exceeds 20 %
382 Holdings in large corporations, where the holding exceeds 5 % of the voting rights

The following pages show the Shareholdings of Deutsche Bank Group pursuant to Section 313 (2) of the German Commercial Code ("HGB") as well as to the Guidelines on disclosure requirements under Part Eight of Regulation (EU) No 575/2013 (Template EU LI3).

Footnotes:

1 Entity fully consolidated under the regulatory scope.
2 Entity neither consolidated nor deducted under the regulatory scope.
3 Status as shareholder with unlimited liability pursuant to Section 313 (2) Number 6 HGB.
4 Entity under the regulatory scope deducted from own funds according to Articles 36 and 48 CRR.
5 Controlled.
6 Limited Partnership.
7 Only specified assets and related liabilities (silos) of this entity were consolidated.
8 General Partnership.
9 Not controlled.
10 Accounted for at equity due to significant influence.
11 Classified as Structured Entity not to be accounted for at equity under IFRS.
12 Classified as Structured Entity not to be consolidated under IFRS.
13 Preliminary Own funds of € 7,085.8m / Result of € 4.6m (Business Year 2018).
14 Not consolidated or accounted for at equity as classified as non-trading financial assets mandatory at fair value through profit or loss.
15 Preliminary Own funds of € 7,970.5m / Result of € 63.9m (Business Year 2018).
16 Own funds of € 74.1m / Result of € 7.7m (Business Year 2017).
17 Entity proportionally consolidated under the regulatory scope.
18 Preliminary Own funds of € 0.005m / Result of € 2.0m (Business Year 2018).
19 Preliminary Own funds of € 13.6m / Result of € 22.1m (Business Year 2018).

Subsidiaries

Serial No.	Name of company	Domicile of company	Foot-note	Nature of activity	Share of Capital in %
1	Deutsche Bank Aktiengesellschaft	Frankfurt am Main	1	Credit Institution	
2	ABFS I Incorporated	Lutherville-Timonium	1	Financial Institution	100.0
3	ABS MB Ltd.	Lutherville-Timonium	1	Financial Institution	100.0
4	Acacia (Luxembourg) S.à r.l.	Luxembourg	2	Other Enterprise	100.0
5	Accounting Solutions Holding Company, Inc.	Wilmington	2	Other Enterprise	100.0
6	Alex. Brown Financial Services Incorporated	Lutherville-Timonium	1	Financial Institution	100.0
7	Alex. Brown Investments Incorporated	Lutherville-Timonium	1	Financial Institution	100.0
8	Alfred Herrhausen Gesellschaft mbH	Berlin	2	Other Enterprise	100.0
9	Ambidexter GmbH	Frankfurt	1	Payment Institution	100.0
10	Argent Incorporated	Lutherville-Timonium	1	Financial Institution	100.0
11	Baincor Nominees Pty Limited	Sydney	2	Other Enterprise	100.0
12	Bainpro Nominees Pty Ltd	Sydney	1	Ancillary Services Undertaking	100.0
13	Baldur Mortgages Limited	London	1	Financial Institution	100.0
14	Bankers Trust Investments Limited	London	2	Other Enterprise	100.0
15	Barkly Investments Ltd.	St. Helier	1	Financial Institution	100.0
16	Bayan Delinquent Loan Recovery 1 (SPV-AMC), Inc.	Makati City	1	Financial Institution	100.0
17	Betriebs-Center für Banken AG	Frankfurt	1	Ancillary Services Undertaking	100.0
18	BHW - Gesellschaft für Wohnungswirtschaft mbH	Hameln	1	Financial Institution	100.0
19	BHW Bausparkasse Aktiengesellschaft	Hameln	1	Credit Institution	100.0
20	BHW Holding GmbH	Hameln	1	Financial Holding Company	100.0
21	BHW Kreditservice GmbH	Hameln	1	Ancillary Services Undertaking	100.0
22	Biomass Holdings S.à r.l.	Luxembourg	1	Financial Institution	100.0
23	Birch (Luxembourg) S.à r.l.	Luxembourg	2	Other Enterprise	100.0
24	Blue Cork, Inc.	Wilmington	1	Ancillary Services Undertaking	100.0
25	BNA Nominees Pty Limited	Sydney	1	Ancillary Services Undertaking	100.0
26	Borfield Sociedad Anonima	Montevideo	2	Other Enterprise	100.0
27	BT Globenet Nominees Limited	London	2	Other Enterprise	100.0
28	BTAS Cayman GP	George Town	1, 3	Financial Institution	100.0
29	BTD Nominees Pty Limited	Sydney	2	Other Enterprise	100.0
30	Cape Acquisition Corp.	Wilmington	4	Financial Institution	100.0
31	CapeSuccess Inc.	Wilmington	4	Ancillary Services Undertaking	100.0
32	CapeSuccess LLC	Wilmington	4	Financial Institution	82.6
33	Cardales UK Limited	London	2	Other Enterprise	100.0
34	Career Blazers LLC	Wilmington	4	Financial Institution	100.0
35	Career Blazers Management Company, Inc.	Albany	2	Other Enterprise	100.0
36	Career Blazers Personnel Services of Washington, D.C., Inc.	Washington D.C.	2	Other Enterprise	100.0
37	Career Blazers Personnel Services, Inc.	Albany	4	Financial Institution	100.0
38	Caribbean Resort Holdings, Inc.	New York	1, 5	Financial Institution	0.0
39	Cathay Advisory (Beijing) Co., Ltd.	Beijing	2	Other Enterprise	100.0
40	Cathay Asset Management Company Limited	Ebène	1	Financial Institution	100.0
41	Cathay Capital Company (No 2) Limited	Ebène	1	Financial Institution	67.6
42	Cedar (Luxembourg) S.à r.l.	Luxembourg	2	Other Enterprise	100.0
43	Centennial River 2 Inc.	Austin	2	Other Enterprise	100.0
44	Centennial River Corporation	Wilmington	4	Financial Institution	100.0
45	Charlton (Delaware), Inc.	Wilmington	1	Financial Institution	100.0
46	China Recovery Fund, LLC	Wilmington	1	Financial Institution	85.0
47	Cinda - DB NPL Securitization Trust 2003-1	Wilmington	1, 5	Financial Institution	10.0
48	Consumo S.p.A.	Milan	1	Financial Institution	100.0
49	Cyrus J. Lawrence Capital Holdings, Inc.	Wilmington	1	Financial Institution	100.0
50	D B Investments (GB) Limited	London	1	Financial Holding Company	100.0
51	D&M Turnaround Partners Godo Kaisha	Tokyo	1	Financial Institution	100.0
52	D.B. International Delaware, Inc.	Wilmington	1	Financial Institution	100.0
53	DAHOC (UK) Limited (in members' voluntary liquidation)	London	1	Financial Institution	100.0
54	DAHOC Beteiligungsgesellschaft mbH	Frankfurt	1	Financial Institution	100.0
55	DB (Barbados) SRL	Christ Church	1	Ancillary Services Undertaking	100.0
56	DB (Malaysia) Nominee (Asing) Sdn. Bhd.	Kuala Lumpur	2	Other Enterprise	100.0
57	DB (Malaysia) Nominee (Tempatan) Sendirian Berhad	Kuala Lumpur	2	Other Enterprise	100.0
58	DB (Pacific) Limited	Wilmington	1	Financial Institution	100.0
59	DB (Pacific) Limited, New York	New York	1	Financial Institution	100.0
60	DB Abalone LLC	Wilmington	1	Financial Institution	100.0
61	DB Alex. Brown Holdings Incorporated	Wilmington	1	Financial Institution	100.0

Serial No.	Name of company	Domicile of company	Foot-note	Nature of activity	Share of Capital in %
62	DB Alps Corporation	Wilmington	1	Financial Institution	100.0
63	DB Aotearoa Investments Limited	George Town	1	Ancillary Services Undertaking	100.0
64	DB Asia Pacific Holdings Limited (in voluntary liquidation)	George Town	1	Financial Institution	100.0
65	DB Beteiligungs-Holding GmbH	Frankfurt	1	Financial Institution	100.0
66	DB Boracay LLC	Wilmington	1	Financial Institution	100.0
67	DB Capital Investments Sàrl	Luxembourg	1	Financial Institution	100.0
68	DB Capital Markets (Deutschland) GmbH	Frankfurt	1	Financial Holding Company	100.0
69	DB Capital Partners, Inc.	Wilmington	1	Financial Institution	100.0
70	DB Cartera de Inmuebles 1, S.A.U.	Pozuelo de Alarcón	1	Ancillary Services Undertaking	100.0
71	DB Chestnut Holdings Limited	George Town	1	Ancillary Services Undertaking	100.0
72	DB Commodity Services LLC	Wilmington	1	Investment Firm	100.0
73	DB Consorzio S. Cons. a r. l.	Milan	1	Ancillary Services Undertaking	100.0
74	DB Corporate Advisory (Malaysia) Sdn. Bhd.	Kuala Lumpur	1	Financial Institution	100.0
75	DB Delaware Holdings (Europe) Limited	George Town	1	Financial Institution	100.0
76	DB Direkt GmbH	Frankfurt	1	Ancillary Services Undertaking	100.0
77	DB Elara LLC	Wilmington	1	Financial Institution	100.0
78	DB Energy Commodities Limited (in members' voluntary liquidation)	London	1	Ancillary Services Undertaking	100.0
79	DB Energy Trading LLC	Wilmington	1	Ancillary Services Undertaking	100.0
80	DB Enfield Infrastructure Holdings Limited	St. Helier	1	Financial Institution	100.0
81	DB Equipment Leasing, Inc.	New York	1	Financial Institution	100.0
82	DB Equity Limited	London	1	Financial Institution	100.0
83	DB Finance (Delaware), LLC	Wilmington	1	Financial Institution	100.0
84	DB Ganymede 2006 L.P.	George Town	1, 3	Financial Institution	100.0
85	DB Global Technology SRL	Bucharest	1	Ancillary Services Undertaking	100.0
86	DB Global Technology, Inc.	Wilmington	1	Ancillary Services Undertaking	100.0
87	DB Group Services (UK) Limited	London	1	Ancillary Services Undertaking	100.0
88	DB Holdings (New York), Inc.	New York	1	Financial Institution	100.0
89	DB Holdings (South America) Limited	Wilmington	1	Financial Institution	100.0
90	DB HR Solutions GmbH	Eschborn	1	Ancillary Services Undertaking	100.0
91	DB Impact Investment Fund I, L.P.	Edinburgh	1, 3	Financial Institution	100.0
92	DB Industrial Holdings Beteiligungs GmbH & Co. KG	Luetzen	1, 3	Financial Institution	100.0
93	DB Industrial Holdings GmbH	Luetzen	1	Financial Institution	100.0
94	DB Intermezzo LLC	Wilmington	1	Financial Institution	100.0
95	DB International (Asia) Limited	Singapore	1	Credit Institution	100.0
96	DB International Investments Limited	London	1	Financial Institution	100.0
97	DB International Trust (Singapore) Limited	Singapore	2	Other Enterprise	100.0
98	DB Investment Managers, Inc.	Wilmington	1	Financial Institution	100.0
99	DB Investment Partners, Inc.	Wilmington	1	Financial Institution	100.0
100	DB Investment Resources (US) Corporation	Wilmington	1	Financial Institution	100.0
101	DB Investment Resources Holdings Corp.	Wilmington	1	Financial Institution	100.0
102	DB Investment Services GmbH	Frankfurt	1	Credit Institution	100.0
103	DB Io LP	Wilmington	1, 3	Financial Institution	100.0
104	DB IROC Leasing Corp.	New York	1	Financial Institution	100.0
105	DB London (Investor Services) Nominees Limited	London	1	Financial Institution	100.0
106	DB Management Support GmbH	Frankfurt	4	Ancillary Services Undertaking	100.0
107	DB Managers, LLC	West Trenton	1	Investment Firm	100.0
108	DB Nexus American Investments (UK) Limited (in members' voluntary liquidation)	London	1	Financial Institution	100.0
109	DB Nexus Investments (UK) Limited (in members' voluntary liquidation)	London	1	Financial Institution	100.0
110	DB Nominees (Hong Kong) Limited	Hong Kong	4	Ancillary Services Undertaking	100.0
111	DB Nominees (Singapore) Pte Ltd	Singapore	2	Other Enterprise	100.0
112	DB Omega BTV S.C.S.	Luxembourg	1, 3	Financial Institution	100.0
113	DB Omega Holdings LLC	Wilmington	1	Financial Institution	100.0
114	DB Omega Ltd.	George Town	1	Financial Institution	100.0
115	DB Omega S.C.S.	Luxembourg	1, 3	Financial Institution	100.0
116	DB Operaciones y Servicios Interactivos Agrupación de Interés Económico	Pozuelo de Alarcón	1	Ancillary Services Undertaking	99.9
117	DB Overseas Finance Delaware, Inc.	Wilmington	1	Financial Institution	100.0
118	DB Overseas Holdings Limited	London	1	Financial Institution	100.0
119	DB Portfolio Southwest, Inc.	Dallas	1	Ancillary Services Undertaking	100.0
120	DB Print GmbH	Frankfurt	1	Ancillary Services Undertaking	100.0
121	DB Privat- und Firmenkundenbank AG	Frankfurt	1	Credit Institution	100.0
122	DB Private Clients Corp.	Wilmington	1	Financial Institution	100.0
123	DB Private Wealth Mortgage Ltd.	New York	1	Financial Institution	100.0
124	DB Re S.A.	Luxembourg	4	Reinsurance Undertaking	100.0
125	DB Service Centre Limited	Dublin	1	Ancillary Services Undertaking	100.0
126	DB Service Uruguay S.A.	Montevideo	1	Financial Institution	100.0

Serial No.	Name of company	Domicile of company	Foot-note	Nature of activity	Share of Capital in %
127	DB Services Americas, Inc.	Wilmington	1	Ancillary Services Undertaking	100.0
128	DB Servizi Amministrativi S.r.l.	Milan	1	Ancillary Services Undertaking	100.0
129	DB Strategic Advisors, Inc.	Makati City	1	Ancillary Services Undertaking	100.0
130	DB Structured Derivative Products, LLC	Wilmington	1	Ancillary Services Undertaking	100.0
131	DB Structured Products, Inc.	Wilmington	1	Financial Institution	100.0
132	DB Trustee Services Limited	London	2	Other Enterprise	100.0
133	DB Trustees (Hong Kong) Limited	Hong Kong	2	Other Enterprise	100.0
134	DB U.S. Financial Markets Holding Corporation	Wilmington	1	Financial Holding Company	100.0
135	DB UK Bank Limited	London	1	Credit Institution	100.0
136	DB UK Holdings Limited	London	1	Financial Institution	100.0
137	DB UK PCAM Holdings Limited	London	1	Financial Institution	100.0
138	DB USA Core Corporation	West Trenton	1	Ancillary Services Undertaking	100.0
139	DB USA Corporation	Wilmington	1	Financial Institution	100.0
140	DB Valoren S.à r.l.	Luxembourg	1	Financial Holding Company	100.0
141	DB Value S.à r.l.	Luxembourg	1	Financial Institution	100.0
142	DB VersicherungsManager GmbH	Frankfurt	2	Other Enterprise	100.0
143	DB Vita S.A.	Luxembourg	4	Insurance Undertaking	75.0
144	DBAB Wall Street, LLC	Wilmington	1	Ancillary Services Undertaking	100.0
145	DBAH Capital, LLC	Wilmington	1	Financial Institution	100.0
146	DBCIBZ1	George Town	1	Financial Institution	100.0
147	DBCIBZ2	George Town	1	Financial Institution	100.0
148	DBFIC, Inc.	Wilmington	1	Financial Institution	100.0
149	DBNZ Overseas Investments (No.1) Limited	George Town	1	Financial Institution	100.0
150	DBOI Global Services (UK) Limited	London	1	Ancillary Services Undertaking	100.0
151	DBOI Global Services Private Limited	Mumbai	1	Ancillary Services Undertaking	100.0
152	DBR Investments Co. Limited	George Town	1	Financial Institution	100.0
153	DBRE Global Real Estate Management IA, Ltd.	George Town	1	Asset Management Company	100.0
154	DBRE Global Real Estate Management IB, Ltd.	George Town	1	Asset Management Company	100.0
155	DBRMSGP1	George Town	1	Financial Institution	100.0
156	DBUK PCAM Limited	London	1	Financial Holding Company	100.0
157	DBUKH No. 2 Limited	London	1, 5	Financial Institution	0.0
158	DBUSBZ1, LLC	Wilmington	2	Other Enterprise	100.0
159	DBUSBZ2, S.à r.l.	Luxembourg	1	Financial Institution	100.0
160	DBX Advisors LLC	Wilmington	1	Investment Firm	100.0
161	DBX Strategic Advisors LLC	Wilmington	1	Investment Firm	100.0
162	DBÖ Vermögensverwertung GmbH	Vienna	2	Other Enterprise	100.0
163	De Meng Innovative (Beijing) Consulting Company Limited	Beijing	1	Ancillary Services Undertaking	100.0
164	DeAM Infrastructure Limited (in members' voluntary liquidation)	London	4	Financial Institution	100.0
165	DEBEKO Immobilien GmbH & Co Grundbesitz OHG	Eschborn	1, 3	Ancillary Services Undertaking	100.0
166	DEE Deutsche Erneuerbare Energien GmbH	Duesseldorf	1	Financial Institution	100.0
167	Delowrezham de México S. de R.L. de C.V.	Mexico City	1	Financial Institution	100.0
168	DEUFRAN Beteiligungs GmbH	Frankfurt	1	Financial Institution	100.0
169	DEUKONA Versicherungs-Vermittlungs-GmbH	Frankfurt	1	Ancillary Services Undertaking	100.0
170	Deutsche (Aotearoa) Capital Holdings New Zealand	Auckland	1	Financial Institution	100.0
171	Deutsche (Aotearoa) Foreign Investments New Zealand	Auckland	1	Financial Institution	100.0
172	Deutsche (Mauritius) Limited	Port Louis	2	Other Enterprise	100.0
173	Deutsche (New Munster) Holdings New Zealand Limited	Auckland	1	Financial Institution	100.0
174	Deutsche Access Investments Limited	Sydney	1	Ancillary Services Undertaking	100.0
175	Deutsche Aeolia Power Production Société Anonyme	Paiania	2	Other Enterprise	80.0
176	Deutsche Alt-A Securities, Inc.	Wilmington	4	Financial Institution	100.0
177	Deutsche Alternative Asset Management (France) SAS	Paris	2	Other Enterprise	100.0
178	Deutsche Alternative Asset Management (UK) Limited	London	1	Asset Management Company	100.0
179	Deutsche Asia Pacific Holdings Pte Ltd	Singapore	1	Financial Holding Company	100.0
180	Deutsche Asset Management (India) Private Limited	Mumbai	1	Asset Management Company	100.0
181	Deutsche Asset Management (Japan) Limited	Tokyo	1	Investment Firm	100.0
182	Deutsche Asset Management (Korea) Company Limited	Seoul	1	Asset Management Company	100.0
183	Deutsche Asset Management S.A.	Luxembourg	1	Asset Management Company	100.0
184	Deutsche Asset Management S.G.I.I.C., S.A.	Madrid	1	Asset Management Company	100.0
185	Deutsche Australia Limited	Sydney	1	Financial Institution	100.0
186	Deutsche Bank (Cayman) Limited	George Town	1	Credit Institution	100.0
187	Deutsche Bank (Chile)	Santiago	2	Other Enterprise	100.0
188	Deutsche Bank (China) Co., Ltd.	Beijing	1	Credit Institution	100.0
189	Deutsche Bank (Malaysia) Berhad	Kuala Lumpur	1	Credit Institution	100.0
190	Deutsche Bank (Suisse) SA	Geneva	1	Credit Institution	100.0
191	Deutsche Bank (Uruguay) Sociedad Anónima Institución Financiera Externa	Montevideo	1	Credit Institution	100.0
192	DEUTSCHE BANK A.S.	Istanbul	1	Credit Institution	100.0
193	Deutsche Bank Americas Holding Corp.	Wilmington	1	Financial Holding Company	100.0
194	Deutsche Bank Bauspar-Aktiengesellschaft	Frankfurt	1	Credit Institution	100.0

Serial No.	Name of company	Domicile of company	Foot-note	Nature of activity	Share of Capital in %
195	Deutsche Bank Europe GmbH	Frankfurt	1	Credit Institution	100.0
196	Deutsche Bank Financial Company	George Town	1	Financial Institution	100.0
197	Deutsche Bank Holdings, Inc.	Wilmington	1	Financial Institution	100.0
198	Deutsche Bank Insurance Agency Incorporated	Lutherville-Timonium	2	Other Enterprise	100.0
199	Deutsche Bank Insurance Agency of Delaware	Wilmington	1	Financial Institution	100.0
200	Deutsche Bank International Limited	St. Helier	1	Credit Institution	100.0
201	Deutsche Bank Investments (Guernsey) Limited	St. Peter Port	2	Other Enterprise	100.0
202	Deutsche Bank Luxembourg S.A.	Luxembourg	1	Credit Institution	100.0
203	Deutsche Bank Mutui S.p.A.	Milan	1	Financial Institution	100.0
204	Deutsche Bank México, S.A., Institución de Banca Múltiple	Mexico City	1	Credit Institution	100.0
205	Deutsche Bank National Trust Company	Los Angeles	1	Financial Institution	100.0
206	Deutsche Bank Nominees (Guernsey) Limited (in members' voluntary liquidation)	St. Peter Port	2	Other Enterprise	100.0
207	Deutsche Bank Nominees (Jersey) Limited	St. Helier	2	Other Enterprise	100.0
208	Deutsche Bank Polska Spólka Akcyjna	Warsaw	1	Credit Institution	100.0
209	Deutsche Bank Representative Office Nigeria Limited	Lagos	4	Ancillary Services Undertaking	100.0
210	Deutsche Bank S.A. - Banco Alemão	Sao Paulo	1	Credit Institution	100.0
211	Deutsche Bank Securities Inc.	Wilmington	1	Investment Firm	100.0
212	Deutsche Bank Securities Limited	Toronto	1	Investment Firm	100.0
213	Deutsche Bank Services (Jersey) Limited	St. Helier	1	Ancillary Services Undertaking	100.0
214	Deutsche Bank Società per Azioni	Milan	1	Credit Institution	99.9
215	Deutsche Bank Trust Company Americas	New York	1	Credit Institution	100.0
216	Deutsche Bank Trust Company Delaware	Wilmington	1	Credit Institution	100.0
217	Deutsche Bank Trust Company, National Association	New York	1	Financial Institution	100.0
218	Deutsche Bank Trust Corporation	New York	1	Financial Holding Company	100.0
219	Deutsche Bank, Sociedad Anónima Española	Madrid	1	Credit Institution	99.8
220	Deutsche Capital Finance (2000) Limited	George Town	1	Financial Institution	100.0
221	Deutsche Capital Hong Kong Limited	Hong Kong	1	Financial Institution	100.0
222	Deutsche Capital Management Limited	Dublin	1	Asset Management Company	100.0
223	Deutsche Capital Markets Australia Limited	Sydney	1	Investment Firm	100.0
224	Deutsche Capital Partners China Limited	George Town	1	Financial Institution	100.0
225	Deutsche Cayman Ltd.	George Town	2	Other Enterprise	100.0
226	Deutsche CIB Centre Private Limited	Mumbai	1	Ancillary Services Undertaking	100.0
227	Deutsche Custody N.V.	Amsterdam	4	Financial Institution	100.0
228	Deutsche Domus New Zealand Limited	Auckland	1	Financial Institution	100.0
229	Deutsche Equities India Private Limited	Mumbai	1	Securities Trading Firm	100.0
230	Deutsche Finance Co 1 Pty Limited	Sydney	1	Financial Institution	100.0
231	Deutsche Finance Co 2 Pty Limited	Sydney	1	Financial Institution	100.0
232	Deutsche Finance Co 3 Pty Limited	Sydney	1	Financial Institution	100.0
233	Deutsche Finance Co 4 Pty Limited	Sydney	1	Financial Institution	100.0
234	Deutsche Finance No. 2 Limited	George Town	1	Financial Institution	100.0
235	Deutsche Foras New Zealand Limited	Auckland	1	Financial Institution	100.0
236	Deutsche Gesellschaft für Immobilien-Leasing mit beschränkter Haftung	Duesseldorf	4	Financial Institution	100.0
237	Deutsche Global Markets Limited	Tel Aviv	1	Ancillary Services Undertaking	100.0
238	Deutsche Group Holdings (SA) Proprietary Limited	Johannesburg	1	Financial Institution	100.0
239	Deutsche Group Services Pty Limited	Sydney	1	Ancillary Services Undertaking	100.0
240	Deutsche Grundbesitz Beteiligungsgesellschaft mbH	Eschborn	4	Financial Institution	100.0
241	Deutsche Grundbesitz-Anlagegesellschaft mit beschränkter Haftung	Frankfurt	2	Other Enterprise	99.8
242	Deutsche Holdings (BTI) Limited	London	1	Financial Institution	100.0
243	Deutsche Holdings (Luxembourg) S.à r.l.	Luxembourg	1	Financial Holding Company	100.0
244	Deutsche Holdings (Malta) Ltd.	Valletta	1	Financial Holding Company	100.0
245	Deutsche Holdings Limited	London	1	Financial Holding Company	100.0
246	Deutsche Holdings No. 2 Limited	London	1	Financial Institution	100.0
247	Deutsche Holdings No. 3 Limited	London	1	Financial Institution	100.0
248	Deutsche Holdings No. 4 Limited	London	1	Financial Institution	100.0
249	Deutsche Immobilien Leasing GmbH	Duesseldorf	1	Financial Institution	100.0
250	Deutsche India Holdings Private Limited	Mumbai	1	Financial Holding Company	100.0
251	Deutsche International Corporate Services (Ireland) Limited	Dublin	1	Financial Institution	100.0
252	Deutsche International Corporate Services Limited	St. Helier	2	Other Enterprise	100.0
253	Deutsche International Custodial Services Limited	St. Helier	2	Other Enterprise	100.0
254	Deutsche Inversiones Dos S.A. (en Liquidación)	Santiago	1	Financial Institution	100.0
255	Deutsche Inversiones Limitada	Santiago	1	Financial Institution	100.0
256	Deutsche Investments (Netherlands) N.V.	Amsterdam	1	Financial Institution	100.0
257	Deutsche Investments India Private Limited	Mumbai	1	Financial Institution	100.0
258	Deutsche Investor Services Private Limited	Mumbai	2	Other Enterprise	100.0
259	Deutsche Knowledge Services Pte. Ltd.	Singapore	1	Ancillary Services Undertaking	100.0

Serial No.	Name of company	Domicile of company	Foot-note	Nature of activity	Share of Capital in %
260	Deutsche Leasing New York Corp.	New York	1	Financial Institution	100.0
261	Deutsche Mandatos S.A.	Buenos Aires	1	Financial Institution	100.0
262	Deutsche Master Funding Corporation	Wilmington	1	Financial Institution	100.0
263	Deutsche Mexico Holdings S.à r.l.	Luxembourg	1	Financial Holding Company	100.0
264	Deutsche Morgan Grenfell Group Public Limited Company	London	1	Financial Institution	100.0
265	Deutsche Mortgage & Asset Receiving Corporation	Wilmington	1	Ancillary Services Undertaking	100.0
266	Deutsche Mortgage Securities, Inc.	Wilmington	4	Financial Institution	100.0
267	Deutsche Nederland N.V.	Amsterdam	1	Ancillary Services Undertaking	100.0
268	Deutsche New Zealand Limited	Auckland	1	Financial Institution	100.0
269	Deutsche Nominees Limited	London	1	Financial Institution	100.0
270	Deutsche Oppenheim Family Office AG	Grasbrunn	1	Investment Firm	100.0
271	Deutsche Overseas Issuance New Zealand Limited	Auckland	1	Ancillary Services Undertaking	100.0
272	Deutsche Postbank Finance Center Objekt GmbH	Schuettringen	1	Ancillary Services Undertaking	100.0
273	Deutsche Private Asset Management Limited	London	2	Other Enterprise	100.0
274	Deutsche Securities (India) Private Limited	New Delhi	1	Securities Trading Firm	100.0
275	Deutsche Securities (Proprietary) Limited	Johannesburg	1	Investment Firm	100.0
276	Deutsche Securities (SA) (Proprietary) Limited	Johannesburg	1	Financial Institution	100.0
277	Deutsche Securities Asia Limited	Hong Kong	1	Investment Firm	100.0
278	Deutsche Securities Australia Limited	Sydney	1	Investment Firm	100.0
279	Deutsche Securities Inc.	Tokyo	1	Investment Firm	100.0
280	Deutsche Securities Israel Ltd.	Tel Aviv	1	Financial Institution	100.0
281	Deutsche Securities Korea Co.	Seoul	1	Investment Firm	100.0
282	Deutsche Securities Mauritius Limited	Ebène	1	Securities Trading Firm	100.0
283	Deutsche Securities Menkul Degerler A.S.	Istanbul	1	Securities Trading Firm	100.0
284	Deutsche Securities S.A.	Buenos Aires	1	Securities Trading Firm	100.0
285	Deutsche Securities Saudi Arabia (a closed joint stock company)	Riyadh	1	Investment Firm	100.0
286	Deutsche Securities SpA	Santiago	1	Financial Institution	100.0
287	Deutsche Securities Venezuela S.A.	Caracas	1	Financial Institution	100.0
288	Deutsche Securities, S.A. de C.V., Casa de Bolsa	Mexico City	1	Investment Firm	100.0
289	Deutsche Securitisation Australia Pty Limited	Sydney	1	Ancillary Services Undertaking	100.0
290	Deutsche StiftungsTrust GmbH	Frankfurt	2	Other Enterprise	100.0
291	Deutsche Strategic Investment Holdings Yugen Kaisha	Tokyo	1	Financial Institution	100.0
292	Deutsche Trust Company Limited Japan	Tokyo	2	Other Enterprise	100.0
293	Deutsche Trustee Company Limited	London	2	Other Enterprise	100.0
294	Deutsche Trustee Services (India) Private Limited	Mumbai	2	Other Enterprise	100.0
295	Deutsche Trustees Malaysia Berhad	Kuala Lumpur	2	Other Enterprise	100.0
296	Deutsches Institut für Altersvorsorge GmbH	Frankfurt	2	Other Enterprise	78.0
297	DG China Clean Tech Partners	Tianjin	3, 4, 5, 6	Financial Institution	49.9
298	DI Deutsche Immobilien Treuhandgesellschaft mbH	Frankfurt	2	Other Enterprise	100.0
299	DIB-Consult Deutsche Immobilien- und Beteiligungs-Beratungsgesellschaft mbH i.L.	Duesseldorf	2	Other Enterprise	100.0
300	DISCA Beteiligungsgesellschaft mbH	Duesseldorf	1	Financial Institution	100.0
301	DNU Nominees Pty Limited	Sydney	1	Ancillary Services Undertaking	100.0
302	DSL Portfolio GmbH & Co. KG	Bonn	1, 3	Ancillary Services Undertaking	100.0
303	DSL Portfolio Verwaltungs GmbH	Bonn	1	Financial Institution	100.0
304	DTS Nominees Pty Limited	Sydney	2	Other Enterprise	100.0
305	Durian (Luxembourg) S.à r.l.	Luxembourg	2	Other Enterprise	100.0
306	DWS Alternatives Global Limited	London	1	Asset Management Company	100.0
307	DWS Alternatives GmbH	Frankfurt	1	Asset Management Company	100.0
308	DWS Beteiligungs GmbH	Frankfurt	1	Financial Institution	99.1
309	DWS CH AG	Zurich	1	Investment Firm	100.0
310	DWS Distributors, Inc.	Wilmington	1	Investment Firm	100.0
311	DWS Far Eastern Investments Limited	Taipei	1	Securities Trading Firm	60.0
312	DWS Group GmbH & Co. KGaA	Frankfurt	1, 3	Financial Holding Company	79.5
313	DWS Group Services UK Limited	London	1	Ancillary Services Undertaking	100.0
314	DWS Grundbesitz GmbH	Frankfurt	1	Asset Management Company	99.9
315	DWS International GmbH	Frankfurt	1	Investment Firm	100.0
316	DWS Investment GmbH	Frankfurt	1	Asset Management Company	100.0
317	DWS Investment Management Americas, Inc.	Wilmington	1	Financial Institution	100.0
318	DWS Investments Australia Limited	Sydney	1	Investment Firm	100.0
319	DWS Investments Hong Kong Limited	Hong Kong	1	Investment Firm	100.0
320	DWS Investments Shanghai Limited	Shanghai	1	Investment Firm	100.0
321	DWS Investments Singapore Limited	Singapore	1	Investment Firm	100.0
322	DWS Investments UK Limited	London	1	Asset Management Company	100.0
323	DWS Management GmbH	Frankfurt	1	Financial Institution	100.0
324	DWS Real Estate GmbH	Frankfurt	1	Financial Institution	99.9
325	DWS Service Company	Wilmington	1	Ancillary Services Undertaking	100.0
326	DWS Trust Company	Salem	1	Investment Firm	100.0

Serial No.	Name of company	Domicile of company	Foot-note	Nature of activity	Share of Capital in %
327	DWS USA Corporation	Wilmington	1	Financial Holding Company	100.0
328	EC EUROPA IMMOBILIEN FONDS NR. 3 GmbH & CO. KG i.I.	Hamburg	2	Other Enterprise	65.2
329	Elba Finance GmbH	Eschborn	1	Financial Institution	100.0
330	Elizabethan Holdings Limited	George Town	4	Financial Institution	100.0
331	Elizabethan Management Limited	George Town	2	Other Enterprise	100.0
332	European Value Added I (Alternate G.P.) LLP	London	1	Financial Institution	100.0
333	Exinor SA (opening faillissement)	Bastogne	2	Other Enterprise	100.0
334	FARAMIR Beteiligungs- und Verwaltungs GmbH	Cologne	1	Financial Institution	100.0
335	Fiduciaria Sant' Andrea S.r.L.	Milan	2	Other Enterprise	100.0
336	Finanzberatungsgesellschaft mbH der Deutschen Bank	Berlin	4	Ancillary Services Undertaking	100.0
337	Franz Urbig- und Oscar Schlitter-Stiftung Gesellschaft mit beschränkter Haftung	Frankfurt	4	Ancillary Services Undertaking	100.0
338	Fünfte SAB Treuhand und Verwaltung GmbH & Co. Suhl "Rimbachzentrum" KG	Bad Homburg	2	Other Enterprise	74.9
339	G Finance Holding Corp.	Wilmington	1	Financial Institution	100.0
340	G918 Corp.	Wilmington	1	Financial Institution	100.0
341	Gemini Technology Services Inc.	Wilmington	1	Ancillary Services Undertaking	100.0
342	German American Capital Corporation	Lutherville-Timonium	1	Financial Institution	100.0
343	Greenwood Properties Corp.	New York	1, 5	Financial Institution	0.0
344	Grundstücksgesellschaft Frankfurt Bockenheimer Landstraße GbR	Troisdorf	2, 3	Other Enterprise	94.9
345	Grundstücksgesellschaft Kerpen-Sindorf Vogelrutherfeld GbR	Troisdorf	2, 3, 5	Other Enterprise	0.0
346	Grundstücksgesellschaft Leipzig Petersstraße GbR	Troisdorf	2, 3, 5	Other Enterprise	36.1
347	Grundstücksgesellschaft Wiesbaden Luisenstraße/Kirchgasse GbR	Berlin	2, 3	Other Enterprise	64.7
348	HTB Spezial GmbH & Co. KG	Cologne	3, 4	Financial Institution	100.0
349	Immobilienfonds Büro-Center Erfurt am Flughafen Bindersleben I GbR	Troisdorf	2, 3, 5	Other Enterprise	0.0
350	Immobilienfonds Büro-Center Erfurt am Flughafen Bindersleben II GbR	Troisdorf	2, 3, 5	Other Enterprise	50.0
351	Immobilienfonds Mietwohnhäuser Quadrath-Ichendorf GbR	Troisdorf	2, 3, 5	Other Enterprise	0.0
352	Immobilienfonds Wohn- und Geschäftshaus Köln-Blumenberg V GbR	Troisdorf	2, 3, 5	Other Enterprise	0.0
353	IOS Finance EFC, S.A.	Madrid	1	Financial Institution	55.3
354	ISTRON Beteiligungs- und Verwaltungs-GmbH	Cologne	1	Financial Institution	100.0
355	IVAF I Manager, S.à r.l.	Luxembourg	1	Financial Institution	100.0
356	J R Nominees (Pty) Ltd	Johannesburg	2	Other Enterprise	100.0
357	Joint Stock Company Deutsche Bank DBU	Kiev	1	Credit Institution	100.0
358	Jyogashima Godo Kaisha	Tokyo	1	Financial Institution	100.0
359	KEBA Gesellschaft für interne Services mbH	Frankfurt	1	Ancillary Services Undertaking	100.0
360	Kidson Pte Ltd	Singapore	1	Financial Institution	100.0
361	Konsul Inkasso GmbH	Essen	1	Ancillary Services Undertaking	100.0
362	Kradavimd UK Lease Holdings Limited (in members' voluntary liquidation)	London	1	Financial Institution	100.0
363	LA Water Holdings Limited	George Town	1	Financial Institution	75.0
364	LAWL Pte. Ltd.	Singapore	1	Financial Institution	100.0
365	Leasing Verwaltungsgesellschaft Waltersdorf mbH	Schoenefeld	1	Financial Institution	100.0
366	Leonardo III Initial GP Limited	London	4	Financial Institution	100.0
367	Maher Terminals Holdings (Toronto) Limited	Vancouver	1	Financial Institution	100.0
368	MEF I Manager, S. à r.l.	Luxembourg	1	Financial Institution	100.0
369	MHL Reinsurance Ltd.	Burlington	4	Reinsurance Undertaking	100.0
370	MIT Holdings, Inc.	Baltimore	1	Financial Institution	100.0
371	MortgageIT Securities Corp.	Wilmington	1	Ancillary Services Undertaking	100.0
372	MortgageIT, Inc.	New York	1	Financial Institution	100.0
373	Navegator - SGFTC, S.A.	Lisbon	1	Ancillary Services Undertaking	100.0
374	Nordwestdeutscher Wohnungsbauträger Gesellschaft mit beschränkter Haftung	Frankfurt	1	Financial Institution	100.0
375	norisbank GmbH	Bonn	1	Credit Institution	100.0
376	OOO "Deutsche Bank TechCentre"	Moscow	1	Ancillary Services Undertaking	100.0
377	OOO "Deutsche Bank"	Moscow	1	Credit Institution	100.0
378	Opal Funds (Ireland) Public Limited Company (in liquidation)	Dublin	4	Ancillary Services Undertaking	100.0
379	OPB Verwaltungs- und Beteiligungs-GmbH	Cologne	4	Financial Institution	100.0
380	OPB Verwaltungs- und Treuhand GmbH	Cologne	1	Financial Institution	100.0
381	OPB-Holding GmbH	Cologne	1	Financial Institution	100.0
382	OPB-Nona GmbH	Frankfurt	1	Financial Institution	100.0
383	OPB-Oktava GmbH	Cologne	4	Financial Institution	100.0
384	OPB-Quarta GmbH	Cologne	4	Financial Institution	100.0
385	OPB-Quinta GmbH	Cologne	4	Financial Institution	100.0
386	OPB-Septima GmbH	Cologne	4	Financial Institution	100.0

Serial No.	Name of company	Domicile of company	Foot-note	Nature of activity	Share of Capital in %
387	OPPENHEIM Capital Advisory GmbH	Cologne	1	Financial Institution	100.0
388	OPPENHEIM Flottenfonds V GmbH & Co. KG	Cologne	1, 3	Financial Institution	100.0
389	OPPENHEIM PRIVATE EQUITY Manager GmbH	Cologne	4	Financial Institution	100.0
390	OPPENHEIM PRIVATE EQUITY Verwaltungsgesellschaft mbH	Cologne	4	Financial Institution	100.0
391	OPS Nominees Pty Limited	Sydney	2	Other Enterprise	100.0
392	OVT Trust 1 GmbH	Cologne	2	Other Enterprise	100.0
393	OVV Beteiligungs GmbH	Cologne	4	Financial Institution	100.0
394	PADUS Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	1	Financial Institution	100.0
395	Pan Australian Nominees Pty Ltd	Sydney	1	Ancillary Services Undertaking	100.0
396	PB Factoring GmbH	Bonn	1	Financial Institution	100.0
397	PB Firmenkunden AG	Bonn	1	Ancillary Services Undertaking	100.0
398	PB International S.A.	Schuettringen	1	Financial Institution	100.0
399	PB Spezial-Investmentaktiengesellschaft mit Teilgesellschaftsvermögen	Bonn	1	Ancillary Services Undertaking	98.1
400	PBC Banking Services GmbH	Frankfurt	1	Financial Institution	100.0
401	PCC Services GmbH der Deutschen Bank	Essen	1	Ancillary Services Undertaking	100.0
402	Plantation Bay, Inc.	St. Thomas	2	Other Enterprise	100.0
403	Postbank Akademie und Service GmbH	Hameln	2	Other Enterprise	100.0
404	Postbank Beteiligungen GmbH	Bonn	1	Financial Institution	100.0
405	Postbank Direkt GmbH	Bonn	1	Financial Institution	100.0
406	Postbank Filialvertrieb AG	Bonn	1	Financial Institution	100.0
407	Postbank Finanzberatung AG	Hameln	2	Other Enterprise	100.0
408	Postbank Immobilien GmbH	Hameln	2	Other Enterprise	100.0
409	Postbank Immobilien und Baumanagement GmbH	Bonn	1	Financial Institution	100.0
410	Postbank Immobilien und Baumanagement GmbH & Co. Objekt Leipzig KG	Bonn	1, 3	Ancillary Services Undertaking	90.0
411	Postbank Leasing GmbH	Bonn	1	Financial Institution	100.0
412	Postbank Service GmbH	Essen	1	Ancillary Services Undertaking	100.0
413	Postbank Systems AG	Bonn	1	Ancillary Services Undertaking	100.0
414	PT Deutsche Sekuritas Indonesia	Jakarta	1	Investment Firm	99.0
415	PT. Deutsche Verdhana Sekuritas Indonesia	Jakarta	4, 5	Investment Firm	40.0
416	R.B.M. Nominees Pty Ltd	Sydney	1	Ancillary Services Undertaking	100.0
417	REO Properties Corporation	Wilmington	1	Ancillary Services Undertaking	100.0
418	RoPro U.S. Holding, Inc.	Wilmington	1	Financial Institution	100.0
419	Route 28 Receivables, LLC	Wilmington	1	Financial Institution	100.0
420	RREEF America L.L.C.	Wilmington	1	Financial Institution	100.0
421	RREEF China REIT Management Limited	Hong Kong	2	Other Enterprise	100.0
422	RREEF European Value Added I (G.P.) Limited	London	1	Financial Institution	100.0
423	RREEF Fund Holding Co.	George Town	1	Financial Institution	100.0
424	RREEF India Advisors Private Limited	Mumbai	2	Other Enterprise	100.0
425	RREEF Management L.L.C.	Wilmington	2	Other Enterprise	100.0
426	RTS Nominees Pty Limited	Sydney	2	Other Enterprise	100.0
427	SAB Real Estate Verwaltungs GmbH	Hameln	4	Financial Institution	100.0
428	SAGITA Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	1	Financial Institution	100.0
429	Sal. Oppenheim Alternative Investments GmbH	Cologne	1	Financial Institution	100.0
430	Sal. Oppenheim jr. & Cie. AG & Co. Kommanditgesellschaft auf Aktien	Cologne	1, 3	Credit Institution	100.0
431	Sal. Oppenheim jr. & Cie. Beteiligungs GmbH	Cologne	1	Financial Institution	100.0
432	Sal. Oppenheim jr. & Cie. Komplementär AG	Cologne	1	Financial Institution	100.0
433	SAPIO Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	1	Financial Institution	100.0
434	Sechste Salomon Beteiligungs- und Verwaltungsgesellschaft mbH	Cologne	1, 5	Financial Institution	0.0
435	Service Company Four Limited	Hong Kong	2	Other Enterprise	100.0
436	Sharps SP I LLC	Wilmington	1	Financial Institution	100.0
437	Structured Finance Americas, LLC	Wilmington	1	Investment Firm	100.0
438	Süddeutsche Vermögensverwaltung Gesellschaft mit beschränkter Haftung	Frankfurt	1	Financial Institution	100.0
439	TELO Beteiligungsgesellschaft mbH	Schoenefeld	1	Financial Institution	100.0
440	Tempurrite Leasing Limited	London	1	Financial Institution	100.0
441	Thai Asset Enforcement and Recovery Asset Management Company Limited	Bangkok	1	Financial Institution	100.0
442	Tianjin Deutsche AM Fund Management Co., Ltd.	Tianjin	4	Ancillary Services Undertaking	100.0
443	Treuinvest Service GmbH	Frankfurt	2	Other Enterprise	100.0
444	Triplereason Limited	London	1	Financial Institution	100.0
445	UKE Beteiligungs-GmbH	Troisdorf	2, 5	Financial Institution	0.0
446	UKE Grundstücksgesellschaft mbH	Troisdorf	1, 5	Financial Institution	0.0
447	UKE, s.r.o.	Belá	2	Other Enterprise	100.0
448	Ullmann - Esch Grundstücksgesellschaft Kirchnerstraße GbR	Troisdorf	2, 3, 5	Other Enterprise	0.0
449	Ullmann - Esch Grundstücksverwaltungsgesellschaft Disternich GbR	Troisdorf	2, 3, 5	Other Enterprise	0.0

Serial No.	Name of company	Domicile of company	Foot-note	Nature of activity	Share of Capital in %
450	Ullmann Ullmann Krockow Krockow Esch GbR	Troisdorf	2, 3, 5	Other Enterprise	0.0
451	Vesta Real Estate S.r.l.	Milan	1	Ancillary Services Undertaking	100.0
452	VÖB-ZVD Processing GmbH	Bonn	1	Payment Institution	100.0
453	Wealthspur Investment Ltd.	Labuan	4	Financial Institution	100.0
454	WEPLA Beteiligungsgesellschaft mbH	Frankfurt	1	Financial Institution	100.0
455	Whale Holdings S.à r.l.	Luxembourg	1	Financial Institution	100.0
456	World Trading (Delaware) Inc.	Wilmington	1	Financial Institution	100.0

Consolidated Structured Entities

Serial No.	Name of company	Domicile of company	Foot-note	Nature of activity	Share of Capital in %
457	Alguer Inversiones Designated Activity Company	Dublin	2	Financial Institution	
458	Alixville Invest, S.L.	Madrid	2	Other Enterprise	
459	Amber Investments S.à r.l.	Luxembourg	1	Financial Institution	100.0
460	Asset Repackaging Trust Five B.V.	Amsterdam	2, 7	Financial Institution	
461	Atena SPV S.r.l	Conegliano	1	Financial Institution	60.0
462	Atlas Investment Company 1 S.à r.l.	Luxembourg	2	Financial Institution	
463	Atlas Investment Company 2 S.à r.l.	Luxembourg	2	Financial Institution	
464	Atlas Investment Company 3 S.à r.l.	Luxembourg	2	Financial Institution	
465	Atlas Investment Company 4 S.à r.l.	Luxembourg	2	Financial Institution	
466	Atlas Portfolio Select SPC	George Town	4	Financial Institution	0.1
467	Atlas SICAV - FIS	Luxembourg	2, 7	Other Enterprise	
468	Australian Corporate Bond Trust	Sydney	2, 7	Other Enterprise	
469	Axia Insurance, Ltd.	Hamilton	2, 7	Other Enterprise	
470	Baltics Credit Solutions Latvia SIA	Riga	2	Financial Institution	
471	Cape Hatteras Marine Inc.	Road Town	2	Other Enterprise	
472	Cathay Capital (Labuan) Company Limited	Labuan	2	Other Enterprise	
473	Cathay Capital Company Limited	Ebène	4	Financial Institution	9.5
474	Cathay Strategic Investment Company Limited	Hong Kong	2	Financial Institution	
475	Cathay Strategic Investment Company No. 2 Limited	George Town	2	Financial Institution	
476	Cayman Reference Fund Holdings Limited	George Town	2	Ancillary Services Undertaking	
477	Charitable Luxembourg Four S.à r.l.	Luxembourg	2	Financial Institution	
478	Charitable Luxembourg Three S.à r.l.	Luxembourg	2	Financial Institution	
479	Charitable Luxembourg Two S.à r.l.	Luxembourg	2	Financial Institution	
480	Chartley World Inc.	Road Town	2	Other Enterprise	
481	CITAN Beteiligungsgesellschaft mbH	Frankfurt	1	Financial Institution	100.0
482	City Leasing (Thameside) Limited	London	1	Financial Institution	100.0
483	City Leasing Limited	London	1	Financial Institution	100.0
484	CLASS Limited	St. Helier	2, 7	Other Enterprise	
485	Collins Capital Low Volatility Performance II Special Investments, Ltd.	Road Town	2	Financial Institution	
486	Crofton Invest, S.L.	Madrid	2	Other Enterprise	
487	Danube Properties S.à r.l., en faillite	Luxembourg	2	Other Enterprise	25.0
488	Dariconic Designated Activity Company	Dublin	2	Financial Institution	
489	DB Apex Management Limited	George Town	1	Financial Institution	100.0
490	DB Aster II, LLC	Wilmington	1	Ancillary Services Undertaking	100.0
491	DB Aster III, LLC	Wilmington	1	Ancillary Services Undertaking	100.0
492	DB Aster, Inc.	Wilmington	1	Financial Institution	100.0
493	DB Aster, LLC	Wilmington	1	Ancillary Services Undertaking	100.0
494	DB Covered Bond S.r.l.	Conegliano	1	Financial Institution	90.0
495	DB Credit Investments S.à r.l.	Luxembourg	1	Financial Institution	100.0
496	DB Finance International GmbH	Eschborn	1	Financial Institution	100.0
497	DB Global Markets Multi-Strategy Fund I Ltd.	George Town	4	Financial Institution	100.0
498	DB Immobilienfonds 1 Wieland KG	Frankfurt	2	Other Enterprise	
499	DB Immobilienfonds 2 GmbH & Co. KG i.L.	Frankfurt	1	Financial Institution	74.0
500	DB Immobilienfonds 4 GmbH & Co. KG i.L.	Frankfurt	2	Other Enterprise	0.2
501	DB Immobilienfonds 5 Wieland KG	Frankfurt	2	Other Enterprise	
502	DB Impact Investment (GP) Limited	London	1	Financial Institution	100.0
503	DB Litigation Fee LLC	Wilmington	1	Financial Institution	100.0
504	DB Municipal Holdings LLC	Wilmington	1	Ancillary Services Undertaking	100.0
505	DB PWM	Luxembourg	2, 7	Other Enterprise	
506	DB PWM II - LiquidAlts UCITS (Euro)	Luxembourg	4	Other Enterprise	15.7
507	DB RC Holdings, LLC	Wilmington	1	Financial Institution	100.0
508	DB Real Estate Canadainvest 1 Inc.	Toronto	4	Financial Institution	100.0
509	DB Safe Harbour Investment Projects Limited (in members' voluntary liquidation)	London	1	Financial Institution	100.0
510	DB SPEARs/LIFERs Trust	Wilmington	4, 7	Ancillary Services Undertaking	0.0
511	DB STG Lux 10 S.à r.l.	Luxembourg	2	Other Enterprise	100.0
512	DB STG Lux 11 S.à r.l.	Luxembourg	2	Other Enterprise	100.0
513	DB STG Lux 12 S.à r.l.	Luxembourg	2	Other Enterprise	100.0
514	DB STG Lux 9 S.à r.l.	Luxembourg	2	Other Enterprise	100.0
515	DB Structured Finance 1 Designated Activity Company	Dublin	1	Financial Institution	100.0
516	DB Structured Finance 2 Designated Activity Company	Dublin	1	Financial Institution	100.0
517	dbInvestor Solutions 2 Public Limited Company	Dublin	2, 7	Financial Institution	
518	DBRE Global Real Estate Management US IB, L.L.C.	Wilmington	1	Financial Institution	100.0
519	DBRMS4	George Town	1, 3, 8	Financial Institution	100.0
520	DBX ETF Trust	Wilmington	2, 7	Other Enterprise	

Serial No.	Name of company	Domicile of company	Foot-note	Nature of activity	Share of Capital in %
521	De Heng Asset Management Company Limited	Beijing	2	Financial Institution	
522	DeAM Capital Protect 2019	Frankfurt	2	Other Enterprise	
523	Deloraine Spain SL	Madrid	2	Financial Institution	
524	Deutsche Bank Best Allocation - Protect 80	Luxembourg	2	Other Enterprise	
525	Deutsche Bank Best Allocation - Protect 90	Luxembourg	2	Other Enterprise	
526	Deutsche Bank Capital Finance LLC I	Wilmington	1	Financial Institution	100.0
527	Deutsche Bank Capital Finance Trust I	Wilmington	1, 5	Financial Institution	0.0
528	Deutsche Bank Contingent Capital LLC II	Wilmington	1	Financial Institution	100.0
529	Deutsche Bank Contingent Capital LLC V	Wilmington	1	Financial Institution	100.0
530	Deutsche Bank Contingent Capital Trust II	Wilmington	1, 5	Financial Institution	0.0
531	Deutsche Bank Contingent Capital Trust V	Wilmington	1, 5	Financial Institution	0.0
532	Deutsche Bank Luxembourg S.A. - Fiduciary Deposits	Luxembourg	2, 7	Other Enterprise	
533	Deutsche Bank Luxembourg S.A. - Fiduciary Note Programme	Luxembourg	2, 7	Other Enterprise	
534	Deutsche Bank SPEARs/LIFERs, Series DBE-7004 Trust	George Town	4	Ancillary Services Undertaking	5.0
535	Deutsche Bank SPEARs/LIFERs, Series DBE-7006 Trust	George Town	4	Ancillary Services Undertaking	14.3
536	Deutsche Bank SPEARs/LIFERs, Series DBE-7007 Trust	George Town	4. 9	Ancillary Services Undertaking	100.0
537	Deutsche Bank SPEARs/LIFERs, Series DBE-8002 Trust	Wilmington	4	Ancillary Services Undertaking	14.2
538	Deutsche Colombia S.A.S.	Bogotá	1	Securities Trading Firm	100.0
539	Deutsche DWS Income Trust - DWS Short Duration High Income Fund	Boston	2	Other Enterprise	100.0
540	Deutsche Postbank Funding LLC I	Wilmington	1	Financial Institution	100.0
541	Deutsche Postbank Funding LLC II	Wilmington	1	Financial Institution	100.0
542	Deutsche Postbank Funding LLC III	Wilmington	1	Financial Institution	100.0
543	Deutsche Postbank Funding Trust I	Wilmington	1, 5	Financial Institution	0.0
544	Deutsche Postbank Funding Trust II	Wilmington	1, 5	Financial Institution	0.0
545	Deutsche Postbank Funding Trust III	Wilmington	1, 5	Financial Institution	0.0
546	Deutsche Services Polska Sp. z o.o.	Warsaw	1	Ancillary Services Undertaking	100.0
547	Deutsche Strategic	Luxembourg	2, 7	Other Enterprise	
548	DWS Access S.A.	Luxembourg	2, 7	Financial Institution	
549	DWS Garant 80 FPI	Luxembourg	2	Other Enterprise	
550	DWS Invest	Luxembourg	2, 7	Other Enterprise	
551	DWS World Protect 90	Luxembourg	2	Other Enterprise	
552	DWS Zeitwert Protect	Luxembourg	2	Other Enterprise	
553	Dynamic Infrastructure Securities Fund LP	Wilmington	2	Financial Institution	
554	Earls Four Limited	George Town	2, 7	Other Enterprise	
555	EARLS Trading Limited	George Town	2	Financial Institution	
556	Einkaufszentrum "HVD Dresden" S.à.r.l & Co. KG i.l.	Cologne	2	Other Enterprise	
557	Eirles Three Designated Activity Company	Dublin	2, 7	Financial Institution	
558	Eirles Two Designated Activity Company	Dublin	2, 7	Financial Institution	
559	Elmo Funding GmbH	Eschborn	1	Financial Institution	100.0
560	Elmo Leasing Vierzehnte GmbH	Eschborn	1	Ancillary Services Undertaking	100.0
561	Emerald Asset Repackaging Designated Activity Company	Dublin	1	Financial Institution	100.0
562	Emerging Markets Capital Protected Investments Limited	George Town	2, 7	Other Enterprise	
563	Emeris	George Town	2	Securities Trading Firm	
564	Encina Property Finance Designated Activity Company	Dublin	2	Financial Institution	
565	Epicuro SPV S.r.l.	Conegliano	2	Financial Institution	
566	Erste Frankfurter Hoist GmbH	Eschborn	1	Financial Institution	100.0
567	Eurohome (Italy) Mortgages S.r.l.	Conegliano	2	Financial Institution	
568	European Strategic Real Estate Fund ICAV	Dublin	2	Other Enterprise	
569	Fondo Privado de Titulizacion Activos Reales 1 B.V.	Amsterdam	2	Other Enterprise	
570	Fondo Privado de Titulización PYMES I Limited	Dublin	2	Financial Institution	
571	FRANKFURT CONSULT GmbH	Frankfurt	1	Financial Institution	100.0
572	G.O. IB-US Management, L.L.C.	Wilmington	1	Financial Institution	100.0
573	GAC-HEL, Inc.	Wilmington	1	Ancillary Services Undertaking	100.0
574	Gladyr Spain, S.L.	Madrid	2	Financial Institution	
575	Global Markets Fundo de Investimento Multimercado	Rio de Janeiro	4	Financial Institution	100.0
576	Global Markets III Fundo de Investimento Multimercado - Crédito Privado e Investimento No Exterior	Rio de Janeiro	4	Financial Institution	100.0
577	Global Opportunities Co-Investment Feeder, LLC	Wilmington	2	Financial Institution	
578	Global Opportunities Co-Investment, LLC	George Town	2	Financial Institution	
579	Groton Invest, S.L.	Madrid	2	Financial Institution	
580	GWC-GAC Corp.	Wilmington	1	Ancillary Services Undertaking	100.0
581	Hamildak Designated Activity Company	Dublin	2	Financial Institution	
582	Histria Inversiones Designated Activity Company	Dublin	2	Financial Institution	
583	Iberia Inversiones Designated Activity Company	Dublin	2	Financial Institution	
584	Iberia Inversiones II Designated Activity Company	Dublin	2	Financial Institution	
585	India Debt Opportunities Fund	Mumbai	2	Ancillary Services Undertaking	
586	Infrastructure Holdings (Cayman) SPC	George Town	2	Financial Institution	
587	Inn Properties S.à r.l., en faillite	Luxembourg	2	Other Enterprise	25.0

Serial No.	Name of company	Domicile of company	Foot-note	Nature of activity	Share of Capital in %
588	Investor Solutions Limited	St. Helier	2, 7	Other Enterprise	
589	Isar Properties S.à r.l., en faillite	Luxembourg	2	Other Enterprise	25.0
590	IVAF (Jersey) Limited	St. Helier	2	Ancillary Services Undertaking	
591	Kelona Invest, S.L.	Madrid	2	Other Enterprise	
592	Kelsey Street LLC	Wilmington	1	Ancillary Services Undertaking	100.0
593	KOMPASS 3 Beteiligungsgesellschaft mbH	Duesseldorf	4	Financial Institution	50.0
594	KOMPASS 3 Erste Beteiligungsgesellschaft mbH & Co. Euro KG i.L.	Duesseldorf	1, 3	Ancillary Services Undertaking	96.1
595	KOMPASS 3 Zweite Beteiligungsgesellschaft mbH & Co. USD KG i.L.	Duesseldorf	1, 3	Ancillary Services Undertaking	97.0
596	Kratus Inversiones Designated Activity Company	Dublin	2	Financial Institution	
597	La Fayette Dedicated Basket Ltd.	Road Town	2	Securities Trading Firm	
598	Ledyard, S.L.	Madrid	2	Other Enterprise	
599	Lenthorp Financial Corp.	Road Town	2	Other Enterprise	
600	Leo Consumo 1 S.r.l.	Conegliano	2	Financial Institution	
601	Leo Consumo 2 S.r.l.	Conegliano	1	Financial Institution	70.0
602	87 Leonard Development LLC	Wilmington	1	Ancillary Services Undertaking	100.0
603	Leonardo Charitable 1 Limited	George Town	2	Ancillary Services Undertaking	
604	Leonardo Secondary Opportunities Fund III (Alternate GP of GP), LP	Wilmington	2	Financial Institution	
605	Leonardo Secondary Opportunities Fund III (GP) Limited	George Town	2	Financial Institution	
606	Leonardo Secondary Opportunities Fund III (Limited Partner) Limited	George Town	2	Financial Institution	
607	Lerma Investments 2018, Sociedad Limitada	Madrid	2	Financial Institution	
608	Life Mortgage S.r.l.	Conegliano	2	Financial Institution	
609	Lindsell Finance Limited	St. Julian's	1	Ancillary Services Undertaking	100.0
610	Lockwood Invest, S.L.	Madrid	2	Financial Institution	
611	London Industrial Leasing Limited	London	1	Financial Institution	100.0
612	Lupus alpha Low Beta Risk-Premium	Frankfurt	2	Other Enterprise	100.0
613	Macondo Spain SL	Madrid	2	Other Enterprise	100.0
614	Malabo Holdings Designated Activity Company	Dublin	2	Financial Institution	
615	Maxima Alpha Bomaral Limited (in liquidation)	St. Helier	2	Securities Trading Firm	
616	Merlin I	George Town	2	Securities Trading Firm	
617	Merlin XI	George Town	2	Securities Trading Firm	
618	Meseta Inversiones Designated Activity Company	Dublin	2	Financial Institution	
619	Micro-E Finance S.r.l.	Rome	2	Financial Institution	
620	Midsel Limited (in members' voluntary liquidation)	London	2	Other Enterprise	100.0
621	Moon Leasing Limited (in members' voluntary liquidation)	London	1	Financial Institution	100.0
622	Motion Picture Productions One GmbH & Co. KG	Frankfurt	1, 3	Financial Institution	100.0
623	MPP Beteiligungsgesellschaft mbH	Frankfurt	1	Financial Institution	100.0
624	Natureza Maritima SA	Panama City	2	Other Enterprise	
625	NCW Holding Inc.	Vancouver	1	Financial Institution	100.0
626	New 87 Leonard, LLC	Wilmington	1	Financial Institution	100.0
627	Nineco Leasing Limited (in members' voluntary liquidation)	London	1	Financial Institution	100.0
628	Oasis Securitisation S.r.l.	Conegliano	1, 5	Financial Institution	0.0
629	Oder Properties S.à r.l., en faillite	Luxembourg	2	Other Enterprise	25.0
630	OPAL, en liquidation volontaire	Luxembourg	2, 7	Other Enterprise	
631	Opus Niestandaryzowany Sekurytyzacyjny Fundusz Inwestycyjny Zamkniety	Warsaw	2	Financial Institution	
632	Oran Limited	George Town	2	Financial Institution	
633	OTTAM Mexican Capital Trust Designated Activity Company	Dublin	2, 7	Financial Institution	
634	Palladium Securities 1 S.A.	Luxembourg	2, 7	Financial Institution	
635	PanAsia Funds Investments Ltd.	George Town	2, 7	Financial Institution	
636	PARTS Funding, LLC	Wilmington	1	Financial Institution	100.0
637	PD Germany Funding Company II, Ltd.	George Town	2	Financial Institution	
638	PD Germany Funding Company V, Ltd.	George Town	2	Financial Institution	
639	PEIF II SLP Feeder, L.P.	Edinburgh	4	Financial Institution	0.7
640	Peruda Leasing Limited	London	1	Financial Institution	100.0
641	PERUS 1 S.à r.l.	Luxembourg	2	Financial Institution	
642	PES Carry and Employee Co-Investment Feeder SCSp	Munsbach	4	Financial Institution	1.3
643	Philippine Opportunities for Growth and Income (SPV-AMC), INC.	Makati City	1	Financial Institution	95.0
644	Pinehurst Securities SA	Luxembourg	2, 7	Financial Institution	
645	Primus Solutions ICAV	Dublin	2	Other Enterprise	
646	Private Equity Solutions SCSp	Munsbach	1	Financial Institution	99.1
647	Quantum 13 LLC	Wilmington	1	Ancillary Services Undertaking	100.0
648	Quartz No. 1 S.A.	Luxembourg	1, 5	Financial Institution	0.0
649	Rattray Business Inc.	Road Town	2	Other Enterprise	
650	Reference Capital Investments Limited	London	1	Financial Institution	100.0
651	REO Properties Corporation II	Wilmington	1, 5	Ancillary Services Undertaking	0.0

Serial No.	Name of company	Domicile of company	Foot-note	Nature of activity	Share of Capital in %
652	Residential Mortgage Funding Trust	Toronto	2	Financial Institution	
653	Rhine Properties S.à r.l., en faillite	Luxembourg	2	Other Enterprise	25.0
654	Riviera Real Estate	Paris	2	Other Enterprise	100.0
655	Romareda Holdings Designated Activity Company	Dublin	2	Financial Institution	
656	RREEF DCH, L.L.C.	Wilmington	1	Financial Institution	100.0
657	SABRE Securitisation Limited	Sydney	2	Other Enterprise	
658	Samburg Invest, S.L.	Madrid	2	Other Enterprise	
659	SCB Alpspitze UG (haftungsbeschränkt)	Frankfurt	2	Financial Institution	
660	Sebbon Holdings Corp.	Road Town	2	Other Enterprise	
661	Select Access Investments Limited	Sydney	2, 7	Other Enterprise	
662	SHINSEI Trust TBI (PJ Skytree)	Tokyo	2	Other Enterprise	
663	Singer Island Tower Suite LLC	Wilmington	1	Ancillary Services Undertaking	100.0
664	Sixco Leasing Limited (in members' voluntary liquidation)	London	1	Financial Institution	100.0
665	SOLIDO Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	1	Financial Institution	100.0
666	Somkid Immobiliare S.r.l.	Conegliano	2	Other Enterprise	100.0
667	SP Mortgage Trust	Wilmington	2	Other Enterprise	100.0
668	Strategic Global Opportunities Limited - Class A Main USD	Nassau	2	Financial Institution	
669	Swabia 1 Designated Activity Company	Dublin	2	Financial Institution	
670	Swabia 1. Vermögensbesitz-GmbH	Eschborn	1	Financial Institution	100.0
671	Tagus - Sociedade de Titularização de Creditos, S.A.	Lisbon	1	Financial Institution	100.0
672	The Canary Star Trust	George Town	4	Ancillary Services Undertaking	100.0
673	The Emperor Star Trust	George Town	4	Ancillary Services Undertaking	100.0
674	The India Debt Opportunities Fund Limited	Ebène	2	Ancillary Services Undertaking	
675	Trave Properties S.à r.l., en faillite	Luxembourg	2	Other Enterprise	25.0
676	TRS Aria LLC	Wilmington	4	Financial Institution	100.0
677	TRS Birch II LTD	George Town	1	Financial Institution	100.0
678	TRS Birch LLC	Wilmington	2	Other Enterprise	100.0
679	TRS Cypress II LTD	George Town	1	Financial Institution	100.0
680	TRS Elm II LTD	George Town	1	Financial Institution	100.0
681	TRS Leda LLC	Wilmington	4	Financial Institution	100.0
682	TRS Maple II LTD	George Town	1	Financial Institution	100.0
683	TRS Oak II LTD	George Town	1	Financial Institution	100.0
684	TRS Oak LLC	Wilmington	2	Other Enterprise	100.0
685	TRS Poplar II LTD	George Town	1	Financial Institution	100.0
686	TRS Scorpio LLC	Wilmington	4	Financial Institution	100.0
687	TRS Spruce II LTD	George Town	1	Financial Institution	100.0
688	TRS SVCO LLC	Wilmington	4	Financial Institution	100.0
689	TRS Sycamore II LTD	George Town	1	Financial Institution	100.0
690	TRS Tupelo II LTD	George Town	1	Financial Institution	100.0
691	TRS Venor LLC	Wilmington	4	Financial Institution	100.0
692	TRS Walnut II LTD	George Town	1	Financial Institution	100.0
693	TRS Walnut LLC	Wilmington	2	Other Enterprise	100.0
694	Vanguard MSCI International Small Companies Index ETF	Melbourne	2	Other Enterprise	58.8
695	VCJ Lease S.à r.l.	Luxembourg	2, 9	Other Enterprise	95.0
696	Vermögensfondmandat Flexible (80% teilgeschützt)	Luxembourg	2	Other Enterprise	
697	Wedverville Spain, S.L.	Madrid	2	Other Enterprise	
698	Wendelstein 2017-1 UG (haftungsbeschränkt)	Frankfurt	2	Financial Institution	
699	Wibaux Invest, S.L.	Madrid	2	Other Enterprise	
700	Xtrackers (IE) Public Limited Company	Dublin	2, 7	Other Enterprise	0.4
701	ZALLUS Beteiligungsgesellschaft mbH	Duesseldorf	4	Financial Institution	50.0
702	ZARAT Beteiligungsgesellschaft mbH	Duesseldorf	4	Financial Institution	50.0
703	ZARAT Beteiligungsgesellschaft mbH & Co. Leben II KG i.L.	Duesseldorf	1, 3	Ancillary Services Undertaking	98.1
704	ZELAS Beteiligungsgesellschaft mbH	Duesseldorf	4	Financial Institution	50.0
705	ZELAS Beteiligungsgesellschaft mbH & Co. Leben I KG i.L.	Duesseldorf	1, 3	Ancillary Services Undertaking	98.2
706	Zumirez Drive LLC	Wilmington	1	Ancillary Services Undertaking	100.0
707	ZURET Beteiligungsgesellschaft mbH	Duesseldorf	4	Financial Institution	50.0

Companies accounted for at equity

Serial No.	Name of company	Domicile of company	Foot-note	Nature of activity	Share of Capital in %
708	AKA Ausfuhrkredit-Gesellschaft mit beschränkter Haftung	Frankfurt		Credit Institution	26.9
709	Argantis GmbH i.L.	Cologne		Financial Institution	50.0
710	Baigo Capital Partners Fund 1 Parallel 1 GmbH & Co. KG	Bad Soden am Taunus		Financial Institution	49.8
711	BANKPOWER GmbH Personaldienstleistungen	Frankfurt		Other Enterprise	30.0
712	Bestra Gesellschaft für Vermögensverwaltung mit beschränkter Haftung	Duesseldorf		Financial Institution	49.0
713	BFDB Tax Credit Fund 2011, Limited Partnership	New York	9	Financial Institution	99.9
714	Comfund Consulting Limited	Bangalore		Other Enterprise	30.0
715	Craigs Investment Partners Limited	Tauranga		Securities Trading Firm	49.9
716	Cyber Defence Alliance Limited	London	10	Other Enterprise	0.0
717	DB Real Estate Global Opportunities IB (Offshore), L.P.	Camana Bay		Financial Institution	34.3
718	DBG Eastern Europe II L.P.	St. Helier		Financial Institution	25.9
719	Deutsche Börse Commodities GmbH	Eschborn		Other Enterprise	16.2
720	Deutsche Gulf Finance	Riyadh		Financial Institution	29.1
721	Deutsche Regis Partners, Inc.	Makati City		Securities Trading Firm	49.0
722	Deutsche TISCO Investment Advisory Company Limited	Bangkok		Securities Trading Firm	49.0
723	Deutsche Zurich Pensiones Entidad Gestora de Fondos de Pensiones, S.A.	Barcelona		Other Enterprise	50.0
724	Deutscher Pensionsfonds Aktiengesellschaft	Bonn		Other Enterprise	25.1
725	DIL Internationale Leasinggesellschaft mbH	Duesseldorf		Financial Institution	50.0
726	Domus Beteiligungsgesellschaft der Privaten Bausparkassen mbH	Berlin		Financial Holding Company	21.1
727	dwins GmbH	Frankfurt		Other Enterprise	21.2
728	Elbe Properties S.à r.l.	Luxembourg		Other Enterprise	25.0
729	eolec	Issy-les-Moulineaux		Other Enterprise	33.3
730	equiNotes Management GmbH	Duesseldorf		Other Enterprise	50.0
731	EVROENERGIAKI S.A.	Athens		Other Enterprise	40.0
732	Fünfte SAB Treuhand und Verwaltung GmbH & Co. "Leipzig-Magdeburg" KG	Bad Homburg		Other Enterprise	41.2
733	Fünfte SAB Treuhand und Verwaltung GmbH & Co. Dresden "Louisenstraße" KG	Bad Homburg		Other Enterprise	30.6
734	G.O. IB-SIV Feeder, L.L.C.	Wilmington		Financial Institution	15.7
735	German Public Sector Finance B.V.	Amsterdam		Financial Institution	50.0
736	Gesellschaft für Kreditsicherung mit beschränkter Haftung	Berlin		Financial Institution	36.7
737	giropay GmbH	Frankfurt		Other Enterprise	33.3
738	Gordian Knot Limited	London		Other Enterprise	24.7
739	Grundstücksgesellschaft Bürohäuser Köln Rheinhallen GbR	Berlin	3	Other Enterprise	15.6
740	Grundstücksgesellschaft Karlsruhe Kaiserstraße GbR	Troisdorf	3	Other Enterprise	3.4
741	Grundstücksgesellschaft Köln Messe 15-18 GbR	Troisdorf	3	Other Enterprise	10.5
742	Grundstücksgesellschaft Köln Oppenheimstraße GbR	Troisdorf	3, 10	Other Enterprise	0.0
743	Grundstücksgesellschaft Köln-Merheim Winterberger Straße GbR	Troisdorf	3, 10	Other Enterprise	0.0
744	Grundstücksgesellschaft Köln-Ossendorf VI GbR	Troisdorf	3	Other Enterprise	44.9
745	Grundstücksgesellschaft München Synagogenplatz GbR	Troisdorf	3, 10	Other Enterprise	0.0
746	Grundstücksgesellschaft Schillingsrotter Weg GbR	Troisdorf	3, 10	Other Enterprise	0.0
747	Harvest Fund Management Co., Ltd.	Shanghai		Investment Firm	30.0
748	Huarong Rongde Asset Management Company Limited	Beijing		Financial Institution	40.7
749	ILV Immobilien-Leasing Verwaltungsgesellschaft Düsseldorf mbH	Duesseldorf		Financial Institution	50.0
750	Immobilienfonds Bürohaus Düsseldorf Grafenberg GbR	Troisdorf	3	Other Enterprise	10.0
751	Immobilienfonds Bürohaus Düsseldorf Parsevalstraße GbR	Cologne	3	Other Enterprise	7.0
752	Immobilienfonds Köln-Deutz Arena und Mantelbebauung GbR	Troisdorf	3	Other Enterprise	7.7
753	Immobilienfonds Köln-Ossendorf II GbR	Troisdorf	3	Other Enterprise	9.7
754	iSwap Limited	London		Financial Institution	14.0
755	IZI Düsseldorf Informations-Zentrum Immobilien Gesellschaft mit beschränkter Haftung	Duesseldorf		Financial Institution	21.1
756	IZI Düsseldorf Informations-Zentrum Immobilien GmbH & Co. Kommanditgesellschaft	Duesseldorf		Other Enterprise	22.9
757	KVD Singapore Pte. Ltd.	Singapore		Financial Institution	30.1
758	Lion Residential Holdings S.à r.l.	Luxembourg		Financial Institution	17.4
759	North Coast Wind Energy Corp.	Vancouver	9	Other Enterprise	96.7
760	P.F.A.B. Passage Frankfurter Allee Betriebsgesellschaft mbH	Berlin		Other Enterprise	22.2
761	PERILLA Beteiligungsgesellschaft mbH	Duesseldorf		Financial Institution	50.0
762	Prestipay S.p.A.	Udine		Financial Institution	40.0
763	Private Equity Gesellschaft bürgerlichen Rechts	Cologne	3, 10	Financial Institution	0.0
764	Relax Holding S.à r.l.	Luxembourg		Other Enterprise	20.0
765	REON - Park Wiatrowy I Sp. z o.o.	Warsaw		Other Enterprise	50.0
766	REON-Park Wiatrowy II Sp. z o.o.	Warsaw		Other Enterprise	50.0

Serial No.	Name of company	Domicile of company	Foot-note	Nature of activity	Share of Capital in %
767	REON-Park Wiatrowy IV Sp. z o.o.	Warsaw		Other Enterprise	50.0
768	Robuterra AG	Zurich	10	Financial Institution	0.0
769	Sakaras Holding Limited (in dissolution)	Naxxar	10	Financial Institution	0.0
770	SRC Security Research & Consulting GmbH	Bonn		Other Enterprise	22.5
771	Starpool Finanz GmbH	Berlin		Other Enterprise	49.9
772	Strategic Fintech Investments S.A.	Luxembourg		Financial Institution	8.6
773	Teesside Gas Transportation Limited	London		Other Enterprise	45.0
774	Triton Beteiligungs GmbH i.L.	Frankfurt		Financial Institution	33.1
775	U.S.A. ITCF XCI L.P.	New York	9	Financial Institution	99.9
776	UKEM Motoryacht Medici Mangusta GbR	Troisdorf	3, 10	Other Enterprise	0.0
777	Ullmann Krockow Esch GbR	Troisdorf	3, 10	Other Enterprise	0.0
778	Ullmann, Krockow, Esch Luftverkehrsgesellschaft bürgerlichen Rechts	Troisdorf	3, 10	Other Enterprise	0.0
779	Volbroker.com Limited	London		Financial Institution	22.5
780	Weser Properties S.à r.l.	Luxembourg		Other Enterprise	25.0
781	zeitinvest-Service GmbH	Eschborn		Other Enterprise	25.0
782	Zhong De Securities Co., Ltd	Beijing		Investment Firm	33.3
783	ZINDUS Beteiligungsgesellschaft mbH	Duesseldorf		Financial Institution	50.0
784	ZYRUS Beteiligungsgesellschaft mbH	Schoenefeld		Financial Institution	25.0
785	ZYRUS Beteiligungsgesellschaft mbH & Co. Patente I KG i.L.	Schoenefeld		Other Enterprise	20.4

Other Companies, where the holding exceeds 20 %

Serial No.	Name of company	Domicile of company	Foot-note	Nature of activity	Share of Capital in %
786	ABATE Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
787	ABRI Beteiligungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
788	Acamar Holding S.A.	Luxembourg	9, 11	Other Enterprise	95.0
789	ACHTE PAXAS Treuhand- und Beteiligungsgesellschaft mbH	Duesseldorf	11	Other Enterprise	50.0
790	ACHTUNDZWANZIGSTE PAXAS Treuhand- und Beteiligungsgesellschaft mbH	Duesseldorf	11	Other Enterprise	50.0
791	ACHTZEHNTE PAXAS Treuhand- und Beteiligungsgesellschaft mbH	Duesseldorf	11	Other Enterprise	50.0
792	ACIS Beteiligungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
793	ACTIO Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
794	Adara S.A.	Luxembourg	9, 11	Other Enterprise	95.0
795	ADEO Beteiligungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
796	ADLAT Beteiligungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
797	ADMANU Beteiligungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
798	Agena S.A.	Luxembourg	9, 11	Other Enterprise	95.0
799	AGLOM Beteiligungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
800	AGUM Beteiligungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
801	ALANUM Beteiligungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
802	ALMO Beteiligungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
803	ALTA Beteiligungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
804	ANDOT Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
805	APUR Beteiligungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
806	Asia Core Real Estate Fund SCA SICAV-RAIF	Luxembourg	11	Other Enterprise	24.0
807	ATAUT Beteiligungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
808	AVOC Beteiligungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
809	BAKTU Beteiligungsgesellschaft mbH	Schoenefeld	11	Financial Institution	50.0
810	BALIT Beteiligungsgesellschaft mbH	Schoenefeld	11	Financial Institution	50.0
811	Banks Island General Partner Inc.	Toronto	11	Financial Institution	50.0
812	Benefit Trust GmbH	Luetzen	1, 12, 13	Financial Institution	100.0
813	BIMES Beteiligungsgesellschaft mbH	Schoenefeld	11	Financial Institution	50.0
814	BLI Beteiligungsgesellschaft für Leasinginvestitionen mbH	Duesseldorf	11	Financial Institution	33.2
815	BLI Internationale Beteiligungsgesellschaft mbH	Duesseldorf	11	Financial Institution	32.0
816	BrisConnections Holding Trust	Kedron	14	Other Enterprise	35.6
817	BrisConnections Investment Trust	Kedron	14	Other Enterprise	35.6
818	DB Advisors SICAV	Luxembourg	12, 15	Other Enterprise	95.6
819	DB Placement, LLC	Wilmington	9, 11	Other Enterprise	100.0
820	DB RC Investments II, LLC	Wilmington	9, 11	Financial Institution	99.9
821	Deutsche River Investment Management Company S.à r.l., en faillite clôture	Luxembourg	11	Financial Institution	49.0
822	DIL Fonds-Beteiligungsgesellschaft mbH i.L.	Duesseldorf	12	Financial Institution	100.0
823	DONARUM Holding GmbH	Duesseldorf	11	Financial Institution	50.0
824	DREIUNDZWANZIGSTE PAXAS Treuhand- und Beteiligungsgesellschaft mbH	Duesseldorf	11	Other Enterprise	50.0
825	DREIZEHNTE PAXAS Treuhand- und Beteiligungsgesellschaft mbH	Duesseldorf	11	Other Enterprise	50.0
826	DRITTE Fonds-Beteiligungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
827	DRITTE PAXAS Treuhand- und Beteiligungsgesellschaft mbH	Duesseldorf	11	Other Enterprise	50.0
828	EINUNDZWANZIGSTE PAXAS Treuhand- und Beteiligungsgesellschaft mbH	Duesseldorf	11	Other Enterprise	50.0
829	Eisler Capital (TA) Ltd	London	14	Other Enterprise	33.3
830	ELC Logistik-Centrum Verwaltungs-GmbH	Erfurt	11	Financial Institution	50.0
831	ELFTE PAXAS Treuhand- und Beteiligungsgesellschaft mbH	Duesseldorf	11	Other Enterprise	50.0
832	FÜNFTE Fonds-Beteiligungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
833	FÜNFTE PAXAS Treuhand- und Beteiligungsgesellschaft mbH	Duesseldorf	11	Other Enterprise	50.0
834	FÜNFUNDZWANZIGSTE PAXAS Treuhand- und Beteiligungsgesellschaft mbH i.L.	Duesseldorf	11	Other Enterprise	50.0
835	FÜNFZEHNTE PAXAS Treuhand- und Beteiligungsgesellschaft mbH	Duesseldorf	11	Other Enterprise	50.0
836	Glor Music Production GmbH & Co. KG	Tegernsee	14	Other Enterprise	26.6
837	GLOR Music Production II GmbH & Co. KG	Tegernsee	14	Other Enterprise	21.3
838	Grundstücksvermietungsgesellschaft Wilhelmstr. mbH i.L.	Gruenwald	12	Other Enterprise	100.0
839	HR "Simone" GmbH & Co. KG i.l.	Jork	14	Other Enterprise	24.3
840	Immobilien-Vermietungsgesellschaft Schumacher GmbH & Co. Objekt Rolandufer KG	Berlin	11	Financial Institution	20.5
841	Intermodal Finance I Ltd.	George Town	11	Other Enterprise	49.0
842	IOG Denali Upton, LLC	Dover	14	Other Enterprise	23.0
843	IOG NOD I, LLC	Dover	14	Other Enterprise	22.5
844	Isaac Newton S.A.	Luxembourg	9, 11	Other Enterprise	95.0
845	Kinneil Leasing Company	London	3, 11	Financial Institution	35.0

Serial No.	Name of company	Domicile of company	Foot-note	Nature of activity	Share of Capital in %
846	M Cap Finance Mittelstandsfonds GmbH & Co. KG	Frankfurt	9, 14, 16, 17	Financial Institution	77.1
847	Maestrale Projects (Holding) S.A.	Luxembourg	11	Financial Institution	49.7
848	MCT Südafrika 3 GmbH & Co. KG i.l.	Hamburg	14	Other Enterprise	38.4
849	Metro plus Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	40.0
850	MT "CAPE BEALE" Tankschiffahrts GmbH & Co. KG	Hamburg	14	Other Enterprise	32.2
851	MT "KING DANIEL" Tankschiffahrts GmbH & Co. KG	Hamburg	14	Other Enterprise	30.1
852	MT "KING DOUGLAS" Tankschiffahrts GmbH & Co. KG	Hamburg	14	Other Enterprise	30.1
853	MT "KING EDWARD" Tankschiffahrts GmbH & Co. KG	Hamburg	14	Other Enterprise	35.3
854	MT "KING ERIC" Tankschiffahrts GmbH & Co. KG	Hamburg	14	Other Enterprise	34.5
855	NBG Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
856	NEUNTE PAXAS Treuhand- und Beteiligungsgesellschaft mbH	Duesseldorf	11	Other Enterprise	50.0
857	NEUNZEHNTE PAXAS Treuhand- und Beteiligungsgesellschaft mbH	Duesseldorf	11	Other Enterprise	50.0
858	New Energy Biomasse Hellas GmbH i.L.	Duesseldorf	11	Other Enterprise	50.0
859	Nexus Infrastruktur Beteiligungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
860	NOFA Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
861	OPPENHEIM Buy Out GmbH & Co. KG i.L.	Cologne	3, 5, 12	Financial Institution	27.7
862	PADEM Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
863	PAGUS Beteiligungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
864	PALDO Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
865	PANIS Grundstücks-Vermietungsgesellschaft mbH i.l.	Duesseldorf	11	Financial Institution	50.0
866	PANTUR Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
867	PAXAS Treuhand- und Beteiligungsgesellschaft mbH	Duesseldorf	11	Other Enterprise	50.0
868	PEDIS Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
869	PEDUM Beteiligungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
870	PENDIS Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
871	PENTUM Beteiligungsgesellschaft mbH	Duesseldorf	11	Other Enterprise	50.0
872	PERGOS Beteiligungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
873	PERGUM Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
874	PERLIT Mobilien-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
875	PERLU Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
876	PERNIO Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
877	PERXIS Beteiligungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
878	PETA Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
879	PONTUS Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
880	PRADUM Beteiligungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
881	PRASEM Beteiligungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
882	PRATES Grundstücks-Vermietungsgesellschaft mbH	Schoenefeld	11	Financial Institution	50.0
883	PRISON Grundstücks-Vermietungsgesellschaft mbH	Schoenefeld	11	Financial Institution	50.0
884	Private Equity Invest Beteiligungs GmbH	Duesseldorf	11	Financial Institution	50.0
885	Private Equity Life Sciences Beteiligungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
886	PUDU Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
887	PUKU Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
888	PURIM Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
889	QUANTIS Grundstücks-Vermietungsgesellschaft mbH	Schoenefeld	11	Financial Institution	50.0
890	QUELLUM Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
891	QUOTAS Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
892	SABIS Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
893	SALIX Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
894	SALUS Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
895	SALUS Grundstücks-Vermietungsgesellschaft mbH & Co. Objekt Dresden KG	Duesseldorf	12	Financial Institution	58.5
896	SANCTOR Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
897	SANDIX Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
898	SANO Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
899	SARIO Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
900	SATINA Mobilien-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
901	SCANDO Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
902	SCHEDA Grundstücks-Vermietungsgesellschaft mbH i.L.	Duesseldorf	11	Financial Institution	50.0
903	Schumacher Beteiligungsgesellschaft mbH	Duesseldorf	11	Financial Institution	33.2
904	SCITOR Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
905	SCITOR Grundstücks-Vermietungsgesellschaft mbH & Co. Objekt Heiligenstadt KG i.L.	Duesseldorf	12, 18	Financial Institution	71.1
906	SCUDO Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	12	Financial Institution	100.0
907	SECHSTE Fonds-Beteiligungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
908	SECHSTE PAXAS Treuhand- und Beteiligungsgesellschaft mbH	Duesseldorf	11	Other Enterprise	50.0
909	SECHZEHNTE PAXAS Treuhand- und Beteiligungsgesellschaft mbH	Duesseldorf	11	Other Enterprise	50.0

Serial No.	Name of company	Domicile of company	Foot-note	Nature of activity	Share of Capital in %
910	SEDO Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	12	Financial Institution	100.0
911	SEGES Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
912	SEGU Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
913	SELEKTA Grundstücksverwaltungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
914	SENA Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
915	SENA Grundstücks-Vermietungsgesellschaft mbH & Co. Objekt Fehrenbach KG i.L.	Duesseldorf	12	Other Enterprise	94.7
916	SENA Grundstücks-Vermietungsgesellschaft mbH & Co. Objekt Kamenz KG	Duesseldorf	9, 11	Financial Institution	100.0
917	SERICA Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
918	SIDA Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
919	SIEBTE PAXAS Treuhand- und Beteiligungsgesellschaft mbH	Duesseldorf	11	Other Enterprise	50.0
920	SIEBZEHNTE PAXAS Treuhand- und Beteiligungsgesellschaft mbH	Duesseldorf	11	Other Enterprise	50.0
921	SIFA Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	12	Financial Institution	100.0
922	SILANUS Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
923	SILEX Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
924	SILEX Grundstücks-Vermietungsgesellschaft mbH & Co. Objekt Berlin KG i.L.	Duesseldorf	1, 12	Financial Institution	83.8
925	SILIGO Mobilien-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
926	SILUR Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
927	SIMILA Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
928	SOLATOR Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
929	SOLON Grundstücks-Vermietungsgesellschaft mbH	Schoenefeld	11	Financial Institution	50.0
930	SOLON Grundstücks-Vermietungsgesellschaft mbH & Co. Objekt Heizkraftwerk Halle KG i.L.	Halle/Saale	11	Other Enterprise	30.5
931	SOLUM Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
932	SOMA Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
933	SOREX Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
934	SOSPITA Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
935	SPINO Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	12	Other Enterprise	100.0
936	SPLENDOR Grundstücks-Vermietungsgesellschaft mbH	Schoenefeld	11	Financial Institution	50.0
937	STABLON Grundstücks-Vermietungsgesellschaft mbH i.L.	Duesseldorf	12	Financial Institution	100.0
938	STAGIRA Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
939	STATOR Heizkraftwerk Frankfurt (Oder) Beteiligungsgesellschaft mbH	Schoenefeld	12	Financial Institution	100.0
940	SUBLICA Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
941	SUBU Mobilien-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
942	SULPUR Grundstücks-Vermietungsgesellschaft mbH	Schoenefeld	11	Financial Institution	50.0
943	SUPERA Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
944	SUPLION Beteiligungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
945	SUSA Mobilien-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
946	SUSIK Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
947	TABA Grundstücks-Vermietungsgesellschaft mbH	Schoenefeld	11	Financial Institution	50.0
948	TACET Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
949	TAGO Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
950	TAGUS Beteiligungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
951	TAKIR Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	12	Financial Institution	100.0
952	TEBOR Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
953	TEMATIS Grundstücks-Vermietungsgesellschaft mbH i.L.	Duesseldorf	12	Financial Institution	100.0
954	TERRUS Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	12	Financial Institution	100.0
955	TESATUR Beteiligungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
956	TESATUR Beteiligungsgesellschaft mbH & Co. Objekt Halle I KG	Duesseldorf	1, 12, 19	Financial Institution	100.0
957	TESATUR Beteiligungsgesellschaft mbH & Co. Objekt Nordhausen I KG	Duesseldorf	1, 12	Financial Institution	100.0
958	TIEDO Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
959	TIEDO Grundstücks-Vermietungsgesellschaft mbH & Co. Objekt Lager Nord KG	Duesseldorf	11	Financial Institution	25.0
960	TOSSA Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	12	Financial Institution	100.0
961	TRAGO Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
962	TREMA Grundstücks-Vermietungsgesellschaft mbH	Berlin	11	Financial Institution	50.0
963	TRENTO Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
964	TRINTO Beteiligungsgesellschaft mbH	Schoenefeld	11	Financial Institution	50.0
965	TRIPLA Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	12	Financial Institution	100.0
966	TUDO Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
967	TUGA Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
968	TYRAS Beteiligungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
969	VARIS Beteiligungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
970	VCL Lease S.à r.l.	Luxembourg	9, 11	Other Enterprise	95.0
971	VIERTE Fonds-Beteiligungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
972	VIERTE PAXAS Treuhand- und Beteiligungsgesellschaft mbH	Duesseldorf	11	Other Enterprise	50.0
973	VIERUNDZWANZIGSTE PAXAS Treuhand- und Beteiligungsgesellschaft mbH	Duesseldorf	11	Other Enterprise	50.0

Serial No.	Name of company	Domicile of company	Foot-note	Nature of activity	Share of Capital in %
974	VIERZEHNTE PAXAS Treuhand- und Beteiligungsgesellschaft mbH	Duesseldorf	11	Other Enterprise	50.0
975	Wohnungs-Verwaltungsgesellschaft Moers mbH	Duesseldorf	11	Financial Institution	50.0
976	Wohnungsgesellschaft HEGEMAG GmbH i.L.	Darmstadt	11	Financial Institution	50.0
977	XARUS Grundstücks-Vermietungsgesellschaft mbH	Schoenefeld	11	Financial Institution	50.0
978	XELLUM Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
979	XENTIS Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
980	XERA Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
981	ZABATUS Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
982	ZAKATUR Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Other Enterprise	50.0
983	ZARGUS Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
984	ZEA Beteiligungsgesellschaft mbH	Schoenefeld	11	Financial Institution	25.0
985	ZEHNTE PAXAS Treuhand- und Beteiligungsgesellschaft mbH	Duesseldorf	11	Other Enterprise	50.0
986	ZENO Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
987	ZEPTOS Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
988	ZEREVIS Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
989	ZERGUM Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
990	ZIDES Grundstücks-Vermietungsgesellschaft mbH	Schoenefeld	11	Financial Institution	50.0
991	ZIMBEL Grundstücks-Vermietungsgesellschaft mbH	Schoenefeld	11	Financial Institution	50.0
992	ZINUS Grundstücks-Vermietungsgesellschaft mbH	Schoenefeld	11	Financial Institution	50.0
993	ZIRAS Grundstücks-Vermietungsgesellschaft mbH	Schoenefeld	11	Financial Institution	50.0
994	ZITON Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
995	ZITUS Grundstücks-Vermietungsgesellschaft mbH	Schoenefeld	11	Financial Institution	50.0
996	ZONTUM Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
997	ZORUS Grundstücks-Vermietungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
998	ZWANZIGSTE PAXAS Treuhand- und Beteiligungsgesellschaft mbH	Duesseldorf	11	Other Enterprise	50.0
999	ZWEITE Fonds-Beteiligungsgesellschaft mbH	Duesseldorf	11	Financial Institution	50.0
1000	ZWEITE PAXAS Treuhand- und Beteiligungsgesellschaft mbH	Duesseldorf	11	Other Enterprise	50.0
1001	ZWEIUNDZWANZIGSTE PAXAS Treuhand- und Beteiligungsgesellschaft mbH	Duesseldorf	11	Other Enterprise	50.0
1002	ZWÖLFTE PAXAS Treuhand- und Beteiligungsgesellschaft mbH	Duesseldorf	11	Other Enterprise	50.0
1003	ZYLUM Beteiligungsgesellschaft mbH	Schoenefeld	11	Financial Institution	25.0

Holdings in large corporations, where the holding exceeds 5 % of the voting rights

Serial No.	Name of company	Domicile of company	Foot-note	Nature of activity	Share of Capital in %
1004	ABRAAJ Holdings (in provisional liquidation)	George Town		Financial Institution	8.8
1005	BBB Bürgschaftsbank zu Berlin-Brandenburg GmbH	Berlin		Financial Institution	5.6
1006	BÜRGSCHAFTSBANK BRANDENBURG GmbH	Potsdam		Financial Institution	8.5
1007	Bürgschaftsbank Mecklenburg-Vorpommern GmbH	Schwerin		Financial Institution	8.4
1008	Bürgschaftsbank Sachsen GmbH	Dresden		Financial Institution	6.3
1009	Bürgschaftsbank Sachsen-Anhalt GmbH	Magdeburg		Financial Institution	8.2
1010	Bürgschaftsbank Schleswig-Holstein Gesellschaft mit beschränkter Haftung	Kiel		Financial Institution	5.6
1011	Bürgschaftsbank Thüringen GmbH	Erfurt		Financial Institution	8.7
1012	Bürgschaftsgemeinschaft Hamburg GmbH	Hamburg		Financial Institution	8.7
1013	China Polymetallic Mining Limited	George Town		Other Enterprise	5.7
1014	MTS S.p.A.	Rome		Other Enterprise	5.0
1015	Prader Bank S.p.A.	Bolzano		Credit Institution	9.0
1016	Private Export Funding Corporation	Wilmington		Financial Institution	6.0
1017	PT Trikomsel OKE Tbk	Jakarta		Other Enterprise	12.0
1018	Saarländische Investitionskreditbank Aktiengesellschaft	Saarbruecken		Credit Institution	11.8
1019	Silver Creek Low Vol Strategies, Ltd.	George Town		Securities Trading Firm	10.5
1020	Yensai.com Co., Ltd.	Tokyo		Investment Firm	7.1

Confirmations

Independent Auditor's Report

To Deutsche Bank Aktiengesellschaft, Frankfurt am Main

Report on the Audit of the Consolidated Financial Statements and of the Group Management Report

Opinions

We have audited the consolidated financial statements of Deutsche Bank Aktiengesellschaft, Frankfurt am Main, and its subsidiaries (the Group), which comprise the consolidated balance sheet as at December 31, 2018, and the consolidated statement of income, consolidated statement of comprehensive income, consolidated statement of changes in equity and consolidated statement of cash flows for the financial year from January 1 to December 31, 2018, and notes to the consolidated financial statements, including a summary of significant accounting policies. In addition, we have audited the group management report of Deutsche Bank Aktiengesellschaft, Frankfurt am Main, for the financial year from January 1 to December 31, 2018.

In our opinion, on the basis of the knowledge obtained in the audit,

- the accompanying consolidated financial statements comply, in all material respects, with IFRSs as adopted by the EU, and the additional requirements of German commercial law pursuant to Section 315e (1) HGB [Handelsgesetzbuch – German Commercial Code] and, in compliance with these requirements, give a true and fair view of the assets, liabilities, and financial position of the Group as at December 31, 2018, and of its financial performance for the financial year from January 1 to December 31, 2018, and
- the accompanying group management report as a whole provides an appropriate view of the Group's position. In all material respects, this group management report is consistent with the consolidated financial statements, complies with German legal requirements and appropriately presents the opportunities and risks of future development.

Pursuant to Section 322(3) sentence 1 HGB, we declare that our audit has not led to any reservations relating to the legal compliance of the consolidated financial statements and of the group management report.

Basis for the Opinions

We conducted our audit of the consolidated financial statements and of the group management report in accordance with Section 317 HGB and the EU Audit Regulation No 537/2014 (referred to subsequently as "EU Audit Regulation") and in compliance with German Generally Accepted Standards for Financial Statement Audits promulgated by the Institut der Wirtschaftsprüfer [Institute of Public Auditors in Germany] (IDW). Our responsibilities under those requirements and principles are further described in the "Auditor's Responsibilities for the Audit of the Consolidated Financial Statements and of the Group Management Report" section of our auditor's report. We are independent of the group entities in accordance with the requirements of European law and German commercial and professional law, and we have fulfilled our other German professional responsibilities in accordance with these requirements. In addition, in accordance with Article 10 (2) point (f) of the EU Audit Regulation, we declare that we have not provided non-audit services prohibited under Article 5 (1) of the EU Audit Regulation. We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our opinions on the consolidated financial statements and on the group management report.

Key Audit Matters in the Audit of the Consolidated Financial Statements

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the consolidated financial statements for the financial year from January 1 to December 31, 2018. These matters were addressed in the context of our audit of the consolidated financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

Unobservable Inputs used for the Valuation of Level 3 Financial Instruments

With regard to significant accounting policies and critical accounting estimates, we refer to Note 1 of the consolidated financial statements (sections “Financial Assets and Liabilities at Fair Value through Profit or Loss” and “Financial Assets at Fair Value through Other Comprehensive Income”). For information on Level 3 financial instruments, we refer to Note 13 of the consolidated financial statements.

The Financial Statement Risk

Level 3 financial instruments consist of financial assets and liabilities. As of the reporting date, the Group reports Level 3 financial assets held at fair value in the amount of EUR 24.6bn, representing 3.9 % of the financial assets at fair value and 1.8 % of total assets. Level 3 financial liabilities amount to EUR 7.7bn, representing 1.7 % of the financial liabilities at fair value and 0.5 % of total liabilities, respectively.

By definition, market prices are not observable for the valuation of these financial instruments. The fair values are therefore to be determined on the basis of accepted valuation methods. These valuation methods may consist of complex models and can include assumptions and estimates over unobservable inputs which require judgment.

The financial statement risk arises particularly with respect to complex valuation models or unobservable valuation parameters that are inappropriately used in determining fair values of Level 3 financial instruments.

Our Audit Approach

To determine our audit approach, we initially evaluated the general suitability and the potential for misstatements in models and parameters including unobservable inputs and, where applicable, associated valuation adjustments used for the valuation of Level 3 financial instruments.

Based on our risk assessment, we established an audit approach including control and substantive testing.

In order to assess the adequacy of the Group’s internal controls regarding the valuation of financial instruments and determination of unobservable inputs therein we evaluated the design and implementation and tested operating effectiveness of key controls. We also made use of KPMG-internal valuation specialists as needed. Audit procedures included but were not limited to controls over:

- monthly independent price verification procedures performed by the Group to assure the adequacy of input parameters used for Level 3 financial instruments,
- model validation of valuation models used by the Group including respective governance and
- calculation and recording of valuation adjustments for credit risk, funding cost, and others required by accounting standards to determine fair values.

Where we had findings regarding design or effectiveness of controls, we tested additional compensating controls. We considered our audit results when designing nature and scope of additional substantive audit procedures.

We performed substantive procedures amongst others on a risk-based sample of Level 3 financial instruments. These include in particular:

- performance of independent price verification, with usage of KPMG-internal valuation specialists on selected individual transactions of financial instruments,
- independent recalculation of selected valuation adjustments and
- performance of procedures to determine adequacy of models used, including key inputs and their usage in the respective pricing models.

Our Observations

Based on the results of our key controls testing and substantive audit procedures, we consider models and related parameters used for valuing Level 3 financial instruments to be appropriate.

Determination of Probabilities of Default and Loss Given Default in Stage 3 of the homogenous Portfolio under the Accounting Standard IFRS 9

For a qualitative and quantitative description of the significant accounting policies and estimates, including the implications of the first-time adoption of IFRS 9, we refer to Note 2 in the consolidated financial statements (section “Recently Adopted Accounting Standards”). For information on the allowance under IFRS 9, we refer to Note 21 of the consolidated financial statements.

The Financial Statement Risk

Deutsche Bank applied the new accounting standard "IFRS 9 - Financial Instruments" for the first time at the beginning of the financial year 2018 in accordance with IFRS requirements. One of the main new aspects of IFRS 9 is that for financial assets not measured at fair value, irrevocable loan commitments and guarantees, the provision for loan losses is calculated according to expected credit losses instead of incurred credit losses. The calculation reflects an expected credit loss of one year or, depending on the respective stage allocation of the loan, a lifetime expected credit loss. For this purposes, financial assets are allocated to either stage one, two or three.

The calculation of the expected credit loss in Stage 1 is based on an the probability of default within the next 12 months. If there is a significant increase in credit risk since initial recognition and, in consequence, the loan has been transferred to Stage 2, the probability of default is determined based on the remaining lifetime of the financial asset. To determine the allowance for Stage 3 (credit-impaired loans), the Bank distinguishes between the homogeneous and the non-homogeneous portfolio. The allowance for loans in the homogeneous portfolio is calculated using a time-dependent loss given default. Within the non-homogeneous portfolio, the allowance is calculated using the DCF method.

As of December 31st 2018 Deutsche Bank reports an allowance for credit losses of financial assets in the amount of EUR 4.3 bn, thereof for loans classified as Stage 1 EUR 0.5 bn, Stage 2 EUR 0.5 bn and Stage 3 EUR 3.3 bn. The net increase to the credit loss provisions in the 2018 financial year amounted to EUR 507 mn. Thereof for Stage 1 EUR 66 mn, Stage 2 EUR 78 mn and for Stage 3 EUR 362 mn for financial assets.

The financial statement risk arises particularly from the estimation of the probabilities of default for the various stages not being appropriate, as these contain assumptions and are used as an essential or central element for measuring risk provisioning (e.g. 12-month probability of default, lifetime probability of default, criterion for staging). The main estimation uncertainties are based in particular on the qualitative assessment criteria on the borrower to determine the rating. In addition, significant estimation uncertainties arise with regard to the macroeconomic factors to be used to determine the probabilities of default.

Furthermore a financial statement risk arises from an inappropriate calculation of the time-dependent loss given default in the homogenous portfolio stage 3. Under IFRS 9, essentially this is determined using the "Loss Given Default" parameter, which is derived from the internal liquidation status. In this respect, there arises the risk that not all relevant risk factors are properly derived.

Our Audit Approach

Based on our risk assessment and our evaluation of the risk of error, we established an audit approach including control and substantive testing as a basis for our audit opinion. Accordingly, we have performed the following audit procedures, amongst others:

First, we assessed the adequacy of the models used to determine a borrower's rating, their transition into a 12-month probability of default and adjustment for the remaining lifetime of the loan. For this purpose, we have involved KPMG's internal modelling specialists. In the next step, we assessed the adequacy and appropriateness of information for evaluating the credit-worthiness of a borrower as well as of the process to incorporate this information into the models.

In this context, we have obtained a comprehensive insight into the internal control system to ensure that the information relevant to the models is properly determined and recorded. We put our main focus on the determination of the probabilities of default as well as the estimation of macroeconomic variables and their modelling to include them into the probabilities of default.

Furthermore we have assessed the modelling and appropriateness of the process for determining the Stage 3 loss given default for the homogenous portfolio.

In our controls testing, we evaluated design, implementation and operating effectiveness of key controls. We performed the following audit procedures as part of our controls testing including, but not limited to:

- The approval of policies and key methodological documents for the allowance calculation,
- The determination and recording of probabilities of default and the validation of the models used to determine the probabilities of default,
- The estimation, review and approval of time-dependent migration matrices for the calculation of time-dependent probabilities of default,
- The approval of the selection of relevant macroeconomic factors as well as the review of their appropriateness,
- The accuracy of the calculation of the Loss Given Default for the homogenous portfolio in stage 3,
- The annual validation of the models used to determine the Loss Given Default in the homogenous portfolio.

For the IT systems and individual data processing systems used in this context, we have verified the effectiveness of application controls with the involvement of our IT specialists.

In addition, we performed substantive audit procedures. For a sample of transactions, chosen consciously from a materiality and risk point of view, we have assessed whether the assumptions on credit quality used in the rating models to determine the probabilities of default were derived appropriately from internal information and are consistent with externally available information. To audit the adjustment of those probabilities of default to the remaining lifetime we assessed the appropriate determination of the corresponding migration matrices. In addition, we reviewed the determination of macroeconomic factors and their application within the model to determine the allowance for loan losses.

For the time-dependent LGDs in Stage 3 of the homogenous portfolio we have reconstructed the calculation based on an independent recalculation and checked the correct allocation to individual transactions for a sample of elements that was selected consciously from a materiality and risk point of view.

Finally, on the basis of a conscious, risk and materiality based sample, we checked the appropriateness of the regular validation of the models relevant for determining the allowance for loan losses.

Our Observations

The probabilities of default as well as the loss given default in Stage 3 of the homogeneous portfolio used to determine the allowance for losses on financial assets under IFRS 9 have been appropriately derived.

Recognition and Measurement of Deferred Tax Assets

For a description of the significant accounting policies and critical accounting estimates as well as underlying assumptions for the recognition and measurement of deferred tax assets, we refer to Note 1 of the consolidated financial statements “Significant Accounting Policies and Critical Accounting Estimates” (section “Income Taxes”). For information on deferred tax assets, we refer to Note 36 of the consolidated financial statements.

The Financial Statement Risk

The consolidated financial statements contain deferred tax assets of net EUR 6.7bn.

Recognition and measurement of deferred tax assets contain judgment and besides objective factors also numerous estimates regarding future taxable profit and the usability of unused tax losses and tax credits.

The financial statement risk arises particularly from future utilization of the deferred tax assets being estimated inappropriately. The estimation of future utilization depends on future taxable profit potential based on the business plan, that is subjected to uncertainties and taking into account the expected development of key value-determining assumptions and parameters included therein. These include in particular assumptions on the development of pre-tax earnings, the influence of potential special items, and permanent effects which determine the taxable profit available in the future. Such estimates must also consider current political and economic developments (such as the implementation of the referendum on the withdrawal of the United Kingdom from the European Union) and jurisdiction specific tax considerations.

Our Audit Approach

We conducted a risk assessment to gain an understanding of the applicable tax laws and regulations relevant to the Group. Based on that, we performed both tests of related internal key controls and substantive audit procedures with the assistance of KPMG-internal tax specialists. As part of our audit, we examined, amongst others, the test of design, the implementation and operating effectiveness of internal controls with respect to recognition of deferred tax assets in the Group.

Furthermore, we performed substantive audit procedures amongst others for a risk-based sample of deferred tax assets in different countries. This included, but was not limited to:

- the assessment of the Group's methodology used for the recognition and measurement of deferred tax assets in accordance with IAS 12,
- assessment of the appropriateness of parameters applied to the business plans, including sub-plans for relevant countries where appropriate. In doing so, we scrutinized the appropriateness of the planning parameters applied that are relevant to the Group's significant subdivisions by considering potential positive and negative indicators regarding recoverability or occurrence of planning parameters and assumptions, and
- review of the reconciliation from pre-tax income to the planned taxable profit for certain countries.

Our Observations

The utilization of the deferred tax assets is assessed to be appropriate on the basis of future taxable income potential on the basis of the business plan, taking into account the expected development of significant value-determining assumptions and parameters contained therein.

IT Access Management in the financial reporting process

For a description of internal controls over the financial reporting process including IT access management controls, we refer to the group management report in section “Internal Control over Financial Reporting”.

The Financial Statement Risk

The financial reporting process is highly dependent on information technology and the completeness and accuracy of electronic data due to the size and the complexity of the Group. The inappropriate granting of or ineffective monitoring of access rights to IT systems therefore presents a risk to the accuracy of financial reporting. This risk applies in particular to systems with access rights which do not correspond to a “need to know” or “need to have” principle, i.e. access is granted solely based on the requirements of the role and no further authorization requirement is in place, or the segregation of duties principle, i.e. between IT and specialist departments as well as between development and application operations.

Unauthorized or extensive access rights and a lack of segregation of duties cause a risk of intended or unintended manipulation of data that could have a material effect on the completeness and accuracy of the financial statements. Therefore, the design of and compliance with respective precautions is a significant matter for our audit.

Our Audit Approach

We obtained an understanding of the Group’s business IT related control environment. Furthermore we conducted a risk assessment and identified IT applications, databases and operating systems that are relevant to our audit.

For relevant IT-dependent controls within the financial reporting process (so-called IT application controls) we identified supporting general IT controls and evaluated their design, implementation, and operating effectiveness. We tested key controls particularly in the area of access protection and linkage of such controls to the completeness and accuracy of financial reporting. Our audit procedures included, but were not limited to, the following:

- Tests of controls regarding initial access granted to IT systems for new employees or employees changing roles, whether that access was subject to appropriate screening and if it was approved by an authorized person in line with the role based authorization concept.
- Test of controls regarding removal of employee or former employee access rights within an appropriate period of time after having changed roles or leaving the company.
- Test of controls regarding the appropriateness of system access rights for privileged or administrative authorizations (superuser) being subject to a restrictive authorization assignment procedure and the regular review thereof.

Moreover, we conducted specific testing procedures in the area of password protection, security settings regarding modifications for applications, databases, and operating systems, the segregation of specialist department and IT users and the segregation of employees responsible for program development and those responsible for system operations. Where we had findings regarding design or effectiveness of controls, we tested additional compensating controls for other compensating evidence.

Considering the results of our control tests, we decided on the nature and scope of further substantive audit procedures to be performed. Particularly, where we identified user authorizations not being withdrawn on time after leaving the Bank, we performed an inspection of the activity log of individual users to determine whether unauthorized activities had occurred that would materially affect the completeness and accuracy of financial information processed.

Also, by tests of detail we assessed if program developers had approval rights in the modification process and whether they were able to carry out any modifications in the productive versions of applications, databases, and operating systems to assess if these responsibilities were functionally segregated. We have also analyzed the segregation of duties on critical trading and payment systems in order to assess whether the segregation of duties between front and back offices has been adhered to.

Our Observations
Based on the results of our key controls testing and substantive audit procedures, we consider the IT access management in the financial reporting process to generally address the requirements for completeness and accuracy of financial reporting relevant data.

Other Information

Management is responsible for the other information. The other information comprises of the remaining parts in the annual report, with the exception of the audited consolidated financial statements and the group management report and our auditor's report.

Our opinions on the consolidated financial statements and the group management report do not cover the other information and consequently we do not express an opinion or any other form of assurance conclusion thereon.

In connection with our audit, our responsibility is to read the other information and, in so doing, to consider whether the other information

- is materially inconsistent with the consolidated financial statements, with the group management report, or our knowledge obtained in the audit, or
- otherwise appears to be materially misstated.

Responsibilities of Management and the Supervisory Board for the Consolidated Financial Statements and the Group Management Report

Management is responsible for the preparation of the consolidated financial statements that comply, in all material respects, with IFRSs as adopted by the EU and the additional requirements of German commercial law pursuant to Section 315e (1) HGB and that the consolidated financial statements, in compliance with these requirements, give a true and fair view of the assets, liabilities, financial position, and financial performance of the Group. In addition, management is responsible for such internal control as they have determined necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, management is responsible for assessing the Group's ability to continue as a going concern. They also have the responsibility for disclosing, as applicable, matters related to going concern. In addition, they are responsible for financial reporting based on the going concern basis of accounting unless there is an intention to liquidate the Group or to cease operations, or there is no realistic alternative but to do so.

Furthermore, management is responsible for the preparation of the group management report that, as a whole, provides an appropriate view of the Group's position and is, in all material respects, consistent with the consolidated financial statements, complies with German legal requirements, and appropriately presents the opportunities and risks of future development. In addition, management is responsible for such arrangements and measures (systems) as they have considered necessary to enable the preparation of the group management report that is in accordance with the applicable German legal requirements, and to be able to provide sufficient appropriate evidence for the assertions in the group management report.

The supervisory board is responsible for overseeing the Group's financial reporting process for the preparation of the consolidated financial statements and of the group management report.

Auditor's Responsibilities for the Audit of the Consolidated Financial Statements and of the Group Management Report

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and whether the group management report as a whole provides an appropriate view of the Group's position and, in all material respects, is consistent with the consolidated financial statements and the knowledge obtained in the audit, complies with the German legal requirements and appropriately presents the opportunities and risks of future development, as well as to issue an auditor's report that includes our opinions on the consolidated financial statements and on the group management report.

Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Section 317 HGB, and the EU Audit Regulation and in compliance with German Generally Accepted Standards for Financial Statement Audits promulgated by the Institut der Wirtschaftsprüfer (IDW) will always detect a material misstatement. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements and this group management report.

We exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the consolidated financial statements and the group management report, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinions. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit of the consolidated financial statements and of arrangements and measures (systems) relevant to the audit of the group management report in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of these systems.
- Evaluate the appropriateness of accounting policies used by management and the reasonableness of estimates made by the management and related disclosures.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in the auditor's report to the related disclosures in the consolidated financial statements and in the group management report or, if such disclosures are inadequate, to modify our respective opinions. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Group to cease to be able to continue as a going concern.
- Evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements present the underlying transactions and events, in a manner that the consolidated financial statements give a true and fair view of the assets, liabilities, financial position and financial performance of the Group in compliance with IFRSs as adopted by the EU, and the additional requirements of German commercial law pursuant to Section 315e (1) HGB.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express opinions on the consolidated financial statements and on the group management report. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our opinions.
- Evaluate the consistency of the group management report with the consolidated financial statements, its conformity with German law, and the view of the Group's position it provides.
- Perform audit procedures on the prospective information presented by management in the group management report. On the basis of sufficient appropriate audit evidence we evaluate, in particular, the significant assumptions used by management as a basis for the prospective information, and evaluate the proper derivation of the prospective information from these assumptions. We do not express a separate opinion on the prospective information and on the assumptions used as a basis. There is a substantial unavoidable risk that future events will differ materially from the prospective information.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide those charged with governance with a statement that we have complied with the relevant independence requirements, and communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, the related safeguards.

From the matters communicated with those charged with governance, we determine those matters that were of most significance in the audit of the consolidated financial statements of the current period and are therefore the key audit matters. We describe these matters in our auditor's report unless law or regulation precludes public disclosure about the matter.

Other Legal and Regulatory Requirements

Further Information pursuant to Article 10 of the EU Audit Regulation

We were elected as group auditor of by the annual general meeting on May 24, 2018. We have been engaged by the Supervisory Board on July 24, 2018. We or our predecessor firms have served as auditor to Deutsche Bank Aktiengesellschaft and its predecessor companies since 1952.

We declare that the opinions expressed in this auditor's report are consistent with the additional report to the Audit Committee pursuant to Article 11 of the EU Audit Regulation (long-form audit report).

We provided the following services in addition to the financial statement audit, as disclosed in Note 43 – "Supplementary Information to the Consolidated Financial Statements according to Sections 297 (1a) / 315a HGB and the return on assets according to Article 26a of the German Banking Act".

German Public Auditor Responsible for the Engagement

The German Public Auditor responsible for the engagement is Burkhard Böth.

Frankfurt am Main, March 15, 2019

KPMG AG
Wirtschaftsprüfungsgesellschaft

Pukropski
Wirtschaftsprüfer

Böth
Wirtschaftsprüfer

Responsibility Statement by the Management Board

To the best of our knowledge, and in accordance with the applicable reporting principles, the consolidated financial statements give a true and fair view of the assets, liabilities, financial position and profit or loss of the Group, and the Group management report includes a fair review of the development and performance of the business and the position of the Group, together with a description of the principal opportunities and risks associated with the expected development of the Group.

Frankfurt am Main, March 12, 2019

Christian Sewing

Garth Ritchie

Karl von Rohr

Frank Kuhnke

Stuart Lewis

Sylvie Matherat

James von Moltke

Werner Steinmüller

Frank Strauß

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Corporate Governance Statement according to Sections 289f and 315d of the German Commercial Code / Corporate Governance Report

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All information presented in this Corporate Governance Statement according to §§ 289f, 315d German Commercial Code / Corporate Governance Report is shown as of February 15, 2019.

Management Board and Supervisory Board

Management Board

The Management Board of Deutsche Bank AG is responsible for the management of the company in accordance with the law, the Articles of Association of Deutsche Bank AG and the Terms of Reference for the Management Board with the objective of creating sustainable value in the interests of the company. It considers the interests of shareholders, employees and other company-related stakeholders. The members of the Management Board are collectively responsible for managing the bank's business. The Management Board, as the Group Management Board, manages Deutsche Bank Group in accordance with uniform guidelines; it exercises general control over all Group companies.

The Management Board decides on all matters prescribed by law and the Articles of Association and ensures compliance with the legal requirements and internal guidelines (compliance). It also takes the necessary measures to ensure that adequate internal guidelines are developed and implemented. The Management Board's responsibilities include, in particular, the bank's strategic management and direction, the allocation of resources, financial accounting and reporting, control and risk management, as well as a properly functioning business organization and corporate control. The Management Board decides on the appointments to the senior management level below the Management Board and, in particular, on the appointment of Global Key Function Holders. In appointing people to management functions in the Group, the Management Board takes diversity into account and strives, in particular, to achieve an appropriate representation of women.

The Management Board works closely together with the Supervisory Board in a cooperative relationship of trust and for the benefit of the company. The Management Board reports to the Supervisory Board at a minimum within the scope prescribed by law or administrative guidelines, in particular on all issues with relevance for the Group concerning strategy, the intended business policy, planning, business development, risk situation, risk management, staff development, reputation and compliance.

A comprehensive presentation of the duties, responsibilities and procedures of our Management Board are specified in its Terms of Reference, the current version of which is available on our website (www.db.com/ir/en/documents.htm).

Personnel changes to the Management Board and the current members of the Management

Frank Kuhnke was appointed member of the Management Board with effect from January 1, 2019, for a three-year period.
In the 2018 financial year, the following members of the Management Board left the Management Board:

- On April 8, 2018: Management Board Chairman John Cryan.
- At the end of May 24, 2018: Kimberly Hammonds and Dr. Marcus Schenck.
- As of December 31, 2018: Nicolas Moreau.

In the following, information is provided on the current members of the Management Board. The information includes the year in which they were born, year in which they were first appointed and year in which their term expires as well as their current positions and area of responsibility according to the current Business Allocation Plan for the Management Board. Also specified are their other board mandates or directorships outside of Deutsche Bank Group as well as all memberships in legally prescribed supervisory boards or other comparable domestic of foreign supervisory bodies of commercial enterprises. The members of our Management Board have generally undertaken not to assume chairmanships of supervisory boards of companies outside Deutsche Bank Group.

Christian Sewing

Year of birth: 1970
First appointed: 2015
Term expires: 2022

Christian Sewing became a member of our Management Board on January 1, 2015, and was President from March 5, 2017 to April 8, 2018. He was appointed Chairman of the Management Board with effect from April 8, 2018 and is responsible on the Management Board according to its Business Allocation Plan for, among other things, Communications & Corporate Social Responsibility (CSR) and Group Audit as well as the bank's business in the Americas Region. Furthermore he took on responsibility for Asset Management (AM) and the EMEA Region as of October 2018. From May to December 2018 our Chief Operating Officer reported to him. Previously, from September 1, 2017 to April 2018, he was Co-Head of Private & Commercial Bank (including Postbank), together with Frank Strauß. Mr. Sewing was also our Regional CEO for Germany until May 2018.

Prior to assuming his role on the Management Board, Mr. Sewing was Global Head of Group Audit and held a number of positions before that in Risk, including Deputy Chief Risk Officer (from 2012 to 2013) and Chief Credit Officer (from 2010 to 2012) of Deutsche Bank.

From 2005 until 2007, Mr. Sewing was a member of the Management Board of Deutsche Genossenschafts-Hypothekenbank.

Before graduating with a diploma from the Bankakademie Bielefeld and Hamburg, Mr. Sewing completed a bank apprenticeship at Deutsche Bank in 1989.

Mr. Sewing does not have any external directorships subject to disclosure.

Until May 25, 2018 Mr. Sewing was Chairman of the Supervisory Board of Deutsche Bank Privat- und Geschäftskunden AG as well as member of the Supervisory Board of Deutsche Postbank AG. Since May 25, 2018 he is Chairman of the Supervisory Board of DB Privat- und Firmenkundenbank AG.

Garth Ritchie

Year of birth: 1968
First appointed: 2016
Term expires: 2023

Garth Ritchie became a member of our Management Board on January 1, 2016, and was appointed President as of April 8, 2018. He was Co-Head of our Corporate & Investment Bank, together with Dr. Marcus Schenck, from July 2017 to May 2018, and has been its sole Head since May 2018. Mr. Ritchie is responsible for the UK & Ireland Region and was also our Regional CEO for the UK & Ireland until October 2018 for this region. From May to October 2018, he was responsible for the EMEA Region. He remains the Senior Manager SMF21 (FCA-designated senior management function for an EEA Branch) and is expected to become a SMF7 (Group Entity Senior Manager) upon authorization of Deutsche Bank AG London as a Third Country Branch.

Mr. Ritchie joined Deutsche Bank in 1996 and became Co-Head of Equities in the Corporate Banking & Securities Business Division in 2009 and its sole Head in 2010. He held various positions in trading and derivatives for over two decades.

Prior to joining Deutsche Bank, Mr. Ritchie held positions at Fergusson Brothers and First National Bank of South Africa.

He holds a Bachelor of Commerce in Finance and Economics from the University of Port Elizabeth (South Africa).

Mr. Ritchie does not have any external directorships subject to disclosure and no other memberships in legally prescribed supervisory boards or other comparable domestic of foreign supervisory bodies of commercial enterprises.

Karl von Rohr

Year of birth: 1965
First appointed: 2015
Term expires: 2023

Karl von Rohr became a member of our Management Board on November 1, 2015, and was appointed President as of April 8, 2018. He is our Chief Administrative Officer and is responsible for the functions Legal and Group Governance as well as Human Resources. Furthermore, he has been our Regional CEO for Germany since May 2018.

Mr. von Rohr joined Deutsche Bank in 1997. From 2013 to 2015 he was Global Chief Operating Officer, Regional Management. Prior to this, he was Head of Human Resources for Deutsche Bank in Germany and member of the Management Board of Deutsche Bank Privat- und Geschäftskunden AG. During his time at Deutsche Bank, he has held various senior management positions in other divisions in Germany and Belgium.

He studied law at the universities of Bonn (Germany), Kiel (Germany), Lausanne (Switzerland) and at Cornell University (U.S.A.).

Mr. von Rohr was a member of the following Supervisory Boards until July 6, 2018: BVV Versicherungsverein des Bankgewerbes a.G. and BVV Versorgungskasse des Bankgewerbes e.V. Furthermore he was until May 25, 2018 member of the Supervisory Board of Deutsche Postbank AG.

Since March 3, 2018 Mr. von Rohr is Chairman of the Supervisory Board of DWS Group GmbH & Co. KGaA.

Frank Kuhnke

Year of birth: 1967
First appointed: 2019
Term expires: 2021

Frank Kuhnke became a member of our Management Board on January 1, 2019. He is our Chief Operating Officer and is responsible for the Chief Information Office, the Chief Security Office, Data Management, Digital Strategy & Innovation, Corporate Services and Operations CIB, as well as Client Data Services.

He joined Deutsche Bank in 1986 and was appointed as Deutsche Bank's Chief Operating Officer (COO) in April 2018. From January 2016 until April 2018 he was Divisional Control Officer, Chief Administrative Officer and Head of Operations of the Private & Commercial Bank. Prior to that Mr. Kuhnke was Divisional Control Officer for Deutsche Asset & Wealth Management. From 2012 until 2015 he worked in Deutsche Bank's Non-Core Operations Unit, at first as Chief Risk Officer, later as Chief Operating Officer. Between 2008 and 2012 he held management positions in Risk, based in London. During his career, he has worked across several business divisions and infrastructure functions in Tokyo, New York and Germany and has run global organizations within Deutsche Bank Group.

Before graduating with a diploma from Bank Akademie Lüneburg, Mr. Kuhnke completed a bank apprenticeship at Deutsche Bank.

Mr. Kuhnke does not have any external directorships subject to disclosure.

He is Member of the Supervisory Board of Deutsche Bank Società per Azioni.

Stuart Lewis

Year of birth: 1965
First appointed: 2012
Term expires: 2020

Stuart Lewis became a member of our Management Board on June 1, 2012. He is our Chief Risk Officer and is responsible for, among other things, the functions managing Credit Risk, Non-Financial Risk, Market Risk and Liquidity Risk as well as for further Risk-Infrastructure units.

He joined Deutsche Bank in 1996. Prior to assuming his current role, Mr. Lewis was Deputy Chief Risk Officer and subsequently Chief Risk Officer of the Corporate & Investment Bank from 2010 to 2012. Between 2006 and 2010 he was Chief Credit Officer.

Before joining Deutsche Bank in 1996, he worked at Credit Suisse and Continental Illinois National Bank in London.

He studied at the University of Dundee, where he obtained an LLB (Hons), and he holds an LLM from the London School of Economics. He also attended the College of Law, Guildford.

Mr. Lewis does not have any external directorships subject to disclosure.

He is Chairman of the Advisory Council of DEUKONA Versicherungs-Vermittlungs-GmbH and Chairman of the Supervisory Board of Deutsche Bank Società per Azioni.

Sylvie Matherat

Year of birth: 1962
First appointed: 2015
Term expires: 2023

Sylvie Matherat became a member of our Management Board on November 1, 2015. She is our Chief Regulatory Officer and in this function she is responsible for the areas Compliance, Anti-Financial Crime (AFC), as well as Government & Regulatory Affairs. Since May 2018, she has also been responsible for the Business Selection and Conflicts Office.

Ms. Matherat joined Deutsche Bank from Banque de France where she was Deputy Director General and responsible for regulation and financial stability issues, payment and settlement infrastructures, banking services, and the Target 2 Securities project. Ms. Matherat previously held various positions at the banking supervisory authority and in the private sector.

She studied public law and finance at the Institut d'Études Politiques de Paris, France, and holds a Master's degree in law and political sciences. In 2014 she was awarded the Légion d'Honneur.

Ms. Matherat does not have any external directorships subject to disclosure.

She is Member of the Board of Directors of DB USA Corporation and since March 3, 2018 Member of the Supervisory Board of DWS Group GmbH & Co. KGaA.

James von Moltke

Year of birth: 1969
First appointed: 2017
Term expires: 2020

James von Moltke became a member of our Management Board on July 1, 2017. He is our Chief Financial Officer and in this function he is responsible for, among other things, Finance, Group Tax, Group Treasury, Investor Relations, as well as Corporate M&A & Corporate Investments.

Before Mr. von Moltke joined Deutsche Bank he served as Treasurer of Citigroup. He started his career at Credit Suisse First Boston in London in 1992. In 1995, he joined J.P. Morgan, working at the bank for 10 years in New York and Hong Kong. After next working at Morgan Stanley in New York for four years, where he led the Financial Technology advisory team globally, Mr. von Moltke joined Citigroup as Head of Corporate M&A in 2009. Three years later he became the US-bank's Global Head of Financial Planning.

He holds a Bachelor of Arts degree from New College, University of Oxford.

Mr. von Moltke has been a member of the following Supervisory Boards since July 6, 2018: BVV Versicherungsverein des Bankgewerbes a.G. and BVV Versorgungskasse des Bankgewerbes e.V.

Werner Steinmüller

Year of birth: 1954
First appointed: 2016
Term expires: 2020

Werner Steinmüller became a member of our Management Board on August 1, 2016. He is our Regional CEO Asia Pacific.

Mr. Steinmüller joined Deutsche Bank in 1991. He was Head of Global Transaction Banking from 2004 to 2016, Chief Operating Officer (COO) of Global Transaction Banking from 2003 to 2004, Head of the Global Banking Division Europe from 1998 to 2003, and Co-Head of Corporate Finance Germany from 1996 to 1998.

Prior to joining Deutsche Bank, he worked at Citibank from 1979 to 1991.

He holds a Diploma in Business Administration and Mechanical Engineering from TU Darmstadt.

Mr. Steinmüller does not have any external directorships subject to disclosure.

Mr. Steinmüller was until May 25, 2018 Chairman of the Supervisory Board of Deutsche Postbank AG. Since May 25, 2018 Mr. Steinmüller is member of the Supervisory Board of DB Privat- und Firmenkundenbank AG.

Frank Strauß

Year of birth: 1970
First appointed: 2017
Term expires: 2020

Frank Strauß became a member of our Management Board on September 1, 2017. He was Co-Head of our Private & Commercial Bank (including Postbank), together with Christian Sewing, until April 8, 2018, and has been its sole Head since then. Mr. Strauß was also responsible for Postbank (including integration matters) until May 25, 2018.

Having completed training to become a bank officer in Iserlohn, Mr. Strauß moved to Frankfurt in 1995, where he held various management positions at Deutsche Bank and Deutsche Bank 24, its former subsidiary. From 2002 onwards he coordinated European operations in the bank's Private & Business Clients division. In 2005 he took over responsibility for developing the bank's Asian operations in Mumbai and Beijing. One year later he was appointed Head of Private & Business Clients Germany. In July 2011 he moved to Postbank, where he became the Management Board member responsible for sales, before assuming the role of Chairman of the Management Board one year later.

He completed a bank apprenticeship at Deutsche Bank in Iserlohn between 1989 and 1992.

Mr. Strauß does not have any external directorships subject to disclosure.

He was until May 25, 2018 Chairman of the Management Board of Deutsche Postbank AG. Since May 25, 2018 Mr. Strauß is Chairman of the Management Board of DB Privat- und Firmenkundenbank AG.

Supervisory Board

The Supervisory Board of Deutsche Bank AG appoints, supervises and advises the Management Board and is directly involved in decisions of fundamental importance to the bank. It works together closely with the Management Board in a cooperative relationship of trust and for the benefit of the company. The Supervisory Board decides on the appointment and dismissal of members of the Management Board including long-term succession planning for the Management Board based on proposals of the Chairman's Committee while taking into account recommendations of the Nomination Committee. Based on proposals of the Compensation Control Committee, the Supervisory Board determines the total compensation of the individual members of the Management Board resolves on the compensation system for the Management Board and reviews it regularly.

In accordance with Section 9 (1) of the Articles of Association, the members of the Supervisory Board are elected for the period until the conclusion of the General Meeting which adopts the resolutions concerning the ratification of the acts of management for the fourth financial year following the beginning of the term of office. Here, the financial year in which the term of office begins is not taken into account. For the election of shareholder representatives, the General Meeting may establish that the terms of office of individual members may begin or end on differing dates.

The internal organization of the Supervisory Board and its committees as well as the tasks and profiles of the individual members are subject to specific statutory and regulatory requirements that further specify and supplement the corporate-law regulations concerning corporate governance. Such requirements are founded on, among other things, the German Banking Act (Kreditwesengesetz), the Remuneration Ordinance for Institutions (Institutsvergütungsverordnung), the guidelines of the European Banking Authority and the administrative practices of the European Central Bank as our supervisory authority. In individual cases, these are in contradiction to the recommendations of the German Corporate Governance Code ("Code") and, in such case, this may lead to a statement of exceptions in our Declaration of Conformity.

The Supervisory Board receives reports from the Management Board at least within the scope prescribed by law or administrative guidelines, in particular on all issues of relevance for the Group concerning strategy, intended business policy, planning, business development, risk situation, risk management, staff development, reputation and compliance. Furthermore, Group Audit informs the Audit Committee regularly, and in the case of severe deficiencies without undue delay, of any serious deficiencies identified and of any deficiencies that have not yet been remediated. The Chairman of the Supervisory Board is informed accordingly of any serious findings against the members of the Management Board. The Supervisory Board and Management Board adopted an Information Regime, which specifies not only the reporting to the Supervisory Board but also rules relating to the Supervisory Board's enquiries and requests for information from employees of the company, as well as the exchange of information in connection with preparations for the meetings and between the meetings.

The Chairman of the Supervisory Board plays a crucial role in the proper functioning of the Supervisory Board and has a leadership role in this. He can issue internal guidelines and principles concerning the Supervisory Board's internal organization and communications, the coordination of the work within the Supervisory Board and the Supervisory Board's interaction with the Management Board. Between meetings, the Chairman of the Supervisory Board, and, if expedient, the chairpersons of the Supervisory Board committees, maintain regular contact with the Management Board, especially with the Chairman of the Management Board, and deliberate with him on issues of Deutsche Bank Group's strategy, planning, the development of its business, risk situation, risk management, governance, compliance, technical-organizational resources and material litigation cases. The Chairman of the Supervisory Board and – within their respective functional responsibility – the chairpersons of the Supervisory Board committees are informed without delay by the Chairman of the Management Board or by the respectively responsible Management Board member about important events of material significance for the assessment of the situation, development and management of Deutsche Bank Group. The Chairman of the Supervisory Board engages in discussions with investors on Supervisory Board-related topics when necessary and regularly informs the Supervisory Board of the substance of such discussions.

The types of business that require the approval of the Supervisory Board to be transacted are specified in Section 13 of the Articles of Association of Deutsche Bank AG. The Supervisory Board meets, if required, without the Management Board. After due consideration and insofar as materially appropriate, the Supervisory Board, or any of its committees, may, in order to perform their tasks, consult auditors, legal advisors and other internal or external advisors. In performing their tasks, the Chairman of the Supervisory Board, the chairpersons of the standing committees and the Supervisory Board members are supported by the Office of the Supervisory Board, which is independent of the Management Board.

In 2018, a total of 54 meetings of the Supervisory Board and its committees took place. In addition, there was joint attendance and participation to address agenda items with a cross-committee relevance.

The duties, procedures and committees of the Supervisory Board are specified in its Terms of Reference. The current version is available on the Deutsche Bank website (www.db.com/ir/en/documents.htm).

Members of the Supervisory Board

The Supervisory Board of Deutsche Bank AG has 20 members. In accordance with the German Co-Determination Act (Mitbestimmungsgesetz), it comprises an equal number of shareholder representatives and employee representatives.

The suitability of each individual member to perform their mandate is assessed both internally and externally by the regulatory authorities, determined and monitored continuously. The suitability assessment covers the expertise, reliability and time availability of the individual members. In addition, there is an assessment of the knowledge, skills and experience of the Supervisory Board as a whole that are necessary for it to perform its control function. Passing the suitability assessment and the continual suitability of the Supervisory Board member during the entire mandate with Deutsche Bank AG are mandatory regulatory prerequisites for the performance of their work.

The members representing our shareholders were elected at the General Meeting on May 24, 2018. In departure from this, Dr. Paul Achleitner was first elected at the General Meeting on May 31, 2012, Dr. Gerhard Eschelbeck and Professor Dr. Stefan Simon were elected at the General Meeting on May 18, 2017 and Katherine Garrett-Cox and Richard Meddings were elected at the General Meeting on May 19, 2016. The election of employee representatives took place on April 26, 2018.

Dina Dublon was elected at the General Meeting on May 24, 2018, for the period until the close of July 31, 2018, and left the Supervisory Board on this date. In her place, Professor Dr. Norbert Winkeljohann was elected member of the Supervisory Board at the General Meeting on May 24, 2018, for the period starting from August 1, 2018.

The following table shows information on the current members of our Supervisory Board. The information includes the years in which the members were born, the years in which they were first elected or appointed, the years when their terms expire, their principal occupations as well as their memberships on other companies' supervisory boards, other non-executive directorships and other positions. Representatives of the employees are indicated with an asterisk (*).

Member	Principal occupation	Supervisory board memberships and other directorships
Dr. Paul Achleitner Year of birth: 1956 First elected: 2012 Term expires: 2022	Chairman of the Supervisory Board, Deutsche Bank AG	Bayer AG; Daimler AG; Henkel AG & Co. KGaA (member of the Shareholders' Committee)
Ludwig Blomeyer-Bartenstein* Year of birth: 1957 First elected: 2018 Term expires: 2023	Spokesman of the Management and Head of the Market Region Bremen, Deutsche Bank AG	Frowein & Co. Beteiligungs AG; Bürgschaftsbank Bremen GmbH (member of the Board of Directors)
Frank Bsirske* Year of birth: 1952 First elected: 2013 Term expires: 2023	Chairman, trade union ver.di (Vereinte Dienstleistungsgewerkschaft)	RWE AG (Deputy Chairman); Deutsche Postbank AG, Deputy Chairman until May 2018); DB Privat- und Firmenkundenbank AG (since May 2018); Kreditanstalt für Wiederaufbau (member of the Board of Supervisory Directors until December 2018); innogy SE (Deputy Chairman)
Mayree Carroll Clark Year of birth: 1957 First elected: 2018 Term expires: 2023	Managing Partner, Eachwin Capital LP	Ally Financial, Inc.; Regulatory Data Corp., Inc.; Taubman Centers, Inc.
Jan Duscheck* Year of birth: 1984 Appointed by the court: 2016 Term expires: 2023	Head of national working group Banking, trade union ver.di (Vereinte Dienstleistungsgewerkschaft)	No memberships or directorships subject to disclosure
Dr. Gerhard Eschelbeck Year of birth: 1965 First elected: 2017 Term expires: 2022	Vice President Security & Privacy Engineering, Google Inc.	Onapsis Inc. (Member of the Board of Directors) (since January 2019)
Katherine Garrett-Cox Year of birth: 1967 First elected: 2011 Term expires: 2021	Managing Director and Chief Executive Officer, Gulf International Bank (UK) Ltd.	No memberships or directorships subject to disclosure

Timo Heider* Year of birth: 1975 First elected: 2013 Term expires: 2023	Chairman of the General Staff Council of BHW Bausparkasse AG / Postbank Finanzberatung AG, Chairman of the General Staff Council of BHW Kreditservice GmbH; Deputy Chairman of the Group Staff Council of Deutsche Bank AG	Deutsche Postbank AG (until May 2018); BHW Bausparkasse AG (Deputy Chairman); Pensionskasse der BHW Bausparkasse AG VVaG (Deputy Chairman)
Martina Klee* Year of birth: 1962 First elected: 2008 Term expires: 2023	Deputy Chairperson of the Staff Council PWCC Center Frankfurt, Deutsche Bank AG	Sterbekasse für die Angestellten der Deutsche Bank-Gruppe VVaG
Henriette Mark* Year of birth: 1957 First elected: 2003 Term expires: 2023	Chairperson of the Combined Staff Council Southern Bavaria; Member of the General Staff Council and member of the Group Staff Council of Deutsche Bank	No memberships or directorships subject to disclosure
Richard Meddings Year of birth: 1958 Appointed by the court: 2015 Term expires: 2021	Executive Chairman of the Board, TSB Bank PLC	HM Treasury (until September 2018); TSB Bank PLC (Non-Executive Chairman of the Board until September 2018); Jardine Lloyd Thompson Group PLC (Non-Executive Director)
Gabriele Platscher* Year of birth: 1957 First elected: 2003 Term expires: 2023	Chairperson of the Staff Council Niedersachsen Ost, Deutsche Bank	BVV Versicherungsverein des Bankgewerbes a.G. (Deputy Chairperson); BVV Versorgungskasse des Bankgewerbes e.V. (Deputy Chairperson); BVV Pensionsfonds des Bankgewerbes AG (Deputy Chairperson)
Detlef Polaschek* Year of birth: 1960 First elected: 2018 Term expires: 2023	Deputy Chairman of the Supervisory Board; Member of the General Staff Council; Chairman of the Staff Council Niederrhein und Ruhrgebiet Mitte/Ost, Deutsche Bank	No memberships of directorships subject to disclosure
Bernd Rose* Year of birth: 1967 First elected: 2013 Term expires: 2023	Chairman of the General Staff Council of Postbank Filialvertrieb AG; Member of the Group Staff Council and European Staff Council of Deutsche Bank	Deutsche Postbank AG (until May 2018); DB Privat- und Firmenkunden AG (since December 2018); Postbank Filialvertrieb AG; ver.di Vermögensverwaltungsgesellschaft m.b.H. (Deputy Chairman)
Gerd Alexander Schütz Year of birth: 1967 First elected: 2017 Term expires: 2023	Member of the Management Board, C-QUADRAT Investment AG	MyBucks S.A. (Non-Executive Chairman of the Board of Directors) (until February 2018)
Prof. Dr. Stefan Simon Year of birth: 1969 Appointed by the court: 2016 Term expires: 2022	Self-employed attorney at law with his own law firm, SIMON GmbH	Leop. Krawinkel GmbH & Co. KG (Chairman of the Advisory Council)
Stephan Szukalski* Year of birth: 1967 First elected: 2013** Re-elected: 2018 Term expires: 2023	Federal Chairman German Association of Bank Employees (Deutscher Bankangestellten-Verband e.V. (DBV))	No memberships or directorships subject to disclosure
John Alexander Thain Year of birth: 1955 First elected: 2018 Term expires: 2023		Uber Technologies, Inc. (Member of the Board of Directors); Enjoy Technology Inc. (Member of the Board of Directors)
Michele Trogni Year of birth: 1965 First elected: 2018 Term expires: 2023		Morneau Shepell Inc. (Member of the Board of Directors); Capital Markets Gateway Inc. (Chairperson of the Board of Directors) (since July 2018); Global Atlantic Financial Group Ltd. (Non-Executive Director) (since August 2018)
Professor Dr. Norbert Winkeljohann Year of birth: 1957 First elected: 2018 Term expires: 2023	Self-employed corporate consultant, Norbert Winkeljohann Advisory & Investments	Bayer AG; Heristo AG (Chairman); Georgsmarienhütte Holding GmbH; Sievert AG (Chairman since January 2019)

* Employees representatives.
** Mr. Szukalski was a member of the Supervisory Board from May 23, 2013 to November 30, 2015.

Objectives for the composition of the Supervisory Board, Profile of Requirements and status of implementation

The Supervisory Board established objectives for its composition in October 2010 and last amended them as specified in the following in February 2018. While taking into account the requirements of Section 5.4.1 (2) sentence 1 of the German Corporate Governance Code (the "Code"), the Supervisory Board adopted a Profile of Requirements at its meeting on October 26, 2017 and confirmed it at its meeting on July 26, 2018.

The Supervisory Board shall be composed in such a way that its members as a whole possess the knowledge, abilities and expert experience to properly complete its tasks and the members in their entirety of the Supervisory Board and the Audit Committee must be familiar with the banking sector. In particular, the Supervisory Board members should have sufficient time to perform their mandates. The composition of the Supervisory Board should ensure the Supervisory Board's qualified control of and advice for the Management Board of an internationally operating, broadly positioned bank and should preserve the reputation of Deutsche Bank Group among the public. In this regard, in particular, attention should be placed on the integrity, personality, willingness to perform, professionalism and independence of the individuals proposed for election. The objective is for the Supervisory Board as a whole to have all of the knowledge and experience considered to be essential while taking into account the activities of Deutsche Bank Group.

The Supervisory Board, as a whole, must possess the expertise required to effectively monitor and advise the Management Board in its management of Deutsche Bank AG and Deutsche Bank Group – also with regard to the observance of the relevant bank supervisory regulations.

As set out in the Profile of Requirements each Supervisory Board member must have an understanding of the fields of expertise specified below that is appropriate for the size and complexity of Deutsche Bank AG. Experts shall have profound expertise in the individual fields.

The fields of expertise include, in particular, the fields listed below:

- Knowledge in the areas of banking, financial services, financial markets and the financial industry, including the home market and the bank's key markets outside Europe
- Knowledge of the relevant clients for the bank, the market expectations and the operational environment
- Risk management (investigation, assessment, mitigation, management and control of financial and non-financial risks, capital and liquidity management, shareholdings)
- Accounting (according to International Financial Reporting Standards (IFRS) and the German Commercial Code (HGB)) and audits of annual financial statements (financial experts: these members of the Supervisory Board must fulfill the requirements as "financial experts" as such term is defined by the implementation rules of the U.S. Securities and Exchange Commission (SEC) issued pursuant to Section 407 of the Sarbanes-Oxley Act of 2002 and by Section 100 of the German Stock Corporation Act)
- Corporate and social responsibility, including reporting
- Taxation
- Internal audit
- Compliance and internal controls
- Strategic planning, business and risk strategies as well as their implementation
- Digitalization
- Information technology (IT), IT systems and IT security
- Regulatory framework and legal requirements, in particular, knowledge of the legal systems relevant for the bank
- Knowledge of the social, political and regulatory expectations in the home market
- Selection procedure for management body members and assessment of their suitability
- Governance and corporate culture
- Human resources and staff management
- Compensation and compensation systems (compensation expert)
- Management of a large, international regulated company
- Internal organization of the bank

Furthermore, consideration is to be given to the amendments to the current version of the Business Allocation Plan for the Management Board of Deutsche Bank AG as well as to the requirements and expectations of the regulatory authorities.

In addition the Supervisory Board shall have an adequate number of independent members and shall not have more than two former members of the Management Board of Deutsche Bank AG. Under the premise that the performance of the Supervisory Board mandate in itself by the representatives of the employees cannot be reason to doubt fulfillment of the independence criteria according to Section 5.4.2 of the German Corporate Governance Code, the Supervisory Board shall have a total of at least sixteen members that are independent within the meaning of the Code. In any event, the Supervisory Board shall be composed such that the number of independent members, within the meaning of Section 5.4.2, among the shareholder representatives will be at least six. The members of the Supervisory Board may not exercise functions on a management body of, or perform advisory duties, at major competitors. Important and not just temporary conflicts of interest with respect to a member of the Supervisory Board should lead to a termination of the mandate. Members of the Supervisory Board may not hold more than the allowed number of supervisory board mandates according to Section 25d of the German Banking Act (KWG) or mandates in supervisory bodies of companies which have similar requirements.

There is a regular maximum age limit of 70. In well-founded, individual cases, a Supervisory Board member may be elected or appointed for a period that extends at the latest until the end of the fourth Annual General Meeting that takes place after he or she has reached the age of 70. This age limit was taken into account in the election proposals to the recent General Meetings and shall also be taken into account for the next Supervisory Board elections or subsequent appointments for Supervisory Board positions that become vacant. In October 2015, the Supervisory Board resolved that for members of the Supervisory Board to be elected or appointed in future, the length of each individual Supervisory Board membership shall not, as a rule, exceed 15 years.

The Supervisory Board respects diversity when proposing members for appointment to the Supervisory Board. In light of the international operations of Deutsche Bank, care should be taken that the Supervisory Board has an appropriate number of members with long-term international experience. Currently, the professional careers or private lives of eight members of the Supervisory Board are centered outside Germany. Furthermore, all of the shareholder representatives on the Supervisory Board have several years of international experience from their current or former activities as management board members or CEOs or a comparable executive function of corporations or organizations with international operations. In these two ways, the Supervisory Board believes the international activities of the company are sufficiently taken into account. The objective is to retain the currently existing international profile. The resumes of the members of the Supervisory Board are published on Deutsche Bank's website (www.db.com/ir/en/supervisory-board.htm).

For the election proposals to the General Meeting, the Supervisory Board takes into account the recommendations of the Nomination Committee and the legal requirements according to which the Supervisory Board shall be composed of at least 30 % women and at least 30 % men. Special importance has already been attached to an appropriate consideration of women in the selection process since the Supervisory Board elections in 2008. In reviewing potential candidates for a new election or subsequent appointments to Supervisory Board positions that have become vacant, qualified women shall be included in the selection process and shall be appropriately considered in the election proposals. For many years now, at least 30 % of the Supervisory Board members have been women and, since 2013, 30 % of the shareholder representatives have been women. Currently, six Supervisory Board members are women, i.e. 30 % of all members. The Supervisory Board strives to maintain this number. It should be taken into account that the Supervisory Board can only influence the composition of the Supervisory Board through its election proposals to the General Meeting.

The Supervisory Board believes that it complies with the specified concrete objectives regarding its composition and the Profile of Requirements. The members of the Supervisory Board as a whole possess the knowledge, ability and expert experience to properly complete their tasks. Diversity is appropriately taken into account. Further details in this context are given in the "Diversity Concept", which is also part of this Corporate Governance Statement / Corporate Governance Report.

In accordance with Section 5.4.2 of the German Corporate Governance Code, the Supervisory Board determined that it has what it considers to be an adequate number of independent members among the shareholder representatives. These are namely: Dr. Paul Achleitner, Mayree Carroll Clark, Dr. Gerhard Eschelbeck, Katherine Garrett-Cox, Richard Meddings, Professor Dr. Stefan Simon, John Alexander Thain, Michele Trogni and Professor Dr. Norbert Winkeljohann. Currently, the Supervisory Board does not consider Gerd Alexander Schütz independent due to his role as a representative of the large shareholder HNA. The Supervisory Board considers all of its members representing employees independent within the meaning of the Code, except for Henriette Mark and Gabriele Platscher, as their length of Supervisory Board membership in each case exceeds the regular limit of 15 years.

Some members of the Supervisory Board are, or were last year, in high-ranking positions at other companies that Deutsche Bank has business relations with. Business transactions with these companies are conducted under the same conditions as those between unrelated third parties. These transactions, in our opinion, do not affect the independence of the Supervisory Board members involved.

Standing Committees

The Supervisory Board has established the following eight standing committees. To the extent required, the committees coordinate their work and consult each other on an ad hoc basis. The committee chairpersons report regularly to the Supervisory Board on the work of the committees. The Report of the Supervisory Board in the Annual Report 2018 provides information on the concrete work of the committees over the preceding year.

Chairman's Committee: It is responsible for, in particular: preparing the meetings of the Supervisory Board and handling current business between meetings of the Supervisory Board; preparing for decisions by the Supervisory Board on the appointment and dismissal of members of the Management Board, including long-term succession planning for the Management Board, while taking into account the recommendations of the Nomination Committee; concluding, amending and terminating employment and pension contracts in consideration of the plenary Supervisory Board's sole authority to decide on the compensation of the members of the Management Board and in consideration of the recommendations of the Compensation Control Committee taking note of and, where necessary, expressing an opinion on contracts and/or amendments to contracts for a General Manager (Generalbevollmächtigter) of Deutsche Bank AG who is designated as an intended member of the Management Board; handling other contractual business with active and former members of the Management Board pursuant to Section 112 of the German Stock Corporation Act; and approving Management Board members' mandates, honorary offices or special tasks outside of Deutsche Bank Group, while taking the recommendations of the Nomination Committee into account. The Chairman's Committee is also responsible for: approving the hand-over of confidential internal data concerning a Management Board member in consultation with the Chairman of the Management Board and/or the Chief Risk Officer, unless they have a conflict of interests; approving contracts with Supervisory Board members pursuant to Section 114 of the German Stock Corporation Act; preparing for decisions of the Supervisory Board in the field of corporate governance, deciding in the Supervisory Board's stead on an adjustment of the annual Declaration of Conformity to changed actual circumstances and verifying compliance with the Declaration of Conformity. Its tasks also include: taking note of and, where necessary, expressing an opinion on the Supervisory Board's and its committees' costs for consultations with auditors, experts, legal advisors and other external advisors; as well as preparing recommendations for decisions of the Supervisory Board on pursuing claims for damages or taking other measures against incumbent or former members of the Management Board. As and when necessary, the Chairman's Committee draws on the expertise of the Chair of the Integrity Committee.

The Chairman's Committee held nine meetings in 2018.

The current members of the Chairman's Committee are Dr. Paul Achleitner (Chairman), Frank Bsirske, Detlef Polaschek and Professor Dr. Stefan Simon.

Nomination Committee: It is responsible for, in particular, supporting the Supervisory Board in identifying candidates to fill a position on the bank's Management Board. In doing so, the Nomination Committee takes into account the balance and diversity of the knowledge, skills and experience of all members of the Management Board, prepares a job description with a candidate profile, and states the time commitment Furthermore, it is responsible in particular for drawing up an objective to promote the representation of the under-represented gender on the Supervisory Board as well as a strategy for achieving this and the regular assessment, to be performed at least once a year, of the structure, size, composition and performance of the Management Board and of the Supervisory Board and making recommendations regarding this to the Supervisory Board. The Nomination Committee supports the Supervisory Board in drawing up guidelines for the individual and collective assessment of the professional qualifications, personal reliability and time availability of the members of the Management Board and Supervisory Board ("Suitability Guideline") as well as in monitoring the effectiveness of the Suitability Guideline. Furthermore, the Nomination Committee also supports the Supervisory Board in the regular assessment, to be performed at least once a year, of the knowledge, skills and experience of the individual members of the Management Board and Supervisory Board as well as of the respective body collectively in the assessment of the members of the Management Board and Supervisory Board in all other cases pursuant to the requirements of the Suitability Guideline; and in the review of the Management Board's principles for selecting and appointing persons to the upper management levels as well as the recommendations made to the Management Board in this respect. The shareholder representatives on the Nomination Committee prepare the Supervisory Board's proposals for the election or appointment of new shareholder representatives to the Supervisory Board. In this context, they take into account the Profile of Requirements for the Supervisory Board, the criteria specified by the Supervisory Board for its composition as well as the balance and diversity of the knowledge, skills and experience of all members of the Supervisory Board, prepare a job description with a candidate profile, and state the time commitment.

The Nomination Committee held six meetings in 2018.

The current members of the Nomination Committee are Dr. Paul Achleitner (Chairman), Frank Bsirske, Detlef Polaschek, Gerd Alexander Schütz and Professor Dr. Stefan Simon.

Audit Committee: It supports the Supervisory Board in particular in monitoring the financial reporting process, and it can submit recommendations or suggestions to the Supervisory Board on ensuring the integrity of the financial reporting process. Furthermore, the Audit Committee supports the Supervisory Board in monitoring the effectiveness of the risk management system, particularly of the internal control system and the internal audit system, the auditing of the financial statements, especially with regard to the auditor's independence and the additional services provided by the auditor, and the Management Board's prompt remediation – through suitable measures – of the deficiencies identified by the auditor and bank-internal control functions based on internal and external audits, in particular relating to weaknesses in risk controls, as well as non-compliance with policies, laws and regulatory requirements. The Committee is entitled to inspect all business documentation of the bank, including the business information stored on data carriers. The Audit Committee pre-reviews the annual and consolidated financial statements and management reports as well as the separate non-financial report and the separate consolidated non-financial report, if they were prepared. It discusses the audit reports with the auditor and prepares the decisions of the Supervisory Board on establishing the annual financial statements and the approval of the consolidated financial statements as well as the resolution proposal on the appropriation of distributable profit. The Audit Committee submits corresponding recommendations to the Supervisory Board. It also provides support to the Supervisory Board with regard to engaging any external assurances for the non-financial statement and the consolidated non-financial statement or for the separate non-financial report and separate consolidated non-financial report. It discusses important changes to the audit and accounting methods. The Audit Committee also discusses the quarterly financial statements and the report on the limited review of the quarterly financial statements with the Management Board and the auditor prior to their publication. Furthermore, the Audit Committee submits proposals to the Supervisory Board for the appointment of the auditor and prepares the proposal of the Supervisory Board to the General Meeting for the election of the auditor. The Audit Committee advises the Supervisory Board on issuing the audit mandate to the auditor elected by the General Meeting, submits proposals to the Supervisory Board for the auditor's remuneration and can specify areas of focus for the audit. It supports the Supervisory Board in monitoring the independence, qualifications and efficiency of the auditor as well as the rotation of the members of the audit team. Mandates for non-audit-related services given to the auditor or to companies to which the auditor is related in legal, economic or personnel terms need the prior consent of the Audit Committee (in this context, see also the Principal Accountant Fees and Services section in this Corporate Governance Statement / Corporate Governance Report). The Audit Committee issues guidelines for the employment of staff – including former staff – of the auditor by the company. It arranges to be informed regularly about the work done by Group Audit, the effectiveness of the internal audit system and in particular about its annual audit plan the focal areas of its auditing activity and on the results of its audits. The Audit Committee is responsible, in particular, for receiving and handling the quarterly, annual and ad hoc reports of Group Audit. The Management Board informs the Audit Committee about special audits, substantial complaints and other exceptional measures on the part of German and foreign bank regulatory authorities. The Committee regularly obtains reports on the receipt and handling of complaints from employees of the bank and its subsidiaries, from shareholders of Deutsche Bank AG and from third parties. In particular complaints concerning accounting, internal accounting controls, auditing and other financial reporting matters must be submitted to the Committee without undue delay. Reports concerning compliance matters are presented at the meetings of the Committee on a regular basis. The Chairman of the Audit Committee is entitled, in addition to the Chairman of the Supervisory Board, to obtain information directly from the Head of Compliance. The Audit Committee is responsible for acknowledging communications about significant reductions in the Compliance budget and for taking receipt of and handling the report, which is made at least once a year by the Head of Compliance (Compliance Report). Furthermore, the Committee is entitled to obtain, through its Chairman, information in connection with its tasks from the auditor, the Management Board, the Head of Group Audit and – with the prior consent of the Management Board – senior managers of the bank reporting directly to the Management Board.

The Audit Committee held seven meetings in 2018.

The current members of the Audit Committee are Professor Dr. Norbert Winkeljohann (Chairman), Dr. Paul Achleitner, Katherine Garrett-Cox, Henriette Mark, Gabriele Platscher, Detlef Polaschek, Bernd Rose and Professor Dr. Stefan Simon.

Risk Committee: It advises the Supervisory Board on overall risk appetite and risk strategy, and monitors the implementation of the stated risk appetite and risk strategy by the senior management level. The Risk Committee monitors the material aspects of the rating and valuation processes. In undertaking this responsibility, it receives reports from the Management Board about the operations of the bank's rating systems and about material changes or exceptions to established policies that will materially impact the operations of the bank's rating systems. The Risk Committee receives reports from the Management Board which are appropriate to monitor whether the material financial products and services offered by the bank as well as the conditions in the client business are in line with the bank's business model and risk structure. If this is not the case, the Risk Committee requests proposals from the Management Board on how the financial products and services as well as the conditions in the client business could be structured to bring them into line with the bank's business model and risk structure, and monitors their implementation. On the basis of the reports received from the Management Board, the Risk Committee assesses the risks associated with the financial products and services and takes into account the alignment between the prices assigned to and the profits gained from these products and services. The Risk Committee examines whether the incentives set by the compensation system take into consideration the company's risk, capital and liquidity structure as well as the likelihood and timing of earnings. The Risk Committee also performs all of the tasks assigned to it by law or regulatory authorities. It handles loans which require a resolution by the Supervisory Board pursuant to law or our Articles of Association. In this context, it approves, among other things, the acquisition of participations as defined by Section 13 (1) d) of the Articles of Association of Deutsche Bank AG, insofar as the value of the participation does not exceed € 1.5 billion and the participation will probably not remain in the bank's full or partial possession for more than twelve months. If this period is exceeded, the Chairperson of the Committee informs the Supervisory Board without delay and obtains its approval. The Risk Committee determines the nature, scope, format and frequency of the information which the Management Board is required to submit on strategy and risks. The Chairperson of the Risk Committee is entitled to obtain, in connection with its activities, information directly from the Management Board and the Head of Group Audit. At the meetings of the Risk Committee, the Management Board reports on credit, market, liquidity, operational, litigation and reputational risks. The Management Board also reports on risk strategy, credit portfolios, loans requiring Supervisory Board approval pursuant to law or our Articles of Association, questions of capital resources and matters of special importance due to the risks they entail (for additional information on the disclosure of the risk management objectives and policies for individual risk categories, please see the Risk Report of the Annual Report).

The Risk Committee held six meetings in 2018.

The current members of the Risk Committee are Mayree Carroll Clark (Chairperson), Dr. Paul Achleitner, Ludwig Blomeyer-Bartenstein, Jan Duscheck, Stephan Szukalski, Michele Trogni and Professor Dr. Norbert Winkeljohann.

Integrity Committee: It continually advises and monitors the Management Board with regard to whether management ensures the economically sound, sustainable development of the company while observing the principles of sound, responsible management, fulfilling the company's social responsibilities and protecting the natural resources of the environment (environmental, social and governance (ESG) issues), and to whether the business management is aligned to these values with the objective of a holistic corporate culture. The Integrity Committee monitors the Management Board's measures that ensure the company's compliance with legal requirements, authorities' regulations and the company's own in-house policies (preventive compliance control). It regularly reviews the bank's Code of Conduct and Code of Ethics for Senior Financial Officers to foster conduct on the part of company employees that is exemplary in every way, both within and outside the company, and that such conduct is not just aligned to the formal compliance with statutory requirements. It supports on request the Risk Committee in monitoring and analyzing the legal and reputational risks that are material to the bank. For this purpose, it advises the Management Board on how to generate awareness of the importance of such risks. It supports on request the preparation of the Chairman's Committee's recommendations for Supervisory Board decisions on pursuing recourse claims or taking other measures against current or former members of the Management Board and these are presented by its Chairperson to the Chairman's Committee. Furthermore, the Integrity Committee supports the Supervisory Board in the monitoring of the litigation cases with the highest risk and other material cases.

The Integrity Committee held six meetings in 2018.

The current members of the Integrity Committee are Professor Dr. Stefan Simon (Chairman), Dr. Paul Achleitner, Ludwig Blomeyer-Bartenstein, Katherine Garrett-Cox, Timo Heider and Gabriele Platscher.

Compensation Control Committee: It supports the Supervisory Board in the appropriate structuring of the compensation systems for the members of the Management Board. It also monitors the appropriate structure of the compensation systems for the Management Board members and employees and, in particular, the appropriate structure of the compensation for the heads of the risk control function and compliance function and for the employees who have a material influence on the bank's overall risk profile. The Compensation Control Committee supports the Supervisory Board in monitoring the process to identify risk takers in accordance with Section 18 (2) of the Remuneration Ordinance for Institutions (InstitutsVergV) and Group risk takers in accordance with Section 27 (2) sentence 1 of the Remuneration Ordinance for Institutions (InstitutsVergV) as well as the appropriate structure of the compensation systems for the company's employees. The Committee assesses the effects of the compensation systems on risk, capital and liquidity management, while ensuring that the compensation systems are aligned to the business strategy focused on the banks sustainable development, to the risk strategies derived from this and to the compensation strategies at the company and Group levels. It prepares the Supervisory Board's resolutions on the compensation of the Management Board, considering, in particular, the effects of the resolutions on the company's risks and risk management. The long-term interests of shareholders, investors and other stakeholders as well as the public interest are also taken into account. It also prepares the Supervisory Board's resolutions on setting the total amount of variable compensation for the members of the Management Board in accordance with Section 45 (2) sentence 1 No. 5a of the German Banking Act (KWG) in consideration of Section 7 of the Ordinance for Remuneration in Financial Institutions (InstitutsVergV) and on setting the appropriate compensation parameters, targets for contributions to performance, payment and deferral periods as well as the conditions for a full forfeiture or partial reduction of variable compensation. It also checks regularly, at least annually, whether the adopted specifications are still appropriate. Furthermore, it checks, as part of its support to the Supervisory Board in monitoring the appropriate structure of the compensation systems for employees, regularly, but at least annually, in particular, whether the total amount of variable compensation has been set in accordance with Section 45 (2) sentence 1 No. 5a of the German Banking Act (KWG) in consideration of Section 7 of the Remuneration Ordinance for Institutions (InstitutsVergV) and whether the specified principles to assess the compensation parameters, contributions to performance as well as the payment and deferral periods, including the conditions for a full forfeiture or partial reduction of the variable compensation, are appropriate. In addition, it supports the Supervisory Board in monitoring whether the internal controls and other relevant areas are properly involved in the structuring of the compensation systems. The Committee is authorized to obtain, via its Chairperson, information relating to the Committee tasks from the Head of Group Audit and from the heads of the organizational units responsible for structuring the compensation systems.

The Compensation Control Committee held five meetings in 2018.

The current members of the Compensation Control Committee are Dr. Paul Achleitner (Chairman), Frank Bsirske, Detlef Polaschek and Professor Dr. Stefan Simon.

Strategy Committee: The Committee, which was established by resolution of the Supervisory Board on May 23, 2018, supports the Supervisory Board in fulfilling its oversight responsibilities relating to the bank's strategy. It advises and monitors the Management Board with regard to the definition of business strategies geared to the sustainable development of the bank and the establishment of processes for planning, implementing, assessing and adjusting the business strategy. It oversees the Management Board's work on the strategic perspective, direction and development of the strategy for Deutsche Bank Group and its business divisions, the Management Board's implementation of the strategic plan and the execution progress against strategic milestones and goals, as well as the Management Board's implementation of major business transformation projects and their execution. It advises the Management Board as to whether the governance, risk appetite, financial and capital planning, liquidity and funding management, control environment and resources can support the bank's strategic objectives, and advises on divestitures and merger and acquisition strategy, including post-transaction performance tracking, as well as on the impact of changes in the competitive environment. Furthermore, the Strategy Committee advises the Management Board in preparation for the Supervisory Board meetings at which the Supervisory Board plenum addresses the company's strategy and prepares the Supervisory Board's decisions on transactions subject to its approval pursuant to Section 13 (1) b) and (1) d) of the Articles of Association.

The Strategy Committee held three meetings in 2018.

The current members of the Strategy Committee are John Alexander Thain (Chairman), Dr. Paul Achleitner, Frank Bsirske, Mayree Carroll Clark, Timo Heider, Henriette Mark, Richard Meddings and Detlef Polaschek.

Technology, Data and Innovation Committee: The Committee, which was established by resolution of the Supervisory Board on May 23, 2018, supports the Supervisory Board in fulfilling its oversight responsibilities relating to the bank's innovation, data and technology environment. It continually advises and monitors the Management Board with regard to the adequate technical and organizational resources and the definition of an adequate plan for IT systems, including their application with generally established standards to the arrangement of the IT systems and the related IT processes. This includes in particular the oversight over the Management Board's work on the IT strategy and its sustainability outlining the objectives and measures to be taken to achieve these objectives, the IT governance, the information security management, the user access management, the implementation of major IT projects and application development, IT operation, including data backup, outsourcing and other external procurement of IT services, data governance and data strategy, including their implementation, and any other material issues which may arise in connection with the IT systems and services or data quality of Deutsche Bank AG.

The Technology, Data and Innovation Committee held three meetings in 2018.

The current members of the Technology, Data and Innovation Committee are Michele Trogni (Chairperson), Dr. Paul Achleitner, Jan Duscheck, Dr. Gerhard Eschelbeck, Martina Klee and Bernd Rose.

Mediation Committee: In addition to these eight standing committees, the Mediation Committee, which is required by German law, makes proposals to the Supervisory Board on the appointment or dismissal of members of the Management Board in cases where the Supervisory Board is unable to reach a two-thirds majority decision with respect to the appointment or dismissal. The Mediation Committee only meets if necessary.

The Mediation Committee did not hold any meetings in 2018.

The current members of the Mediation Committee are Dr. Paul Achleitner (Chairman), Frank Bsirske, Detlef Polaschek and Professor Dr. Stefan Simon.

Further details regarding the Chairman's Committee, the Nomination Committee, the Audit Committee, the Risk Committee, the Integrity Committee, the Compensation Control Committee, the Strategy Committee and the Technology, Data and Innovation Committee are regulated in separate Terms of Reference. The current versions are available on our website, along with the Terms of Reference for the Supervisory Board (see: www.db.com/ir/en/documents.htm).

Share Plans

For information on our employee share programs, please refer to the additional Note 35 "Employee Benefits" to the Consolidated Financial Statements.

Reporting and Transparency

Directors' Share Ownership

Management Board. For information on the share ownership of the Management Board, please refer to our detailed Compensation Report in the Management Report.

Supervisory Board. The members of our Supervisory Board held the following numbers of our shares and share awards under our employee share plans.

Members of the Supervisory Board	Number of shares	Number of share awards
Dr. Paul Achleitner	0	0
Ludwig Blomeyer-Bartenstein	3,337	5,582[1]
Frank Bsirske	0	0
Mayree Carroll Clark	40,000	0
Jan Duscheck	0	0
Dr. Gerhard Eschelbeck	0	0
Katherine Garrett-Cox	0	0
Timo Heider	0	0
Martina Klee	2,442	10
Henriette Mark	1,524	0
Richard Meddings	0	0
Gabriele Platscher	1,365	10
Detlef Polaschek	553	10
Bernd Rose	0	0
Gerd Alexander Schütz	0	0
Professor Dr. Stefan Simon	0	0
Stephan Szukalski	0	0
John Alexander Thain	100,000	0
Michele Trogni	15,000	0
Professor Dr. Norbert Winkeljohann	0	0
Total	164,221	5,612

[1] Restricted Equity Awards. Mr. Blomeyer-Bartenstein has an entitlement linked to 5,582 shares through Restricted Equity Awards as part of his variable compensation. Of these awards, 323 are due in 2019 and 5,259 in 2020.

The members of the Supervisory Board held 164,221 shares, amounting to less than 0.01 % of our shares as of February 15, 2019.

As listed in the "Number of share awards" column in the table, the members who are employees of Deutsche Bank hold matching awards granted under the Global Share Purchase Plan, which are scheduled to be delivered to them on November 1, 2019, as well as Restricted Equity Awards (deferred share awards), which are granted to employees with deferred variable compensation. The latter are marked separately in the table, and the further details concerning them as a compensation instrument are reported in the section "Employee Compensation Report".

As described in the "Management Report: Compensation Report: Compensation System for Supervisory Board Members", 25 % of each member's compensation for services as a member of the Supervisory Board for a given prior year is, rather than being paid in cash, converted into notional shares of Deutsche Bank AG in February of the following year. The cash value of the notional shares is paid to the member in February of the year following their departure from the Supervisory Board or the expiration of their term of office, based on the market price of the Deutsche Bank share near the payment date. The table in the section specified above shows the number of notional shares that will be credited in spring 2019 to members of the Supervisory Board as part of their 2018 compensation.

Related Party Transactions

For information on related party transactions please refer to Note 38 "Related Party Transactions".

Auditing and Controlling

Audit Committee Financial Expert

The Supervisory Board determined that Dr. Paul Achleitner, Katherine Garrett-Cox, Richard Meddings, Professor Dr. Stefan Simon and Professor Dr. Norbert Winkeljohann, who are currently or were members of its Audit Committee until the end of 2018, are “audit committee financial experts”, as such term is defined by the implementation rules of the U.S. Securities and Exchange Commission issued pursuant to Section 407 of the Sarbanes-Oxley Act of 2002. These audit committee financial experts are “independent” of the bank, as defined in Rule 10A-3 under the U.S. Securities Exchange Act of 1934. In accordance with the provisions of Sections 107 (4) and 100 (5) of the German Stock Corporation Act (AktG) as well as Section 25d (9) of the German Banking Act (KWG), they have the required expert knowledge in financial accounting and auditing.

Compensation Control Committee Compensation Expert

Pursuant to Section 25d (12) of the German Banking Act (KWG), at least one member of the Compensation Control Committee must have sufficient expertise and professional experience in the field of risk management and risk controlling, in particular, with regard to the mechanisms to align compensation systems to the company’s overall risk appetite and strategy and the bank’s capital base. The Supervisory Board determined that Dr. Paul Achleitner and Professor Dr. Stefan Simon, members of the Compensation Control Committee, fulfill the requirements of Section 25d (12) of the German Banking Act (KWG) and therefore have the required expertise and professional experience in risk management and risk controlling.

For a description of the experience of the Supervisory Board members mentioned in the two foregoing paragraphs, please see “Corporate Governance Statement/Corporate Governance Report: Management Board and Supervisory Board: Supervisory Board” in the Annual Report 2018.

Values and leadership principles of Deutsche Bank AG and Deutsche Bank Group

Deutsche Bank Group Code of Conduct and Code of Ethics for Senior Financial Officers

Deutsche Bank Group’s Code of Conduct sets out Deutsche Banks’s purpose, values and beliefs and minimum standards of conduct that we expect all members of our Management Board and employees to follow. These values and standards govern employee interactions with our clients, competitors, business partners, government and regulatory authorities, and shareholders, as well as with other employees. In addition, the Code forms the cornerstone of our policies, which provide guidance on compliance with applicable laws and regulations.

In accordance with Section 406 of the Sarbanes-Oxley Act of 2002, we adopted a Code of Ethics for Senior Financial Officers of Deutsche Bank AG and Deutsche Bank Group with special obligations that apply to our “senior financial officers”, which currently consist of Deutsche Bank’s Chairman of the Management Board, Chief Financial Officer, Group Controller as well as certain other senior financial officers. There were no amendments or waivers to this Code of Ethics in 2018.

The current versions of the Code of Conduct as well as the Code of Ethics for Senior Financial Officers of Deutsche Bank AG and Deutsche Bank Group are available from Deutsche Bank’s website: www.db.com/ir/en/documents.htm.

Corporate Governance at Deutsche Bank AG and Deutsche Bank Group

Deutsche Bank established a Group Governance function to define, implement and monitor the corporate governance framework of Deutsche Bank AG and Deutsche Bank Group and to perform this governance function throughout the Group. Group Governance addresses corporate governance issues in Deutsche Bank AG and Deutsche Bank Group, while focusing closely on clear organizational structures aligned to the key elements of good corporate governance.

Deutsche Bank AG and Deutsche Bank Group are committed to ensuring a corporate governance framework in accordance with international standards and statutory provisions. In support of this objective, Deutsche Bank AG and Deutsche Bank Group have instituted clear corporate governance principles.

Further details on corporate governance are published on Deutsche Bank's website (www.db.com/ir/en/corporate-governance.htm).

Principal accountant fees and services

In accordance with German law, our principal accountant is appointed at our Annual General Meeting based on a recommendation of our Supervisory Board. The Audit Committee of our Supervisory Board prepares such a recommendation. Subsequent to the principal accountant's appointment, the Audit Committee awards the contract and in its sole authority approves the terms and scope of the audit and all audit engagement fees as well as monitors the principal accountant's independence. KPMG AG Wirtschaftsprüfungsgesellschaft was our principal accountant for the 2017 and 2018 fiscal years, respectively.

The table set forth below contains the aggregate fees billed for each of the last two fiscal years by KPMG AG Wirtschaftsprüfungsgesellschaft and the worldwide member firms of KPMG International in each of the following categories: (1) Audit fees, which are fees for professional services for the audit of our annual financial statements or services that are normally provided by the accountant in connection with statutory and regulatory filings or engagements for those fiscal years, (2) Audit-related fees, which are fees for assurance and related services that are reasonably related to the performance of the audit or review of our financial statements and are not reported as Audit fees, (3) Tax-related fees, which are fees for professional services rendered for tax compliance, tax consulting and tax planning, and (4) All other fees, which are fees for products and services other than Audit fees, Audit-related fees and Tax-related fees. These amounts include expenses and exclude Value Added Tax (VAT).

Fee category in € m.		2018	2017
Audit fees		60	51
Audit-related fees		12	18
Tax-related fees		5	4
All other fees		1	0
Total fees	[1]	**78**	73

The Audit fees include fees for professional services for the audit of our annual financial statements and consolidated financial statements and do not include the 2017 audit fees for Postbank and its subsidiaries, as the 2017 financials of those entities are not audited by KPMG. The Audit-related fees include fees for other assurance services required by law or regulations, in particular for financial service specific attestation, for quarterly reviews, for spin-off audits and for merger audits, as well as fees for voluntary assurance services, like voluntary audits for internal management purposes and the issuance of comfort letters. Our Tax-related fees include fees for services relating to the preparation and review of tax returns and related compliance assistance and advice, tax consultation and advice relating to Group tax planning strategies and initiatives and assistance with assessing compliance with tax regulations.

United States law and regulations, and our own policies, generally require that all engagements of our principal accountant be pre-approved by our Audit Committee or pursuant to policies and procedures adopted by it. Our Audit Committee has adopted the following policies and procedures for consideration and approval of requests to engage our principal accountant to perform non-audit services. Engagement requests must in the first instance be submitted to the Accounting Engagement Team. If the request relates to services that would impair the independence of our principal accountant, the request must be rejected. Our Audit Committee has given its pre-approval for specified assurance, financial advisory and tax services, provided the expected fees for any such service do not exceed € 1 million. If the engagement request relates to such specified pre-approved services, it may be approved by the Accounting Engagement Team and must thereafter be reported to the Audit Committee. If the engagement request relates neither to prohibited non-audit services nor to pre-approved non-audit services, it must be forwarded to the Audit Committee for consideration. In addition, to facilitate the consideration of engagement requests between its meetings, the Audit Committee has delegated approval authority to several of its members who are "independent" as defined by the Securities and Exchange Commission and the New York Stock Exchange. Such members are required to report any approvals made by them to the Audit Committee at its next meeting.

Additionally, United States law and regulations permit the pre-approval requirement to be waived with respect to engagements for non-audit services aggregating to no more than five percent of the total amount of revenues we paid to our principal accountant, if such engagements were not recognized by us at the time of engagement and were promptly brought to the attention of our Audit Committee or a designated member thereof and approved prior to the completion of the audit. In 2017 and 2018, the percentage of the total amount of revenues we paid to our principal accountant for non-audit services that was subject to such a waiver was less than 5 % for each year.

Compliance with the German Corporate Governance Code

Declaration pursuant to Section 161 German Stock Corporation Act (AktG) (Declaration of Conformity 2018)

The Declaration of Conformity pursuant to Section 161 of the Stock Corporation Act, last issued by the Supervisory Board and Management Board on October 26, 2017, was reissued at the meeting of the Supervisory Board on October 25, 2018. The Management Board and Supervisory Board state according to Section 161 of the Stock Corporation Act:

The last Declaration of Conformity was issued on October 26, 2017. Since then Deutsche Bank AG has complied and will continue to comply in the future with the recommendations of the "Government Commission on the German Corporate Governance Code" in the version of the Code dated February 7, 2017, published in the Bundesanzeiger on April 24, 2017, subject to the following deviations:

- Relating to No. 5.3.3, according to which the supervisory board shall form a nomination committee composed exclusively of shareholder representatives. Section 25 (d) of the German Banking Act stipulates that the nomination committee of the supervisory board must take on additional tasks that should be performed not solely by the shareholder representatives on the supervisory board. For this reason, the Nomination Committee of the Supervisory Board of Deutsche Bank AG also comprises representatives of the employees. However, it will be ensured that the candidate recommendations for the election proposals to the General Meeting will be prepared exclusively by the Committee's shareholder representatives.
- Relating to No. 4.2.3 (2) sentence 6, according to which the amount of compensation for the management board members shall be capped, both overall and with regard to variable compensation components. The existing employment contracts (in conjunction with equity plan conditions) of the members of the Management Board of Deutsche Bank AG do provide for a limit (cap) in the awarding of total compensation and their variable compensation components. In this context, however, some hold the view that such limits would have to apply not only to the granting and awarding of the compensation components but also to their later payout. Although Deutsche Bank AG does not consider this view to be convincing, we state merely as a precautionary measure that a limit (cap) has not been set for the payout amount of deferred equity-based compensation and that therefore Deutsche Bank AG deviates from the recommendation in No. 4.2.3 (2) sentence 6 according to this interpretation.

Statement on the Suggestions of the German Corporate Governance Code

Deutsche Bank voluntarily complies with the suggestions of the Code in the version dated February 7, 2017, with the following exceptions:

- The representatives appointed by Deutsche Bank to exercise shareholders' voting rights can be reached by those attending the General Meeting until just before voting commences. The representatives are reachable by those not attending until 12 noon on the day of the General Meeting using the instruction tool in the Internet (Code No. 2.3.2). In this manner, the risk of any technical disruptions directly before voting takes place can basically be excluded. The broadcast through the Internet also ends at the latest at this time, which means information useful for forming an opinion can no longer be expected after this point by shareholders who only participate through proxies.
- Our broadcast of the General Meeting through the Internet (Code No. 2.3.3) starts with the opening of the General Meeting by the Chairman and covers the report of the Supervisory Board and the report of the Management Board. The shareholders then have the opportunity to hold their discussions with management. These take place without a public broadcast through the Internet.

Targets for the proportion of women in management positions/gender quota

As of the date of this Corporate Governance Statement, the percentage of women on the Supervisory Board of Deutsche Bank AG is 30 %. The statutory minimum of 30 % pursuant to Section 96 (2) of the German Stock Corporation Act (AktG) is thereby fulfilled.

On July 27, 2017, the Supervisory Board set a target of at least 20 % for the percentage of female members of the Management Board as of June 30, 2022. For a Management Board size of between eight and 12 members, this corresponds to two women When the decision was made two women were members of the Management Board. As of the date of this Statement, there is one female member on the Management Board of Deutsche Bank AG Sylvie Matherat.

On September 16, 2015, the Management Board set targets for the percentage of women at 20 % for the first management level and 25 % for the second management level, to be reached by December 31, 2020 (when the decision was made the percentage of women on the first management level was 14 % and on the second management level 18 %).

The population of the first management level comprises Managing Directors and Directors who report directly to the Management Board and managers with comparable responsibilities and the population of the second management level comprises Managing Directors and Directors who report to the first management level.

Implementing German gender quota legislation at Deutsche Bank AG

in % (unless stated otherwise)	Status as of Dec 31, 2017	Status as of Dec 31, 2018	Target for Dec 31, 2020	Target for Jun 30, 2022
Women on the Supervisory Board	35 %	30 %	30 %[1]	-
Women on the Management Board	16.7	11.1 %	-	20 %[2]
First management level below the Management Board	18.0 %	20.8 %	20 %	-
Second level below the Management Board	19.6 %	20.9 %	25 %	-

[1] Legal requirement.
[2] For a Management Board size of between eight and 12 members, this corresponds two women.

Key conditions have changed since the target was set in September 2015 for the percentage of women on the two levels below the Management Board". These changes include the stronger integration of Infrastructure functions in the bank's business divisions as well as our decisions regarding the IPO of DWS and the merging of our Private & Commercial Bank and Postbank. Furthermore, our extensive cost reduction program imposed restrictions on hiring and appointments at these two levels. In fact, the already relatively low number of employees on the two levels below the Management Board declined further in the period since September 2015, by nearly 40 %. Small changes in absolute numbers led to relatively high fluctuations in terms of percentages. Nevertheless, we maintained our target and continue to focus on increasing the percentage of women in management positions. Within this framework, our decisions on promotions and appointments are aligned, in particular, to the suitability of the candidates for the respective roles, their demonstrated performance and their future potential.

Diversity Concept

As an integral part of our strategy as a leading European bank with a global reach and a strong home market in Germany, Diversity is a decisive factor for our success. Diversity & Inclusion help Deutsche Bank in forming sustainable relationships with our clients and partners and in taking part in the societies where we do business.

Age, gender as well as educational and professional backgrounds have long been accepted as key aspects of our far more comprehensive understanding of Diversity at Deutsche Bank.

We are convinced that Diversity & Inclusion stimulate innovation, for example, and help us to take more balanced decisions and thus play a decisive role for the success of Deutsche Bank. Diversity & Inclusion are therefore integral components of the bank's values and beliefs and its Code of Conduct.

The Supervisory Board and Management Board strive to and should serve as role models for the bank with regard to Diversity & Inclusion. In accordance with our values and beliefs specified above, diversity in the composition of the Supervisory Board and the Management Board also facilitates the proper performance of the tasks and duties assigned to them by law, the Articles of Association and Terms of Reference.

Based on Deutsche Bank's understanding of Diversity & Inclusion, the values and beliefs and the measures described in the following for their implementation also apply – to the extent legally admissible – to the Supervisory Board and the Management Board of Deutsche Bank AG. The Supervisory Board considers diversity in the company, in particular, when filling positions on the Management Board and Supervisory Board.

At its meeting on July 26, 2018, the Supervisory Board of Deutsche Bank AG approved a Suitability Guideline for selecting members of the Supervisory Board and Management Board of Deutsche Bank AG, which also contains diversity principles. This Suitability Guideline implements the "Guidelines on the assessment of the suitability of members of the management body and key function holders" issued jointly by the European Banking Authority and European Securities and Markets Authority.

Diversity Concept for the Supervisory Board

The Supervisory Board is to be composed in such a way that its members as a whole possess the expertise, skills and professional experience required to effectively monitor and advise the Management Board in its management of Deutsche Bank AG and Deutsche Bank Group also with regard to the observance of the relevant bank supervisory regulations.

In light of the international operations of Deutsche Bank, care shall be taken, in particular, that the Supervisory Board has an appropriate number of members with many years of international experience.

Also in light of the legal requirements to be observed, the Supervisory Board shall be composed of at least 30 % women and at least 30 % men.

There is an age limit of 70, in principle, for members of the Supervisory Board and the maximum length of each individual Supervisory Board membership shall generally not exceed 15 years.

Implementation

It should be taken into account that the Supervisory Board can only influence the composition of the Supervisory Board through its proposals to the General Meeting for the election of the shareholder representatives.

Based on a proposal of the Nomination Committee, a profile of requirements was issued for the Supervisory Board and candidate profiles were issued for the Chairperson of the Supervisory Board, the members of the Supervisory Board and the chairpersons of each of the committees. The profiles summarize the knowledge, abilities and experience required to properly complete the tasks of the Supervisory Board of Deutsche Bank AG (collective suitability).

For the election proposals to the General Meeting, the Supervisory Board takes into account the legal requirements according to which the Supervisory Board shall be composed of at least 30 % women and at least 30 % men (joint fulfilment by shareholder and employee representatives).

The Nomination Committee also supports the Supervisory Board with the periodic assessment, to be performed at least once a year, of the knowledge, skills and experience of the individual members of the Supervisory Board as well as of the Supervisory Board in its entirety.

Results achieved in the 2018 financial year

At the end of the financial year, 14 men and six women (30 %) were members of the Supervisory Board. The statutory minimum quota of 30 % was thus fulfilled. The number of women reduced by one versus the prior year's reporting date resulted from the new election of employee representatives to the Supervisory Board in the 2018 financial year.

The age structure is diverse, ranging from 34 to 66 years of age at the end of the financial year and spanning three generations, according to the general definition of the term.

At the end of the financial year the length of experience as member of the Supervisory Board of Deutsche Bank ranged from under one year to around 15 years. Seven of the 20 members joined the Supervisory Board in the 2018 financial year.

In accordance with our objectives specified above, all of the shareholder representatives on the Supervisory Board have many years of international experience in various companies and functions.

The diverse range of the members' educational and professional backgrounds includes banking, business administration, economics, law, history and information technology.

The bank transparently reports on Supervisory Board diversity in addition to the information presented above in this Corporate Governance Report / Corporate Governance Statement in the section "Management Board and Supervisory Board: Supervisory Board" as well as on the bank's website: www.db.com (Heading "Investor Relations", "Corporate Governance", "Supervisory Board").

Diversity Concept for the Management Board

Through the composition of the Management Board, it is to be ensured that its members have, at all times, the required knowledge, skills and experience necessary to properly perform their tasks. Accordingly, when selecting members for the Management Board, care is to be taken that they collectively have sufficient expertise and diversity within the meaning of our objectives specified above.

By way of resolution of the Supervisory Board, the Management Board should be composed of at least 20 % women by June 30, 2022. For a Management Board size of between eight and 12 members, this corresponds to two women.

For the Management Board members, the age limit is reached, in general, when a member reaches the retirement age, according to the rules of the German statutory pension insurance scheme, for the long-term insured to claim an early retirement pension ("Renteneintrittsalter zur vorzeitigen Inanspruchnahme der Altersrente für langjährig Versicherte"). This is currently at 63 years of age.

Implementation

In accordance with the law, the Articles of Association and Terms of Reference, the Supervisory Board adopted candidate profiles for the members of the Management Board, based on a proposal from the Nomination Committee. These profiles take into account an "Expertise and Capability Matrix", specifying, among other things, the required knowledge, skills and experience to perform the tasks as Management Board member, in order to successfully develop and implement the bank's strategy in the respective market or the respective division and as a management body collectively.

In identifying candidates to fill a position on the bank's Management Board, the Supervisory Board's Nomination Committee takes into account the appropriate diversity balance of all Management Board members collectively. Furthermore, it also considers the targets set by the Supervisory Board in accordance with statutory requirements for the percentage of women on the Management Board.

The Nomination Committee supports the Supervisory Board with the periodic assessment, to be performed at least once a year, of the knowledge, skills and experience of the individual members of the Management Board and of the Management Board in its entirety.

Results achieved in the 2018 financial year

At the end of the financial year, the Management Board composed eight men and one woman. The target of 20 % of the members or two women adopted for June 30, 2022 for the Management Board was therefore not yet met following the departure of Kimberly Hammonds during the 2018 financial year. The age structure is diverse, ranging from 47 to 63 years of age at the end of the financial year and spanning two generations, according to the general definition of the term.

The length of experience as member of the Management Board of Deutsche Bank ranged from one-and-a-half years to around six years. Also with our strategy in mind of being a leading European bank with a global reach and a strong home market in Germany, four of the nine Management Board members as of the end of the financial year have a German background. However, the ethnic diversity of the Management Board does not currently reflect the full diversity of the markets where we do business or the diversity of our employees.

The diverse range of the members' educational and professional backgrounds includes banking, business administration, economics, law and engineering.

The bank transparently reports on Management Board diversity in addition to the information presented above in this Corporate Governance Report / Corporate Governance Statement in the section "Management Board and Supervisory Board:

Management Board" as well as on the bank's website: www.db.com (Heading "Corporate Governance", "Management Board").

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Supplementary Information (Unaudited)

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Non-GAAP Financial Measures

This document and other documents the Group has published or may publish contain non-GAAP financial measures. Non-GAAP financial measures are measures of the Group's historical or future performance, financial position or cash flows that contain adjustments that exclude or include amounts that are included or excluded, as the case may be, from the most directly comparable measure calculated and presented in accordance with IFRS in the Group's financial statements.

Return on Equity Ratios

The Group reports a post-tax return on average shareholders' equity and a post-tax return on average tangible shareholders' equity, each of which is a non-GAAP financial measure.

The post-tax returns on average shareholders' equity and average tangible shareholders' equity are calculated as net income (loss) attributable to Deutsche Bank shareholders as a percentage of average shareholders' equity and average tangible shareholders' equity, respectively.

Net income (loss) attributable to Deutsche Bank shareholders for the segments is a non-GAAP financial measure and is defined as net income (loss) excluding post-tax income (loss) attributable to noncontrolling interests. For the Group, it reflects the reported effective tax rate, which was 74 % for the full year 2018, 160 % for 2017 and (67) % for 2016. For the segments, the applied tax rate was 28 % for all reported periods in 2018, 33 % for all reported periods in 2017 and 35 % for all reported periods in 2016.

At the Group level, tangible shareholders' equity is shareholders' equity as reported in the consolidated balance sheet excluding goodwill and other intangible assets. Tangible shareholders´ equity for the segments is calculated by deducting goodwill and other intangible assets from shareholders' equity as allocated to the segments, as described in Note 4 "Business Segments and Related Information" to the consolidated financial statements within the section "Measurement of Segment Profit and Loss". Shareholders' equity and tangible shareholders' equity are presented on an average basis.

The Group believes that a presentation of average tangible shareholders' equity makes comparisons to its competitors easier, and refers to this measure in the return on equity ratios presented by the Group. However, average tangible shareholders' equity is not a measure provided for in IFRS, and the Group's ratios based on this measure should not be compared to other companies' ratios without considering differences in the calculations.

The reconciliation of the aforementioned ratios is set forth in the table below:

						2018
in € m. (unless stated otherwise)	Corporate & Investment Bank	Private & Commercial Bank	Asset Management	Non-Core Operations Unit	Corporate & Other	Total
Income (loss) before income taxes (IBIT)	530	829	367	–	(396)	1,330
Income tax expense	0	0	0	–	0	(989)
Net Income (loss)	382	597	264	–	(902)	341
Net income (loss) attributable to noncontrolling interests	0	0	0	–	(75)	(75)
Net Income attributable to DB shareholders and additional equity components	**382**	**597**	**264**	**–**	**(976)**	**267**
Average shareholders' equity	43,427	14,514	4,669	–	0	62,610
Add (deduct): Average goodwill and other intangible assets	(3,090)	(2,113)	(3,183)	–	(0)	(8,386)
Average tangible shareholders' equity	**40,337**	**12,401**	**1,485**	**–**	**0**	**54,224**
Post-tax return on average shareholders' equity	1 %	4 %	6 %	–	N/M	0 %
Post-tax return on average tangible shareholders' equity	1 %	5 %	18 %	–	N/M	1 %

in € m. (unless stated otherwise)	Corporate & Investment Bank	Private & Commercial Bank	Asset Management	Non-Core Operations Unit	Corporate & Other	2017 Total
Income (loss) before income taxes (IBIT)	1,096	465	732	–	(1,066)	1,228
Income tax expense	0	0	0	–	0	(1,963)
Net Income (loss)	734	312	490	–	(2,272)	(735)
Net income (loss) attributable to noncontrolling interests	0	0	0	–	(15)	(15)
Net Income attributable to DB shareholders and additional equity components	**734**	**312**	**490**	**–**	**(2,287)**	**(751)**
Average shareholders' equity	44,197	14,943	4,687	–	99	63,926
Add (deduct): Average goodwill and other intangible assets	(2,982)	(2,082)	(3,816)	–	(1)	(8,881)
Average tangible shareholders' equity	**41,215**	**12,861**	**871**	**–**	**98**	**55,045**
Post-tax return on average shareholders' equity	2 %	2 %	10 %	–	N/M	(1) %
Post-tax return on average tangible shareholders' equity	2 %	2 %	56 %	–	N/M	(1) %

in € m. (unless stated otherwise)	Corporate & Investment Bank	Private & Commercial Bank	Asset Management	Non-Core Operations Unit	Corporate & Other	2016 Total
Income (loss) before income taxes (IBIT)	1,973	1,547	(190)	(3,187)	(952)	(810)
Income tax expense	0	0	0	0	0	(546)
Net Income (loss)	1,290	1,011	(124)	(2,085)	(1,449)	(1,356)
Net income (loss) attributable to noncontrolling interests	0	0	0	0	(45)	(45)
Net Income attributable to DB shareholders and additional equity components	**1,290**	**1,011**	**(124)**	**(2,085)**	**(1,495)**	**(1,402)**
Average shareholders' equity	40,312	14,371	4,460	690	2,249	62,082
Add (deduct): Average goodwill and other intangible assets	(2,568)	(1,775)	(4,636)	(3)	(894)	(9,876)
Average tangible shareholders' equity	**37,744**	**12,595**	**(175)**	**687**	**1,355**	**52,206**
Post-tax return on average shareholders' equity	3 %	7 %	(3) %	N/M	N/M	(2) %
Post-tax return on average tangible shareholders' equity	3 %	8 %	71 %	N/M	N/M	(3) %

Adjusted Costs

Adjusted costs is one of the Group's key performance indicators and is a non-GAAP financial measure most directly comparable to the IFRS financial measure noninterest expenses. Adjusted costs is calculated by deducting from noninterest expenses under IFRS (i) impairment of goodwill and other intangible assets, (ii) litigation, (iii) policyholder benefits and claims and (iv) restructuring and severance. Policyholder benefits and claims arose from the Abbey Life Assurance business which was sold in late 2016 and so will not occur in future periods. The Group believes that a presentation of noninterest expenses excluding the impact of these items provides a more meaningful depiction of the costs associated with our operating businesses.

in € m.	Corporate & Investment Bank	Private & Commercial Bank	Asset Management	Non-Core Operations Unit	Corporate & Other	2018 Total Consolidated
Noninterest expenses	**12,372**	**8,923**	**1,735**	**-**	**431**	**23,461**
Impairment of goodwill and other intangible assets	0	0	0	-	0	0
Litigation provisions	56	(51)	33	-	50	88
Policyholder benefits and claims	0	0	0	-	0	0
Restructuring and severance	339	121	45	-	58	563
Adjusted costs	**11,976**	**8,853**	**1,657**	**-**	**324**	**22,810**

in € m.	Corporate & Investment Bank	Private & Commercial Bank	Asset Management	Non-Core Operations Unit	Corporate & Other	Total Consolidated
						2017
Noninterest expenses	12,892	9,411	1,799	-	593	24,695
Impairment of goodwill and other intangible assets	6	12	3	-	0	21
Litigation provisions	44	53	5	-	112	213
Policyholder benefits and claims	0	0	0	-	0	0
Restructuring and severance	151	399	18	-	2	570
Adjusted costs	12,690	8,947	1,774	-	478	23,891

in € m.	Corporate & Investment Bank	Private & Commercial Bank	Asset Management	Non-Core Operations Unit	Corporate & Other	Total Consolidated
						2016
Noninterest expenses	13,926	9,104	3,205	2,682	525	29,442
Impairment of goodwill and other intangible assets	285	0	1,021	(49)	(0)	1,256
Litigation provisions	608	56	(0)	1,750	(18)	2,397
Policyholder benefits and claims	0	0	374	0	0	374
Restructuring and severance	390	205	69	23	(5)	681
Adjusted costs	12,643	8,843	1,741	958	549	24,734

Book Value and Tangible Book Value per Basic Share Outstanding

Book value per basic share outstanding and tangible book value per basic share outstanding are non-GAAP financial measures that are used and relied upon by investors and industry analysts as capital adequacy metrics. Book value per basic share outstanding represents the Bank's total shareholders' equity divided by the number of basic shares outstanding at period-end. Tangible book value represents the Bank's total shareholders' equity less goodwill and other intangible assets. Tangible book value per basic share outstanding is computed by dividing tangible book value by period-end basic shares outstanding.

Tangible Book Value

in € m. (unless stated otherwise)	2018	2017	2016	2018 increase (decrease) from 2017 in € m.	2018 increase (decrease) from 2017 in %	2017 increase (decrease) from 2016 in € m.	2017 increase (decrease) from 2016 in %
Total shareholders' equity (Book value)	**62,495**	63,174	59,833	(680)	(1)	3,341	6
Goodwill and other intangible assets	(8,372)[1]	(8,839)	(8,982)	467	(5)	143	(2)
Tangible shareholders' equity (Tangible book value)	**54,122**	54,335	50,851	(213)	(0)	3,484	7

[1] Excludes Goodwill and other intangible assets attributable to partial sale of DWS.

Basic Shares Outstanding

in € m. (unless stated otherwise)	2018	2017	2016	2018 increase (decrease) from 2017 in € m.	2018 increase (decrease) from 2017 in %	2017 increase (decrease) from 2016 in € m.	2017 increase (decrease) from 2016 in %
Number of shares	**2,066.8**	2,066.8	1,545.5	0	0	521.3	33.7
Shares outstanding:							
Treasury shares	(1.3)	(0.4)	(0.2)	(1.0)	N/M	(0.1)	63.5
Vested share awards	39.8	28.5	23.3	11.3	39.5	5.2	22.4
Basic shares outstanding[1]	**2,105.2**	2,094.9	1,568.6	10.3	0.5	526.3	33.6
Book value per basic share outstanding in €	**29.69**	30.16	38.14	(0.47)	(1.6)	(7.98)	(20.9)
Tangible book value per basic share outstanding in €	**25.71**	25.94	32.42	(0.23)	(0.9)	(6.48)	(20.0)

[1] The basic shares outstanding have been adjusted for comparative periods in order to reflect the effect of the bonus component of subscription rights issued in April 2017 in connection with the capital increase.

Fully loaded CRR/CRD 4 Measures

Our regulatory assets, exposures, risk-weighted assets, capital and ratios thereof are calculated for regulatory purposes and are set forth throughout this document under CRR/CRD 4. CRR/CRD 4 provides for “transitional” (or “phase-in”) rules, under which capital instruments that are no longer eligible under the new rules are permitted to be phased out as the new rules on regulatory adjustments are phased in, as well as regarding the risk weighting of certain categories of assets.

When referring to Deutsche Bank results according to transitional rules we use the term “CRR/CRD 4”. When referring to results according to full application of the final CRR/CRD 4 framework (without consideration of applicable transitional methodology) we use the term “CRR/CRD 4 fully loaded”. For the calculation of risk-weighted assets (RWA), CRR/CRD 4 maintained transitional rules that permitted the grandfathering of equity investments at a risk-weight of 100 %. These transitional arrangements have been considered lastly for December 31, 2017 and expired thereafter, resulting in no difference thereafter for RWA under the fully loaded or transitional regime.

Since 2015 the Common Equity Tier 1 (CET 1) minimum capital requirement applicable to the Group is 4.5 % of risk weighted assets. In addition to this minimum capital requirement, various capital buffer requirements were phased in starting 2016 and will become fully effective from 2019 onwards. The development and maintenance of a high quality capital base which should primarily consist of Common Equity Tier 1 reflects one of the core elements of the CRR/CRD 4 framework. Specific regulatory adjustments were subject to transitional rules. For instance, deductions for deferred tax assets that rely on future profitability or deductions for indirect and synthetic holdings of own instruments and capital instruments issued by financial sector entities were phased in. These phase-in arrangements to the CET 1 were still applicable for December 31, 2017 reporting as the phase-in percentage was at 80 % in 2017. They are not applicable from January 1, 2018 onwards as the phase-in percentage increased to 100 %. At the same time minority interest only recognizable under the transitional rules is now phased out with a 100 % phaseout rate since January 1, 2018.

Transitional arrangements are still applicable for Additional Tier 1 (AT1) and Tier 2 (T2) capital. Capital instruments that no longer qualify as AT1 or T2 capital under the CRR/CRD 4 fully loaded rules are subject to grandfathering rules during the transitional period and are being phased out from 2013 to 2022 with their recognition capped at 50 % in 2017, 40 % in 2018 and the cap decreasing by ten percentage points every year thereafter.

As the final implementation of CRR/CRD 4 may differ from our expectations, and our competitors’ assumptions and estimates regarding such implementation may vary, our fully loaded CRR/CRD 4 measures may not be comparable with similarly labelled measures used by our competitors.

We believe that these fully loaded CRR/CRD 4 calculations provide useful information to investors as they reflect our progress against the new regulatory capital standards and as many of our competitors have been describing CRR/CRD 4 calculations on a fully loaded basis.

For descriptions of these fully loaded CRR/CRD 4 measures and the differences from the most directly comparable measures under the CRR/CRD 4 transitional rules, please refer to “Management Report: Risk Report: Risk and Capital Performance: Capital, Leverage Ratio and MREL”, in particular the subsections thereof entitled “Development of Regulatory Capital”, “Development of Risk-Weighted Assets” and “Leverage Ratio”.

Declaration of Backing

Deutsche Bank AG ensures, except in the case of political risk, that the following subsidiaries are able to meet their contractual liabilities:

D B Investments (GB) Limited, London

DB International (Asia) Limited, Singapore

DB Privat- und Firmenkundenbank AG, formerly Deutsche Bank Privat- und Geschäftskunden AG, Frankfurt am Main

Deutsche Australia Limited, Sydney

DEUTSCHE BANK A.Ş., Istanbul

Deutsche Bank Americas Holding Corp., Wilmington

Deutsche Bank (China) Co., Ltd., Beijing

Deutsche Bank Europe GmbH, Frankfurt am Main

Deutsche Bank Luxembourg S.A., Luxembourg

Deutsche Bank (Malaysia) Berhad, Kuala Lumpur

Deutsche Bank Polska Spółka Akcyjna, Warsaw[1]

Deutsche Bank S.A. – Banco Alemão, São Paulo

Deutsche Bank, Sociedad Anónima Española, Madrid

Deutsche Bank Società per Azioni, Milan

Deutsche Bank (Suisse) SA, Geneva

Deutsche Bank Trust Company Americas, New York

Deutsche Holdings (Malta) Ltd., St. Julians

Deutsche Immobilien Leasing GmbH, Düsseldorf

Deutsche Morgan Grenfell Group Public Limited Company, London

Deutsche Securities Inc., Tokyo

Deutsche Securities Asia Limited, Hong Kong

Deutsche Securities Saudi Arabia (a closed joint stock company), Riyadh

norisbank GmbH, Bonn

Joint Stock Company Deutsche Bank DBU, Kiev

OOO “Deutsche Bank”, Moscow

Sal. Oppenheim jr. & Cie. AG & Co. KGaA, Köln

[1] With the transfer from Deutsche Bank Polska Spólka Akcyjna to Santander Bank Polska, of the Polish Private & Commercial Bank business excluding its foreign currency denominated retail mortgage portfolio, the declaration of backing for Deutsche Bank Polska Spólka Akcyjna was withdrawn and terminated by Deutsche Bank AG with respect to the divested business with effect as of November 10, 2018. In all other respects, the declaration of backing issued in favor of Deutsche Bank Polska Spólka Akcyjna continues to apply.

Group Five-Year Record

in € m.	2018	2017	2016	2015	2014
Net interest income	**13,192**	12,378	14,707	15,881	14,272
Provision for credit losses	525	525	1,383	956	1,134
Net interest income after provision for credit losses	**12,667**	11,853	13,324	14,925	13,138
Commissions and fee income	10,039	11,002	11,744	12,765	12,409
Net gains (losses) on financial assets/liabilities at fair value through profit or loss	1,332	2,926	1,401	3,842	4,299
Other noninterest income (loss)	753	141	2,161	1,037	969
Total net revenues	**25,316**	26,447	30,014	33,525	31,949
Compensation and benefits	11,814	12,253	11,874	13,293	12,512
General and administrative expenses	11,286	11,973	15,454	18,632	14,654
Policyholder benefits and claims	0	0	374	256	289
Impairment of goodwill and other intangible assets	0	21	1,256	5,776	111
Restructuring activities	360	447	484	710	133
Total noninterest expenses	**23,461**	24,695	29,442	38,667	27,699
Income (loss) before income taxes	**1,330**	1,228	(810)	(6,097)	3,116
Income tax expense	989	1,963	546	675	1,425
Net income (loss)	**341**	(735)	(1,356)	(6,772)	1,691
Net income attributable to noncontrolling interests	75	15	45	21	28
Net income (loss) attributable to Deutsche Bank shareholders and additional equity components	267	(751)	(1,402)	(6,794)	1,663
in € (unless stated otherwise)					
Basic earnings per share[1,2]	(0.01)	(0.53)	(1.08)	(4.52)	1.20
Diluted earnings per share[1,3]	(0.01)	(0.53)	(1.08)	(4.52)	1.17
Dividends paid per share[4]	0.11	0.19[6]	0.00	0.75	0.75
Dividends paid per share in U.S.$[5]	0.13	0.21	0.00	0.84	1.02

[1] The number of average basic shares outstanding has been adjusted for all periods before April 2017 in order to reflect the effect of the bonus element of the subscription rights issue in connection with the capital increase in April 2017. The number of average basic shares outstanding has been adjusted for 2014 in order to reflect the effect of the bonus component of subscription rights issued in connection with the capital increase completed in June 2014.
[2] We calculate basic earnings per share for each period by dividing our net income attributable to Deutsche Bank shareholders by the average number of common shares outstanding. Earnings were adjusted by € 292 million, € 298 million, € 276 million and € 228 million net of tax for the coupons paid on Additional Tier 1 Notes in April 2018, April 2017, April 2016 and April 2015, respectively.
[3] We calculate diluted earnings per share for each period by dividing our net income attributable to Deutsche Bank shareholders by the average number of common shares outstanding, both after assumed conversions. Earnings were adjusted by € 292 million, € 298 million, € 276 million and € 228 million net of tax for the coupons paid on Additional Tier 1 Notes in April 2018, April 2017, April 2016 and April 2015, respectively. No dilutive effect occurred for 2018 as the net income was offset by coupons paid on Additional Tier 1 Notes. For 2017, 2016 and 2015, there is no dilutive effect as the Group reported a net loss.
[4] Dividends declared and paid in the year.
[5] Dividends declared and paid in US $ were translated from euro into US.$ based on the exchange rates as of the respective payment days.
[6] The dividend paid in 2017 consisted of € 0.11 for 2016 and of € 0.08 for 2015 that were paid simultaneously in 2017 after the agreement by the annual general meeting in 2017.

	2018	2017	2016	2015	2014
	in € m.	in € m.	in € m.	in € m.	in € m.
Total assets	1,348,137	1,474,732	1,590,546	1,629,130	1,708,703
Loans at amortized cost	400,297	401,699	408,909	427,749	405,612
Deposits	564,405	581,873	550,204	566,974	532,931
Long-term debt	152,083	159,715	172,316	160,016	144,837
Common shares[1]	5,291	5,291	3,531	3,531	3,531
Total shareholders' equity	62,495	63,174	59,833	62,678	68,351
Common Equity Tier 1 capital (CRR/CRD 4)[2]	47,486	50,808	47,782	52,429	60,103
Common Equity Tier 1 capital (CRR/CRD 4 fully loaded)[2]	47,486	48,300	42,279	44,101	46,076
Tier 1 capital (CRR/CRD 4)[2]	55,091	57,631	55,486	58,222	63,898
Tier 1 capital (CRR/CRD 4 fully loaded)[2]	52,082	52,921	46,829	48,651	50,695
Total regulatory capital (CRR/CRD 4)[2]	61,292	64,016	62,158	64,522	68,293
Total regulatory capital (CRR/CRD 4 fully loaded)[2]	61,292	63,250	59,502	60,976	63,072

[1] Capital increased from authorized capital against cash contributions through a public offering with subscription rights in April 2017 and in June 2014.
[2] Figures presented based on the transitional rules ("CRR/CRD 4") and the full application ("CRR/CRD 4 fully loaded") of the CRR/CRD 4 framework.

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Cautionary statement regarding forward-looking statements

This report contains forward-looking statements. Forward-looking statements are statements that are not historical facts; they include statements about our beliefs and expectations and the assumptions underlying them. These statements are based on plans, estimates and projections as they are currently available to the management of Deutsche Bank. Forward-looking statements therefore speak only as of the date they are made, and we undertake no obligation to update publicly any of them in light of new information or future events.

By their very nature, forward-looking statements involve risks and uncertainties. A number of important factors could therefore cause actual results to differ materially from those contained in any forward-looking statement. Such factors include the conditions in the financial markets in Germany, in Europe, in the United States and elsewhere from which we derive a substantial portion of our revenues and in which we hold a substantial portion of our assets, the development of asset prices and market volatility, potential defaults of borrowers or trading counterparties, the implementation of our strategic initiatives, the reliability of our risk management policies, procedures and methods, and other risks referenced in our filings with the U.S. Securities and Exchange Commission. Such factors are described in detail in our SEC Form 20-F of March 22, 2019 under the heading "Risk Factors." Copies of this document are readily available upon request or can be downloaded from www.db.com/ir.

Our Purpose

This is why we're here. This is what we do.

We are here to enable economic growth and societal progress, by creating positive impact for our clients, our people, our investors and our communities.

2019

Financial Calendar

April 26, 2019
Earnings Report as of March 31, 2019

May 23, 2019
Annual General Meeting in the Festhalle Frankfurt am Main (Exhibition Center)

May 28, 2019
Dividend payment

July 24, 2019
Interim Report as of June 30, 2019

October 30, 2019
Earnings Report as of September 30, 2019

2020

Financial Calendar

January 30, 2020
Preliminary results for the 2019 financial year

March 20, 2020
Annual Report 2019 and Form 20-F

April 29, 2020
Earnings Report as of March 31, 2020

May 20, 2020
Annual General Meeting in the Festhalle Frankfurt am Main (Exhibition Center)

May 25, 2020
Dividend payment
(in case of a distributable profit and the decision of the AGM to pay a dividend)

July 29, 2020
Interim Report as of June 30, 2020

October 28, 2020
Earnings Report as of September 30, 2020