

Dear IBM Investor:

Today your company is positioned to lead as we enter the era of hybrid cloud and AI. As I write to you, the world is still experiencing disruption as a result of the global pandemic.

What we have witnessed over the past year is an acceleration of digital transformation. Every company in every industry wants to build a much stronger digital foundation to fundamentally change the way its business works. There is no going back. In the next two to three years, we expect to see digital transformation at a rate that, before 2020, we thought would take 5 to 10 years.

Perhaps the most profound and exciting change our clients are experiencing is the adoption of new business models based on digital technologies that IBM is building. This is evident whether you look at the use of AI-powered assistants to offset the massive increase of requests flooding call centers, the meteoric rise of telemedicine, or the use of hybrid cloud to build rich, personalized and secure experiences in areas like digital banking.

As I will describe to you in this letter, we have made decisive moves to help our clients thrive by tapping into the immense power of hybrid cloud and AI. My confidence in our ability to exit this turbulent period stronger is grounded in the strength of our strategy, the progress of our transformation, and the talent and resilience of IBMers around the world.

2020 performance

For the year, we generated \$73.6 billion of revenue, a decline of 4 percent excluding the impact of currency and divestitures. Much of this reflects the broader uncertainty of the macro environment, which also affects our clients. The urgency for digital transformation continues to fuel momentum for our business. Our cloud-related revenue grew 20 percent to \$25.1 billion excluding the impact of currency and divestitures, and now represents over one-third of our total revenue.

Red Hat was a key driver with normalized revenue growth of 18 percent in 2020 and a backlog topping \$5 billion for the first time at year end. Red Hat, together with our modernized Cloud Pak solutions, delivered overall software revenue growth for the year. Global Business Services (GBS) cloud revenue grew at a double-digit rate as we focused on modernizing clients' applications and reimagining their workflows with AI. Global Technology Services helped clients navigate the unprecedented volatility in their own business volumes, ending the year with strong contract renewals and new client additions. With IBM Systems, as always, performance reflects product cycles. Even with a very successful new product introduction in the second half of 2019, IBM Z revenue grew in 2020, with the z15 now shipping the largest capacity in the platform's history.

The fundamentals across our business continue to be strong. Our operating gross profit margin expanded 130 basis points to over 49 percent, an indication of the value our clients derive from our offerings. Operating net income was \$7.8 billion, even after a significant charge for structural actions to improve our go-forward position.

In this environment we also took actions to enhance our balance sheet and liquidity, resulting in a stronger financial position. Free cash flow is the fuel for our growth, and for the year we generated a solid \$18.2 billion of net cash from operations and free cash flow of \$10.8 billion. We focused our captive financing business on our hybrid cloud and AI strategy, reducing our external financing needs. We continued to return capital to our shareholders in the form of \$5.8 billion in dividends. We raised the dividend for the 25th consecutive year in an uninterrupted 105 years of paying a dividend, while continuing to invest in technologies, skills, and ecosystems to expand our capabilities and accelerate future growth.

The right strategy for digital transformation

Hybrid cloud and AI are the two next great shifts in the technology landscape, and IBM is positioning itself to play a key role in this swift and massive transformation. We see the hybrid cloud opportunity at \$1 trillion. Most of it is still ahead of us, as less than 25 percent of workloads have moved to public clouds thus far. Meanwhile, the current enterprise deployment rate of AI is only in the single digits.

To seize the immense opportunity that this represents, our approach is platform-centric. Linux, Containers and Kubernetes are the foundation of our hybrid cloud platform with Red Hat OpenShift as our core product, delivering all of these attributes and more. We have a vast software portfolio modernized to run cloud-native anywhere. Our GBS expertise is a key factor in driving consumption and is currently helping hundreds of major clients on their hybrid cloud journeys. All of these capabilities are supported by our systems and cloud infrastructure, which allows us to build industry-specific clouds.

Based on this foundation, we are successfully leveraging Red Hat as a unique platform to address what our global, complex and highly regulated clients need: a hybrid cloud platform that is open, flexible and secure. Our hybrid cloud approach lets clients connect their back office to their front office, modernize mission-critical workloads, build cloud-native apps, and securely deploy and manage data and applications across various IT environments.

Everywhere you look today, businesses have an acute need for speed to market, flexibility and nimbleness, and continuous innovation. On these, hybrid cloud delivers. In fact, clients find that choosing a hybrid cloud approach is 2.5 times more valuable than relying on public cloud alone.

Gaining momentum

One of the best indicators of progress is to look at the pace of client consumption. On that front, we are making good headway. We now have more than 2,800 clients using our hybrid cloud platform, up 40 percent over the past year, as they leverage it to accelerate their own digital transformation journeys.

Energy industry services, software and equipment leader Schlumberger is expanding customer access to its AI-powered exploration and production solutions and making its data platform hybrid cloud-friendly, exclusively through OpenShift. This engagement is also driving business for Cloud Paks, IBM Cloud and GBS. Delta Air Lines is using OpenShift, Cloud Paks and GBS expertise to modernize its digital customer experience.

IBM has built two industry clouds designed to tackle the specific needs of mission-critical and highly regulated industries. Our Cloud for Financial Services added key partners in 2020, such as Adobe, Infosys Finacle, Persistent Systems and many others. Some of the world's largest banks signed on, including Bank of America, BNP Paribas and MUFG Bank.

In 2020, we launched our Cloud for Telecommunications. So far, more than 35 partners have joined. As a strategic partner, Samsung is working with IBM and Red Hat to develop next-generation 5G and mobile edge device solutions for private networks. Separately, we are helping companies like Vodafone Idea, Verizon and Bharti Airtel transform their IT and telecom network operations.

Clients are moving to deploy AI at scale. More than 40,000 clients have turned to IBM to unlock value from their data. IBM's AI platform is differentiated by automation, natural language processing and trust. It is the only AI platform that can run anywhere—on premise, private cloud and public cloud. Clients across industries are using it to infuse AI into their core business processes, such as hiring, supply chains and customer service.

Putting Watson Assistant, natural language processing and enterprise AI search capabilities to work as multilingual virtual agents, IBM helped Children's Healthcare of Atlanta create the "COVID-19 Pediatric Assessment Tool" for parents.



Arvind Krishna
Chairman and
Chief Executive Officer

Thank you to former Executive Chairman Ginni Rometty. Under her leadership we laid the foundation for the hybrid cloud and AI strategy that will drive the engine of our clients' success.

Using the OpenPages with Watson platform, we are helping clients to manage risk more effectively and efficiently across their global operations by consolidating audit, risk, and control processes and procedures.

Trust is table stakes for the expansion of data and AI in daily business processes. IBM clients' data is their data, and their insights are their insights. That commitment and our industry-leading encryption technology differentiate our AI in the marketplace.

Decisive moves for future growth

Over the past year, we have made a series of decisive moves to support our hybrid cloud and AI strategy.

We announced the separation of our managed infrastructure services business in October 2020. In a business where scale matters, "NewCo" will be the biggest in its field, with more than 4,600 clients at the start, including 75 percent of the Fortune 100. Our two companies will continue to share a strong bond as NewCo will remain IBM's preferred partner for infrastructure management.

In 2020, we closed seven strategic acquisitions. All are designed to strengthen our hybrid cloud and AI portfolio. They enhance our software, expand our GBS capabilities in implementation and consulting, augment our security offerings, and support our go-to-market to drive hybrid cloud consumption.

To accelerate consumption of our hybrid cloud platform, we have elevated the role of partners and also rapidly expanded our ecosystem by adding hundreds of new partnerships with global system integrators, independent software vendors and major third-party software partners. We are investing \$1 billion in our ecosystem so that our partners can play a much bigger role in fulfilling the many needs of our clients.

Partners are helping broaden the reach of our software portfolio. For example, we collaborated with Salesforce to build our Digital Health Pass, which incorporates data such as temperature checks, COVID-19 test results and vaccine status to help organizations safely reopen. The Digital Health Pass is combined with the power of Salesforce's customer relationship management solutions and IBM's technologies, such as hybrid cloud, AI and Blockchain. Together we are also building a new vaccine management platform for Ireland's Health Service Executive. Our partnership with ServiceNow on Watson AIOps supports our continued leadership in transformative AI by helping clients automate IT operations and reduce risk.

In addition, we are aligning our go-to-market model with our hybrid cloud and AI approach, implementing a simplified client segmentation, putting IBM Garage at the center of our experiential sales process and working more closely with ecosystem partners so they can deliver more value to clients.

Responsible stewardship

Being a responsible steward of technology is core to IBM culture and has never been more important than it was in 2020.

We saw how our commitment to Good Tech can make a difference during a global emergency. We organized the High-Performance Computing Consortium to put our fastest computers at the disposal of scientists around the world working to understand and combat COVID-19. IBM's Watson Assistant for Citizens helped dozens of governments at all levels disseminate information about COVID-19 testing and best practices.

As protesters took to the streets to condemn systemic racism, we sent a letter to Congress explaining our decision to abandon facial recognition software, prompting other tech companies to follow suit. Internally we launched several social justice initiatives including Emb(race), a program highlighting the experiences of Black IBMers, and a program increasing our partnerships with historically Black colleges and universities (HBCUs). We created the position of SVP of Transformation and Culture, strengthening our transparency around and commitment to fostering the culture of diversity and inclusion that is the foundation of IBM's success.

The climate crisis is one of the most urgent issues of our time. IBM has been a leader in corporate sustainability for half a century. Our first corporate environmental policy statement dates back to 1971. Since 1990, we have shared our progress in managing waste, conserving energy, using renewable electricity and reducing carbon dioxide emissions.

We are taking other steps to advance our environmental leadership. We are setting a new goal to reach net zero greenhouse gas emissions by 2030 to help address the climate crisis. As a founding member of the Climate Leadership Council, we also support a carbon tax that will reduce carbon emissions globally through market-based incentives.

Trust is our license to operate, and for more than a century IBM has earned the trust of our clients and society. We continue to earn it through projects such as our work with the Vatican to develop principles for ethical AI, and our leadership role in data privacy reinforced by the IBM Policy Lab.

Emerging stronger

I am proud of the work IBMers have done to bring us to this point, and I am grateful to you, our shareholders, for your support on our journey.

As I look back, for me as for so many other IBMers, 2020 has put the spotlight on IBM's essential role for our clients. IBM is the backbone of some of the most critical systems that keep the world running. Our technologies and services help banks process credit card transactions, businesses run supply chains, telcos connect customers, healthcare providers improve patient care, and companies and cities tackle cyber threats.

IBM's essential and transformative role in the world is a reminder that few companies have the trust, talent and ingenuity to help clients solve their greatest challenges the way that your company can. IBM is reshaping its future as a hybrid cloud and AI platform company. I am excited about our ability to emerge stronger as the world recovers from the effects of the global public health crisis, and the possibilities ahead as our clients accelerate their digital transformation journeys.



Arvind Krishna

Chairman and Chief Executive Officer

In an effort to provide additional and useful information regarding the company's financial results and other financial information, as determined by generally accepted accounting principles (GAAP), these materials contain non-GAAP financial measures on a continuing operations basis, including revenue adjusted for divested businesses and constant currency, free cash flow, and other "operating" financial measures including operating gross profit margin, operating earnings, operating earnings per share and operating net income. The rationale for management's use of this non-GAAP information is included on pages 18, 19, and 57 of the company's 2020 Annual Report, which is Exhibit 13 to the Form 10-K submitted with the SEC on February 23, 2021. For reconciliation of these non-GAAP financial measures to GAAP and other information, please refer to pages 21, 45, and 58 of the company's 2020 Annual Report. These materials also contain year-to-year change in revenue for Red Hat, normalized for historical comparability. The rationale for management's use of this non-GAAP financial measure and its reconciliation to GAAP are respectively included as Exhibits 99.2 and 99.1 to the company's Form 8-K submitted with the SEC on January 21, 2021.

Hybrid cloud and AI are IBM's clear path to growth

At the beginning of 2020, less than 25 percent of mission-critical workloads had moved to the cloud. As companies sought to equip their employees to work remotely during the pandemic, many sped up the pace of their technological changes. They've realized the sooner they can make the jump to cloud and cloud-enabled AI, the better. This trend will continue until the 75 percent of workloads that were left behind migrate to hybrid cloud.

IBM is doubling down on its investment in hybrid cloud and AI because we see it as the best way to help our customers on this journey. They want the speed, efficiency and innovation that comes with moving to the cloud, without having to reinvent their entire IT infrastructure. That's what hybrid cloud is all about.



“Over the last decade, IBM has transformed itself to meet the mission-critical needs of our clients. Today, IBM is laser-focused on open hybrid cloud—a \$1 trillion market opportunity. Our hybrid cloud platform provides a full stack of capabilities to clients including our AI-enabled software portfolio, cloud transformation services, systems, security and the IBM public cloud.”

Jim Whitehurst
President, IBM

IBM is uniquely qualified to deliver what our clients need and want. In Red Hat OpenShift we have the leading open source hybrid cloud platform. Add our Cloud Paks, and we can transform complex legacy architecture into a completely secure integrated platform. Our clients benefit from the seamless automation, data mining and analysis, development of cloud-native applications and multicloud management our platform provides. Our services team brings the expertise to make migration to the hybrid cloud easy and a custom fit for each client.

Our combined offerings are the recipe for our clients' success and IBM's growth. Our industry-leading security makes the hybrid cloud safe and compliant for heavily regulated enterprises like banks, telcos and energy companies. Our automation frees up people for business transformation. Our cloud-native AI integrates data from across the IT infrastructure, generating new insights into processes and outcomes that create real business value. IBM's services team has the industry and technological expertise to help our clients reinvent themselves using our platform and the applications that run on it, from banking to telecoms to retail to energy to just about anything.

IBM and Red Hat— leading in hybrid cloud

IBM's acquisition of Red Hat has been a game changer for enterprise computing. Red Hat's software underpins the most flexible, secure and cost-effective platform for running mission-critical workloads—the hybrid cloud.

Red Hat OpenShift is the leading enterprise Kubernetes platform—used across industries as the foundation for cloud-native applications. With OpenShift, customers can choose the right environment for workloads and run applications seamlessly across any kind of architecture, whether on-premise, public cloud, private cloud or at the edge.

OpenShift is also the platform for IBM Cloud Paks, offering clients containerized solutions for data, integration, automation, multicloud management and security. Our focus is on helping large enterprises succeed and on removing complexity and risk from their digital journeys.



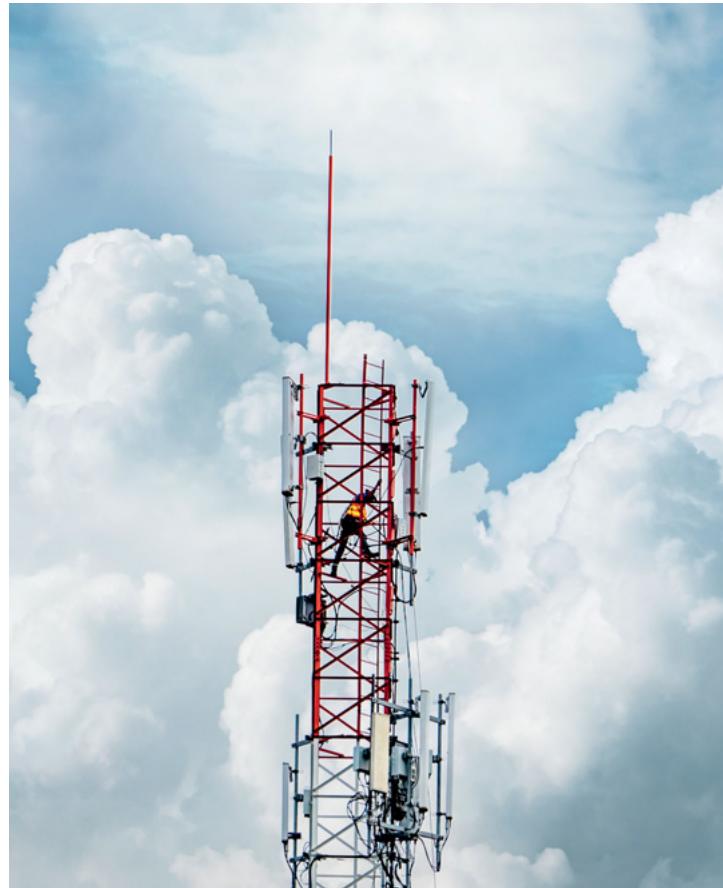
“A hybrid cloud foundation built on open source offers the flexibility, acceleration and innovation that digital transformation requires. For most corporations, hybrid cloud is the only practical way to the cloud.”

Paul Cormier
President and
Chief Executive Officer,
Red Hat

In the financial services sector, our hybrid cloud platform is helping banks around the world roll out new digital services while providing built-in security that satisfies data protection regulations. Technology from IBM Cloud and Red Hat is enabling **Banco Sabadell's** 100 percent digital model in Mexico. **CaixaBank**, Spain's leading financial group in terms of retail and digital banking, is building a hybrid cloud infrastructure using Red Hat OpenShift.

As 5G becomes more prevalent, telecommunications providers need to scale quickly to support growing volumes of data, voice and multimedia services. Indian telco **Vodafone Idea** is transforming its network into an open hybrid cloud platform using IBM's Watson AI and Red Hat Ansible Automation Platform to improve the cost and quality of its core network delivery. **Bharti Airtel** is leveraging IBM and Red Hat to build a more efficient, flexible network cloud for core operations and new digital services.

Red Hat ecosystem partners are helping our clients get more out of our platform. In 2020, IBM and Red Hat introduced Red Hat Marketplace, the first enterprise software and service marketplace designed for hybrid cloud computing. Red Hat Marketplace has one of the largest curated collections of tools and services developers need to build cloud-native applications.



Unlocking the power of client data

Throughout 2020, IBM helped organizations unlock the power of their data to drive measurable results at scale. Clients deployed our hybrid cloud software to modernize their IT landscapes, use data to predict and shape future outcomes, automate workflows, enhance customer service and secure their organizations against cyber threats.

AI for business requires mastery of automation, natural language processing and trust. New Watson Natural Language Understanding capabilities from Project Debater will help businesses analyze linguistic nuances, while new AI FactSheets for Watson Studio in Cloud Pak for Data will increase the transparency and explainability of AI models. Trust is critical to AI adoption. We help our clients understand how AI models make decisions, provide transparency into how AI technology is built, and govern and champion the responsible use of AI.

Additionally, the introduction of Watson AIOps and the acquisitions of **WDG Automation** and **Instana** expanded our AI-powered automation capabilities. Partnerships with **Box**, **Cloudera**, **MongoDB** and **ServiceNow** grew our AI ecosystem.

We have more than 40,000 Watson client engagements across 20 industries, where market leaders are using IBM Watson to work smarter. **EY** is using IBM Watson Discovery to transform M&A due diligence with a custom natural language processing model that delivers insights into competitive deal processes.

Deutsche Lufthansa AG is using IBM Watson Studio, IBM Watson Machine Learning and IBM Cloud Pak for Data to achieve operational excellence and enhance customer and employee experiences. And with our business partner **EquBot**, we helped **HSBC** develop the AI-powered US equity index AiPEX, a first-of-its-kind tool that analyzes vast amounts of publicly available data—from company announcements to satellite images of store parking lots—to identify potential growth stocks.

Navigating the pandemic with Watson Assistant

Organizations turned to Watson Assistant, IBM's AI-powered virtual agent for business, to field COVID-related questions from customers, employees and the general public. Use of Watson Assistant surged 64 percent between February and November 2020.

Burger King Brazil customized Watson Assistant to connect 16,000 employees across 800 restaurants to information on HR with speed, reliability and security. Using Watson Assistant and Watson Discovery, **GlaxoSmithKline** launched 16 virtual assistants that answered 83,000 questions in a single three-month span. **GM Financial** used Watson Assistant to manage 50 to 60 percent of live chat requests when the pandemic hit.

IBM trained Watson Assistant to answer COVID-related questions, and offered it free of charge to hospitals, governments and other organizations for 90 days. **The Royal Marsden**, a leading London-based cancer center, used its virtual agent to give employees consistent information about the virus and related workplace guidance. The **Government of Colombia** created a virtual agent that facilitated over 11,000 queries per month on travel guidance and virus prevention. And ahead of the November elections, the **Idaho Secretary of State** used Watson Assistant to answer logistical questions from its 900,000-plus voters.



“We want to help clients transform their businesses—leveraging our hybrid cloud and AI software to modernize their applications, improve customer service and dramatically cut costs. We'll continue working across our ecosystem to increase adoption of our platform, and help our clients find innovative ways to fuel their digital transformations.”

Rob Thomas
Senior Vice President,
IBM Cloud and Data Platform

Creating intelligent workflows

IBM Global Business Services (GBS) helps organizations reinvent the way they work. With intelligent workflows, businesses can reshape core functions across their organizations—from supply chains to recruitment and bill processing. Running on the hybrid cloud and powered by IBM's leading AI automation software and analytics, intelligent workflows connect data from disparate systems, streamline processes and generate actionable insights.

For example, 12 of Europe's largest banks worked with IBM consultants to co-create a blockchain-based trade finance platform called **we.trade**. Small- and medium-sized businesses benefit from being able to collaborate and trade across a transparent and secure environment. Transaction information is authorized and shared only with the appropriate parties across the platform via smart contracts. Along with reduced risk and increased regulatory compliance for all users, **we.trade** has reported up to 80 percent savings in transaction processing.

In just five days, IBM helped **TSB Bank** in the United Kingdom launch its web-based TSB Smart Agent to allow immediate customer access to applications for repayment deferrals on mortgages and loans during the pandemic. The AI-driven TSB Smart Agent complemented employee actions to respond to more than 40,000 customer requests during the first several weeks of operation.

Rising to strategic needs and multiple challenges caused by brushfires and COVID-19, leading telecommunications company **Telstra** and IBM co-created a cognitive supply chain control tower, an integrated supply chain platform and agile work protocols to serve its operations reliably.



Mikhel Ruia, Managing Director of Glenmuir, a British golf clothing manufacturer and member of **we.trade** via its bank, HSBC.



“An open, flexible, hybrid approach to cloud gives businesses the freedom to choose from multiple providers to best meet their business and IT needs. As we help clients shift to hybrid cloud, we see tremendous benefits from open innovation. Build once, run anywhere. Innovate anywhere with anyone’s technology. That’s the beauty of a hybrid cloud platform.”

John Granger
Senior Vice President,
Hybrid Cloud Services and
Chief Operating Officer,
IBM Global Business Services



“2020 was one of the most challenging periods in history for businesses, with 6 out of 10 organizations accelerating their digital transformations. Recognizing that future disruptions are inevitable and unpredictable, now is the time to create intelligent workflows that streamline processes and help people manage these tectonic shifts.”

Mark Foster
Senior Vice President,
IBM Services

“NewCo”: a trusted partner to the world’s global enterprises

To clarify our approach to the \$1 trillion market opportunity for hybrid cloud growth, IBM announced the spin-off of our market-leading managed infrastructure services unit, “NewCo” (to be named later).

The spin-off will create two market-leading companies focused on what they do best. For IBM that means concentrating on its hybrid cloud platform, AI capabilities and consulting services to help clients on their digital transformation journeys. NewCo will pursue a \$500 billion market opportunity in managed infrastructure services.

NewCo—with more than 4,600 technology-intensive, highly regulated clients in 115 countries, a backlog of \$60 billion and more than twice the scale of its nearest competitor—will have greater agility to design, run and modernize the infrastructures of the world’s most important organizations.

Both companies will be on an improved growth trajectory with greater abilities to partner and capture new opportunities—creating value for clients and shareholders. Operating independently, IBM and NewCo will capitalize on their respective strengths.



“The spin-off of NewCo is an opportunity that presents exciting potential. We are already the number one managed infrastructure services provider in the world. Our unmatched talent, the breadth of our services, our ecosystem of partners and our deep global client relationships should position us well for the future.”

Martin Schroeter
CEO, NewCo

Driving innovation and resilience

Maintaining business continuity, enabling remote workforces and strengthening virtual customer engagement were all critical in 2020. In response, IBM Global Technology Services (GTS) rallied for go-to-market coverage—taking client service to the next level to keep businesses up and running while facilitating their migrations to hybrid cloud.

As GTS focused its service offerings to support hybrid cloud and AI, industry analysts took notice. **NelsonHall** gave IBM top marks for addressing both immediate and future client needs. **Everest** joined all analysts in naming IBM “a leader in delivery automation through intelligent automation.” And **Forrester** ranked IBM as a leader in disaster recovery as a service.* For example, **National Telecom Public Co., Ltd.** is using IBM open-source software support services to help hotels control virus spread as Thailand reopens its borders.

But outstanding client services is what really defined GTS in 2020. Hybrid cloud technology allows manufacturers, logistics companies, governments, retailers and service providers, to work together across a multitude of different computing environments. As a result, GTS saw significant demand for a hybrid cloud approach to reinventing supply chains in 2020. For example, IBM signed a multi-year agreement with **Coca-Cola European Partners**, to use the power of the open hybrid cloud, combined with the expertise of IBM Services, to transform its soft drink supply chain.

Adopting a hybrid cloud strategy, South Korean credit card issuer **Lotte Card** turned to GTS to migrate and manage its mission-critical enterprise systems. Using cloud-native technology from IBM and Red Hat OpenShift, Lotte Card accelerated customer workload processing by 300 percent. As the speed of digital transformation increases, the flexibility of cloud technologies over traditional IT infrastructures will allow Lotte Card to respond with greater agility to rapidly changing market conditions, and to better serve its customers in near real time.

* *The Forrester Wave™: Disaster Recovery-As-A-Service Providers, Q2 2019*
by Naveen Chhabra with Glenn O'Donnell, Amanda Lipson and Bill Nagel. April 2019.

Enhancing the client experience through ecosystems



“We’re dedicated to fostering a culture of openness and collaboration among our ecosystem partners while ensuring that their data is not compromised. By investing in our partners and working together, we will drive success for our clients, for our partners and for IBM.”

Bob Lord
Senior Vice President,
Worldwide Ecosystems
and Blockchain

Uniting the developer ecosystem to solve global problems

Since its inception in 2018, the annual Call for Code competition to create open source technology to help tackle the world’s biggest challenges has scaled to engage more than 400,000 developers and problem solvers across 179 nations.

The 2020 challenge focused on managing the effects of climate change and fighting COVID-19. The winning application from **Agrolly** is built on IBM Cloud Object Storage, IBM Watson Studio and IBM Watson Assistant. It connects small farmers to personalized, real-time data from The Weather Company (an IBM business) to help them cope with climate change. The competition also yielded promising COVID-19 solutions, some of which may be going to market.

As the need for digital transformation accelerated in 2020, it became clear that businesses benefited the most when they were supported by an ecosystem of partners that continually provided the best technologies and industry expertise.

That’s why IBM has committed to a \$1 billion investment in its hybrid cloud ecosystem over the next three years. This investment has already begun supporting a coalition of best-of-breed global system integrators and independent software vendors that are helping clients migrate their mission-critical workloads to IBM’s hybrid cloud platform.

More than 85 new partners from a wide range of technology and industry backgrounds joined the ecosystem in 2020—reflecting IBM’s ability to leverage long-standing relationships in the technology community. A key part of this ecosystem, Red Hat Marketplace provides clients with greater scale, resources and capabilities, reinforcing the value of the OpenShift hybrid cloud platform.



Adobe, a leader in multimedia and creative software, is partnering with Red Hat and IBM to focus on instilling trust through the customer experience for businesses in regulated industries. The IBM iX digital and design consultancy will extend its offerings across Adobe's core enterprise applications.

The global leader in customer relationship management (CRM) platforms, **Salesforce** is working with IBM to help organizations safely reopen and provide individuals with a verifiable way to manage and share their vaccination and health status.

IBM advanced its long-standing partnership with enterprise application software innovator **SAP** by contributing an industry cloud solution focused on industrial manufacturing. The aim is to help companies rewire their organizations to create efficient, automated business processes that increase productivity and customer satisfaction.

A pacesetter in digital workflow software, **ServiceNow** is collaborating with IBM to use Watson AIOps and ServiceNow's intelligent workflow capabilities to help companies reduce operational risk and lower costs through automation.

Leading systems integrator **Wipro** expanded its partnership with IBM to help businesses securely migrate and manage mission-critical workloads and cloud-native applications on IBM's hybrid cloud platform.



"IBM's streamlined engagement model simplifies the way clients interact with us, experience our differentiated technology and service offerings, leverage our unmatched industry expertise, and realize tangible business value. By following these principles, IBM will open new market opportunities as we give more clients the confidence to use their data for competitive advantage."

Bridget van Kralingen
Senior Vice President,
Global Markets



Driving growth for our clients, our partners and IBM

In 2020, IBM adopted a single, consistent client engagement model across hybrid cloud, software, services and systems—giving clients greater access to Red Hat and acting as one team with a singular focus on client success. Clients want to consume our technology more easily, with greater access to our unmatched technical and industry expertise and business value creation earlier in the process. In response, we have intensified our focus on experiential selling—both digitally and through IBM Garage, where we co-create, co-execute and co-operate with clients to give them clear visibility into our capabilities and their projected business results.

We also increased investment in our ecosystem of system integrators and software vendors so they can play a much bigger role in client fulfillment in ways that drive mutual success for customers, partners and IBM. We're giving our partners the access they need to experience our hybrid cloud platform and develop solutions that speak directly to client needs.

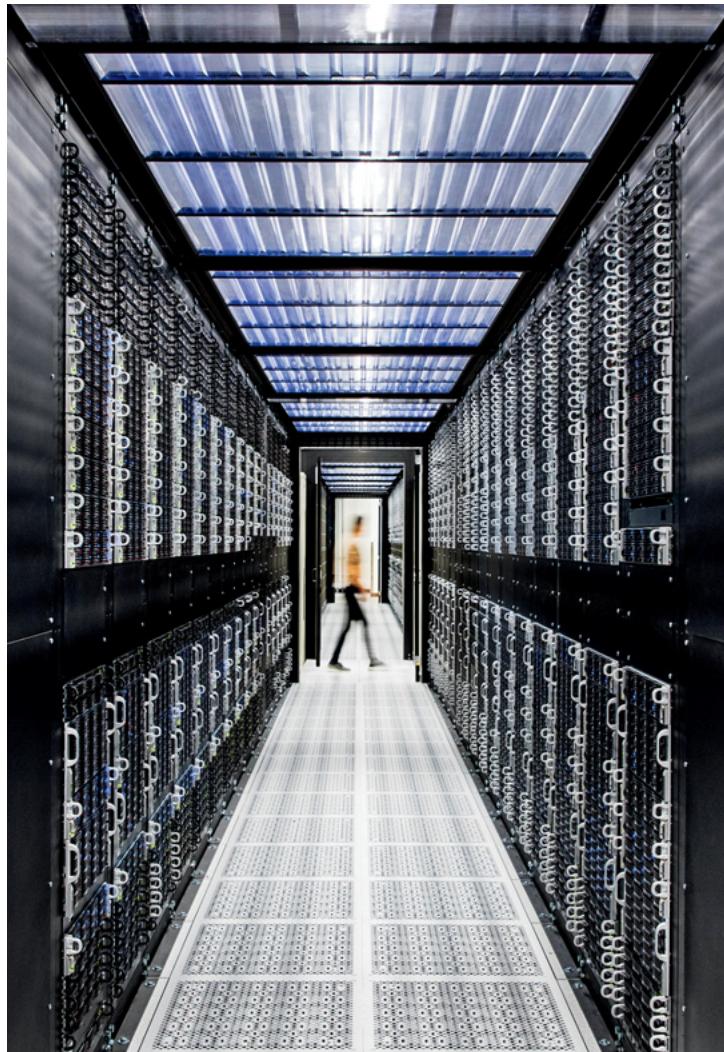
The industry standard for cloud and enterprise IT

As governments and regulated industries migrate their mission-critical workloads to hybrid cloud, they must be confident in the safety, security and reliability of the IT infrastructures they rely on, and know that their systems are built to adapt to client needs—not vice versa. IBM's industry-optimized clouds enable clients to focus on their business processes instead of on IT and applications.

These are highly focused clouds designed with a deep understanding of particular regulatory environments. Industry-specific features and controls including identity management, access management and configuration management are built in so that any solutions clients develop or deploy on these clouds automatically comply with industry regulations.

In 2020, we brought some of the world's largest banks onto IBM Cloud for Financial Services, including **BNP Paribas** and **MUFG Bank**, and expanded our financial services ecosystem. We unveiled the IBM Cloud for Telecommunications and added 35 partners to our telecommunications ecosystem. We also broadened our strategic partnership with **Samsung** on 5G technology. Using IBM Cloud Satellite, which runs on Red Hat OpenShift, IBM is also collaborating with **AT&T** to help businesses deploy applications to any environment where their data resides—including the network edge.

IBM's Systems portfolio delivers critical value to our enterprise client base, in support of our hybrid cloud strategy. IBM's z15 saw record-setting volumes on Linux as clients leveraged Red Hat OpenShift, Ansible and our cloud-native offerings in response to the pandemic. Our high-value, secure and scalable platform was more relevant than ever. In financial services, for example, z15 helped our clients scale capacity quickly and remotely, enabling them to navigate unprecedented market volatility. 2020 also marked the 20th anniversary of Linux on IBM Z, a milestone of innovation for a platform that is attracting a new generation of developers to help our clients anticipate and overcome future challenges.



“With Red Hat OpenShift on IBM Z and LinuxONE servers, clients can modernize their applications for the hybrid cloud and determine their own IT strategies to optimize the value of their existing IT infrastructure. They can maintain security and scalability in the public cloud, and enjoy ‘write once/run anywhere’ application portability in an environment that protects sensitive data.”

Tom Rosamilia
Senior Vice President,
IBM Systems and Chairman,
North America



“IBM is making digital transformation increasingly accessible by creating industry-specific clouds, which unleash enormous value, especially for regulated industries like banking, government and telco. By building this capacity, we open our clients to digital transformation that can change how they serve their customers and think about their business, while reducing risk to the financial system as a whole.”

Howard Boville
Senior Vice President,
IBM Hybrid Cloud

Applying science and technology to serve client needs in 2020

For the 28th straight year, IBM led the industry in US patents—the majority of them in AI, cloud and hybrid cloud, quantum computing, and security. IBM Research continues to build on our natural language processing and encryption innovations to deliver real-world commercial results.

An AI model from IBM and **Pfizer** uses written text samples to help predict the eventual onset of Alzheimer's disease. The model uses IBM's hybrid cloud platform, which enables the automated collection and analysis of global data.

IBM led the global **Urgency of Science (#urgencyofscience)** campaign, joined by numerous private and public sector partners.

IBM and **AMD** entered a Confidential Computing Collaboration agreement to foster security in hybrid cloud and high-performance computing environments.

IBM released **RoboRXN**, a free, cloud-disseminated tool that uses AI, neural translation and machine automation to help scientists more accurately predict chemical reactions.



"Research is a critical component of IBM's commitment to delighting our clients with the solutions and industry expertise they need to compete and grow. We are optimally positioned for growth with our hybrid cloud, AI and services offerings. Emerging technologies like quantum—along with our ongoing innovations in security and energy efficiency—will supercharge the next phase of our clients' digital transformations as they derive even greater business value from their data."

Jim Whitehurst
President, IBM



"With quantum, we're witnessing the most exciting development in computing in 60 years. It will be a revolution in the way science is practiced, the rate of accelerated discovery and a whole new class of intelligent mission-critical applications."

Dario Gil
Senior Vice President and
Director of IBM Research

New milestones for IBM Research

In 2020, IBM Research doubled down on transformative innovations. Chief among these is quantum computing, which uses quantum physics principles to solve problems far faster than binary computing. Complementing classical computing, quantum could help tackle some of our toughest challenges.

IBM leads in quantum computing, with nearly 300,000 registered users and more than 130 organizations in our network. Among them, **Anthem, Inc.** is studying how quantum may improve diagnostic accuracy for personalized healthcare treatments. **Delta Air Lines** is exploring quantum's potential to transform customer experiences. **Mitsubishi Chemical** and **JSR** are researching ways to reduce computation errors in manufacturing more efficient OLED devices. And the **University of Tokyo** and **Fraunhofer-Gesellschaft (Germany)** will operate the first non-US installations of IBM Q System One computers.

By 2023, IBM will produce a quantum processor with more than 1,000 qubits—giving us an advantage in solving problems faster than even today's fastest supercomputers. We have also developed quantum-safe security software for hybrid cloud, and have partnered with historically Black colleges and universities (HBCUs) to help prepare quantum's next generation.



Transformation and culture

Having the right culture gives meaning to IBM's mission, fosters growth and innovation, and contributes directly to our delivery of differentiated value to our clients. While dedicating themselves to client service in 2020, IBMers also shared their thoughts—through company-wide conversations, via our annual engagement survey and directly with our CEO—about evolving our culture in four key areas:

Growth—obsessing over our clients' growth; winning in the marketplace to drive growth for IBM; providing development opportunities to help IBMers succeed in their careers

Inclusion—building and developing empathetic relationships; fostering meaningful collaborations; embracing flexibility; listening

Innovation—shedding the status quo to encourage entrepreneurship; being creative and adaptable; being curious, bold and nimble; learning from our mistakes

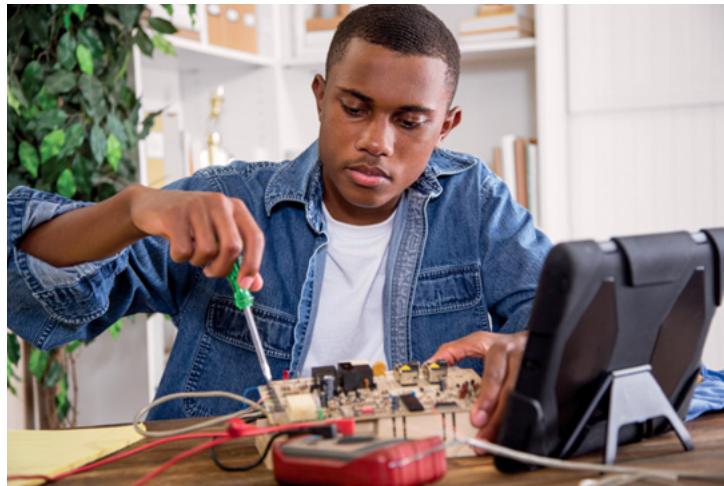
Feedback—embracing candor and transparency; creating avenues for ongoing dialogs; being respectful, but honest and willing to grow

Leading with purpose and culture yields powerful and sustainable outcomes. It's what motivates us to do our best work and enables us to bring our whole selves to work. As IBM pursues the disruptive processes of growth and change for our clients and for our company, we also proceed with purpose—committed to our values and focused on what matters.



"Companies focused on culture as a tenet for growth will thrive in the digital era as it becomes the underlying force driving the inclusion, innovation and trust that leads to sustainable solutions to yield powerful outcomes and meaningful societal progress."

Obed Louissaint
Senior Vice President,
Transformation and Culture



IBM's commitment to purpose and values in 2020

In 2020 IBM reaffirmed its commitment to our purpose and values through a number of key initiatives:

- CEO letter to the US Congress outlining policy proposals to advance racial equality and announcing that IBM has sunset its general-purpose facial recognition and analysis software products.
- Sponsorship of OneTen, a startup that will focus on training Black candidates to fill 1 million professional corporate roles over the next 10 years.
- Call for Code for Racial Justice—an activation of IBM's ecosystem of partners, advocates and employees to develop open source projects focusing on Police & Judicial Reform and Accountability, Diverse Representation and Policy & Legislation Reform.
- Launch of Open P-TECH—a free digital education platform for workplace and digital skills including AI, cloud computing, cybersecurity and design thinking—and committed to 1,000 paid IBM internships for US P-TECH students.
- IBM Quantum Computing education partnership with HBCUs as part of a \$100 million investment in developing a diverse and inclusive quantum workforce.
- IBM Policy Lab calls for a risk-based approach to AI regulation, resulting in the Vatican's nomination of IBM as one of two primary signatories to the Rome Call for AI Ethics advocating a human-centered approach to AI.

Reinventing the world of work

Events of the most difficult year in recent memory tested—and then affirmed—IBM's pioneering commitment to reinventing the world of work. Our tradition of applying intelligence, reason and science to all challenges for our employees and our clients became more relevant than ever during a period of global pandemic, social unrest and political uncertainty that taxed all of our resolve. To manage these crises, we relied upon the full force of IBM values, technologies and humanistic approaches to protect, support and inspire our workforce.

The COVID-19 pandemic laid bare the inadequacies of 19th century industrial work structures, such as: the 9-to-5 workday predicated on a handful of time zones in a world with more than two dozen; agricultural-era assumptions about family structure and care obligations; noninclusive definitions of personal identities; and stigmas surrounding mental health issues. The current crises underscore the need to focus on what matters—leadership and efficiency, but also empathy and acceptance—all supported by a foundation of trust.



“Thanks to our hybrid cloud-enabled digital workplace, IBM adapted nearly overnight to 95 percent remote work in 2020. With the right collaboration tools in place, we focused on employee health, well-being and resiliency—offering new benefits and training 30,000 managers in empathetic leadership. Employee engagement actually increased in 2020. And we are strongly positioned to define the future of work for a post-COVID world.”

Nickle LaMoreaux
Senior Vice President and
Chief Human Resources Officer

IBM CEO Arvind Krishna endorsed the IBM Work From Home Pledge, created by IBMers.

Managing workforce crises in 2020

IBM focused on workforce resilience during 2020.

In January, we mobilized IBM's Corporate Crisis Management Team (CCMT) at the earliest signs of a potential pandemic, relying on IBM's established response plans for Ebola and SARS.

In early March, we transitioned 95 percent of IBM's global workforce to remote work in a matter of days, leveraging the IBM hybrid cloud platform to provide key workforce collaboration tools to more than 345,000 employees across more than 175 countries.

Throughout 2020 we provided key tools, wellness and mental health guidance, and management support to help employees stay safe and sane, circulating real-time global and local updates on the pandemic, and establishing a 24/7 “Ask Health & Safety” team to address questions and concerns.

As we prepare for a safe post-COVID workplace, we must adjust our people management approach to the new normal. Mastering ongoing challenges will require maintaining a growth mindset, adapting to change and learning from our mistakes. IBM will apply design thinking to how employees use hybrid office space in purpose-driven ways. We must keep current with skills retraining and recruiting as accelerated digital transformation drives a tighter tech skills job market. Automation will create new jobs. We will make every effort to address employee demands for empathy, transparency and social responsibility in a new era of activism.

IBM Work From Home Pledge

I pledge to be **Family First**.
I pledge to support **Flexibility for Personal Needs**.
I pledge to support “**Not Camera Ready**” times.
I pledge to **Be Kind**.
I pledge to **Set Boundaries** and **Prevent Video Fatigue**.
I pledge to **Take Care of Myself**.
I pledge to **Frequently Check In** on people.
I pledge to **Be Connected**.



Financial Highlights

International Business Machines Corporation and Subsidiary Companies

(\$ in millions except per share amounts)

For the year ended December 31:	2020	2019
Revenue	\$ 73,620	\$ 77,147
Net Income	\$ 5,590*	\$ 9,431
Income from continuing operations	\$ 5,501*	\$ 9,435
Operating (non-GAAP) earnings**	\$ 7,774*	\$ 11,436
Earnings per share of common stock—continuing operations		
Assuming dilution	\$ 6.13*	\$ 10.57
Basic	\$ 6.18*	\$ 10.63
Diluted operating (non-GAAP)**	\$ 8.67*	\$ 12.81
Net cash provided by operating activities		
Capital expenditures, net	\$ 3,042	\$ 2,370
Share repurchases	\$ —	\$ 1,361
Cash dividends paid on common stock	\$ 5,797	\$ 5,707
Per share of common stock	\$ 6.51	\$ 6.43
At December 31:		
Cash, cash equivalents, restricted cash and marketable securities	\$ 14,275	\$ 9,009
Total assets	\$155,971	\$152,186
Working capital	\$ (705)	\$ 718
Total debt	\$ 61,538	\$ 62,899
Total equity	\$ 20,727	\$ 20,985
Common shares outstanding (in millions)	893	887
Stock price per common share	\$ 125.88	\$ 134.04

* Includes a \$2.0 billion pre-tax charge for structural actions in the fourth quarter resulting in an impact of (\$1.84) to diluted earnings per share from continuing operations and diluted operating (non-GAAP) earnings per share. The impact to basic earnings per share was (\$1.85).

**See page 45 for a reconciliation of net income to operating earnings.

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Management Discussion

International Business Machines Corporation and Subsidiary Companies

OVERVIEW

The financial section of the International Business Machines Corporation (IBM or the company) 2020 Annual Report includes the Management Discussion, the Consolidated Financial Statements and the Notes to Consolidated Financial Statements. This Overview is designed to provide the reader with some perspective regarding the information contained in the financial section.

Organization of Information

- The Management Discussion is designed to provide readers with an overview of the business and a narrative on our financial results and certain factors that may affect our future prospects from the perspective of management. The “Management Discussion Snapshot” presents an overview of the key performance drivers in 2020.
- Beginning with the “Year in Review,” the Management Discussion contains the results of operations for each reportable segment of the business and a discussion of our financial position and cash flows. Other key sections within the Management Discussion include: “Looking Forward” and “Liquidity and Capital Resources,” which includes a description of management’s definition and use of free cash flow.
- The Consolidated Financial Statements provide an overview of income and cash flow performance and financial position.
- The Notes follow the Consolidated Financial Statements. Among other items, the Notes contain our accounting policies, revenue information, acquisitions and divestitures, certain commitments and contingencies and retirement-related plans information.
- On October 8, 2020, we announced our plan to separate the managed infrastructure services unit of our Global Technology Services (GTS) segment into a new public company (currently referred to as NewCo and to be named later). The separation is expected to be achieved through a U.S. federal tax-free spin-off to IBM shareholders and completed by the end of 2021. It will be subject to customary market, regulatory and other closing conditions, including final IBM Board of Directors’ approval. The announcement did not have any classification impact to our Consolidated Financial Statements or segment reporting. We will report the managed infrastructure services unit as discontinued operations after its separation.
- In the first quarter of 2020, we realigned offerings and the related management system to reflect divestitures completed in the second half of 2019 and tighter integration of certain industry-specific consulting services. These changes impacted Cloud & Cognitive Software and Global Business Services (GBS) but did not impact the Consolidated Financial Statements. Total recast revenue for full-year 2019 and 2018 was approximately \$0.3 billion and \$0.4 billion, respectively. The periods presented in this Annual Report are reported on a comparable basis.
- On July 9, 2019, IBM acquired 100 percent of the outstanding shares of Red Hat, Inc. (Red Hat). Red Hat is reported within the Cloud & Cognitive Software segment, in Cloud & Data Platforms. Refer to note E, “Acquisitions & Divestitures,” for additional information.
- The references to “adjusted for currency” or “at constant currency” in the Management Discussion do not include operational impacts that could result from fluctuations in foreign currency rates. When we refer to growth rates at constant currency or adjust such growth rates for currency, it is done so that certain financial results can be viewed without the impact of fluctuations in foreign currency exchange rates, thereby facilitating period-to-period comparisons of business performance. Financial results adjusted for currency are calculated by translating current period activity in local currency using the comparable prior-year period’s currency conversion rate. This approach is used for countries where the functional currency is the local currency. Generally, when the dollar either strengthens or weakens against other currencies, the growth at constant currency rates or adjusting for currency will be higher or lower than growth reported at actual exchange rates. See “Currency Rate Fluctuations” for additional information.
- To provide better transparency on the recurring performance of the ongoing business, the company provides total revenue, geographic revenue and cloud revenue growth rates excluding divested businesses and at constant currency. These divested businesses are included in the category “Other—divested businesses.”
- Within the financial statements and tables in this Annual Report, certain columns and rows may not add due to the use of rounded numbers for disclosure purposes. Percentages reported are calculated from the underlying whole-dollar numbers.

Operating (non-GAAP) Earnings

In an effort to provide better transparency into the operational results of the business, supplementally, management separates business results into operating and non-operating categories. Operating earnings from continuing operations is a non-GAAP measure that excludes the effects of certain acquisition-related charges, intangible asset amortization, expense resulting from basis differences on equity method investments, retirement-related costs, discontinued operations and certain managed infrastructure services spin-off charges and their related tax impacts. Management characterizes direct and incremental charges incurred to accomplish the managed infrastructure services spin-off as non-operating given their unique and non-recurring nature. These charges primarily relate to transaction and third-party support costs, business separation and applicable employee retention fees, pension settlement charges and related tax charges. All other spending for the managed infrastructure services business operations is included in both earnings from continuing operations and in operating (non-GAAP) earnings. Due to the unique, non-recurring nature of the enactment of the U.S.

Management Discussion

International Business Machines Corporation and Subsidiary Companies

Tax Cuts and Jobs Act (U.S. tax reform), management characterizes the one-time provisional charge recorded in the fourth quarter of 2017 and adjustments to that charge as non-operating. Adjustments include true-ups, accounting elections and any changes to regulations, laws, audit adjustments, etc. that affect the recorded one-time charge. For acquisitions, operating (non-GAAP) earnings exclude the amortization of purchased intangible assets and acquisition-related charges such as in-process research and development, transaction costs, applicable retention, restructuring and related expenses, tax charges related to acquisition integration and pre-closing charges, such as financing costs. These charges are excluded as they may be inconsistent in amount and timing from period to period and are significantly impacted by the size, type and frequency of the company's acquisitions. All other spending for acquired companies is included in both earnings from continuing operations and in operating (non-GAAP) earnings. Throughout the Management Discussion, the impact of acquisitions over the prior 12-month period may be a driver of higher expense year to year. For retirement-related costs, management characterizes certain items as operating and others as non-operating, consistent with GAAP. We include defined benefit plan and nonpension postretirement benefit plan service costs, multi-employer plan costs and the cost of defined contribution plans in operating earnings. Non-operating retirement-related costs include defined benefit plan and nonpension postretirement benefit plan amortization of prior service costs, interest cost, expected return on plan assets, amortized actuarial gains/losses, the impacts of any plan curtailments/settlements and pension insolvency costs and other costs. Non-operating retirement-related costs are primarily related to changes in pension plan assets and liabilities which are tied to financial market performance, and the company considers these costs to be outside of the operational performance of the business.

Overall, management believes that supplementally providing investors with a view of operating earnings as described above provides increased transparency and clarity into both the operational results of the business and the performance of the company's pension plans; improves visibility to management decisions and their impacts on operational performance; enables better comparison to peer companies; and allows the company to provide a long-term strategic view of the business going forward. Our reportable segment financial results reflect pre-tax operating earnings from continuing operations, consistent with our management and measurement system. In addition, these non-GAAP measures provide a perspective consistent with areas of interest we routinely receive from investors and analysts.

FORWARD-LOOKING AND CAUTIONARY STATEMENTS

Certain statements contained in this Annual Report may constitute forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Any forward-looking statement in this Annual Report speaks only as of the date on which it is made; IBM assumes no obligation to update or revise any such statements except as required by law. Forward-looking statements are based on IBM's current assumptions regarding future business and financial performance; these statements, by their nature, address matters that are uncertain to different degrees. Forward-looking statements involve a number of risks, uncertainties and other factors that could cause actual results to be materially different, as discussed more fully elsewhere in this Annual Report and in the company's filings with the Securities and Exchange Commission (SEC), including IBM's 2020 Form 10-K filed on February 23, 2021.

MANAGEMENT DISCUSSION SNAPSHOT

(\$ and shares in millions except per share amounts)

For year ended December 31:	2020	2019	Yr.-to-Yr. Percent/Margin Change
Revenue	\$ 73,620	\$ 77,147	(4.6)%*
Gross profit margin	48.3 %	47.3 %	1.0 pts.
Total expense and other (income)	\$ 30,937 **	\$ 26,322	17.5 %
Income from continuing operations before income taxes	\$ 4,637 **	\$ 10,166	(54.4)%
Provision for/(benefit from) income taxes from continuing operations	\$ (864)	\$ 731	NM
Income from continuing operations	\$ 5,501 **	\$ 9,435	(41.7)%
Income from continuing operations margin	7.5 %	12.2 %	(4.8)pts.
Income/(loss) from discontinued operations, net of tax ⁺	\$ 89	\$ (4)	NM
Net income	\$ 5,590 **	\$ 9,431	(40.7)%
Earnings per share from continuing operations—assuming dilution	\$ 6.13 **	\$ 10.57	(42.0)%
Weighted-average shares outstanding—assuming dilution	896.6	892.8	0.4 %
Assets ⁺⁺	\$155,971	\$152,186	2.5 %
Liabilities ⁺⁺	\$135,244	\$131,202	3.1 %
Equity ⁺⁺	\$ 20,727	\$ 20,985	(1.2)%

* (4.7) percent adjusted for currency; (3.5) percent excluding divested businesses and adjusted for currency.

** Includes a \$2.0 billion pre-tax charge for structural actions in the fourth quarter resulting in an impact to diluted earnings per share from continuing operations of (\$1.84).

⁺ Relates to discontinued operations of Microelectronics, divested in 2015.

⁺⁺ At December 31

NM—Not meaningful

Management Discussion

International Business Machines Corporation and Subsidiary Companies

The following table provides the company's operating (non-GAAP) earnings for 2020 and 2019. See page 45 for additional information.

For year ended December 31:	2020	2019	Yr.-to-Yr. Percent Change
Net income as reported	\$5,590 *	\$ 9,431	(40.7)%
Income/(loss) from discontinued operations, net of tax**	89	(4)	NM
Income from continuing operations	\$5,501 *	\$ 9,435	(41.7)%
Non-operating adjustments (net of tax)			
Acquisition-related charges	1,454	1,343	8.3
Non-operating retirement-related costs/(income)	908	512	77.2
U.S. tax reform impacts	(110)	146	NM
Spin-off-related charges	21	—	NM
Operating (non-GAAP) earnings	\$7,774 *	\$11,436	(32.0)%
Diluted operating (non-GAAP) earnings per share	\$ 8.67 *	\$ 12.81	(32.3)%

* Includes a \$2.0 billion pre-tax charge for structural actions in the fourth quarter resulting in an impact to diluted operating (non-GAAP) earnings per share of (\$1.84).

** Relates to discontinued operations of Microelectronics, divested in 2015.

NM—Not meaningful

Strategic Announcement

IBM is redefining its future as a hybrid cloud platform and AI company. The October 8, 2020 announcement of our plan to separate the managed infrastructure services unit of our GTS segment into a new public company will create two industry-leading companies, each with strategic focus and flexibility to capitalize on their respective missions and drive client and shareholder value. Client buying needs for application and infrastructure services are diverging, while adoption of our hybrid cloud platform is accelerating. This change in clients' needs makes it the right time to create two market-leading companies focused on what they do best. IBM will focus on its open hybrid cloud platform and AI capabilities to accelerate clients' digital transformations. Upon separation, NewCo will immediately be the world's leading managed infrastructure services provider and will have greater agility to design, run and modernize the infrastructure of the world's most important organizations. Both IBM and NewCo will have greater ability to focus on their operating and financial models, have more freedom to partner with others and both will align their investments and capital structure to their strategic focus areas. We are on track to complete the separation by the end of 2021.

Environmental Dynamics

On March 11, 2020, the World Health Organization (WHO) declared the novel coronavirus (COVID-19) a global pandemic. This resulted in significant governmental measures being initiated around the globe, including travel bans and border closings, shelter-in-place orders, closures of non-essential businesses and social distancing requirements in efforts to slow down and control the spread of the virus.

Throughout 2020, the health of IBM employees, our clients, business partners and community continued to be our primary focus. We are actively engaged to ensure our plans and response activities continue to be aligned with recommendations of the WHO, the U.S. Centers for Disease Control and Prevention, and governmental regulations.

IBM continues to be well positioned to support our clients through this crisis. The pandemic has driven companies to accelerate their digital transformations, resulting in the removal of traditional barriers to progress. The reliance on technology, particularly hybrid cloud and AI technologies that give clients the scalability and flexibility needed to adjust to the rapid market changes, has become more acute. We are helping to advise, build, move and manage our clients' journey to the cloud. We are also working with our clients to apply AI, automation and other technologies to make their workflows more intelligent and responsive. As our clients are intensifying their focus on their most important asset, their people, we are partnering with clients to help them enhance employee engagement and productivity, reskill the workforce faster and reimagine ways of working.

The COVID-19 pandemic and broader macroeconomic uncertainty has placed every company in uncharted waters. In this environment, the underlying fundamentals of our business continue to remain sound:

- Our diversification and mix by industry, geography and client segment provides some stability during these times;
- IBM has always focused on the enterprise space, and within that our business is more concentrated in large enterprises, which in total have been relatively more stable throughout the pandemic;
- From an industry perspective, the majority of our revenue comes from clients in financial services, telecom, and the public sector – industries that run the world's most critical processes;
- From a geographic perspective, we are continuing to see markets experience different impacts from the pandemic over time. Our global footprint provides some natural hedge;

- Approximately 60 percent of our annual revenue is in recurring revenue streams;
- Our balance sheet remains strong with ample liquidity and access to capital.

All of this provides some level of stability, not only in our revenue, but also in profit and cash, as we continue to manage through these challenging times. However, in this macroeconomic environment, clients balanced near-term needs and opportunities for transformation. Their near-term priorities were focused on operational stability, flexibility and cash preservation, and as such, in 2020, we experienced some disruptions in transactional performance, shorter duration software transactions and delays in some services projects.

At the same time, this environment has only reinforced the need for clients to modernize their businesses to succeed in this new normal, with hybrid cloud and AI at the core of their digital transformations. While the current environment poses certain short-term challenges, it also presents long-term opportunities that IBM will seize as our open hybrid platform and AI-driven model delivers greater innovation, higher productivity and more strategic optionality to our clients.

Financial Performance Summary

In 2020, we reported \$73.6 billion in revenue and income from continuing operations of \$5.5 billion, which included a \$2.0 billion pre-tax charge for structural actions (primarily workforce rebalancing) in the fourth quarter to simplify and optimize our operating model. Operating (non-GAAP) earnings in 2020 were \$7.8 billion, which also included the charge for workforce rebalancing. Diluted earnings per share from continuing operations was \$6.13 as reported and \$8.67 on an operating (non-GAAP) basis. We also generated \$18.2 billion in cash from operations, \$10.8 billion in free cash flow and delivered shareholder returns of \$5.8 billion in dividends. With the unprecedented COVID-19 pandemic and macroeconomic uncertainty beginning in March 2020, client priorities shifted to maintaining operational stability, flexibility and preservation of cash. While there was continued demand for offerings that support their digital transformation, clients moved to shorter term duration engagements and prioritized operational expenditures over capital expenditures, which impacted the company's performance in 2020. However, our results reflect strong performance in hybrid cloud led by Red Hat, gross margin expansion and solid cash generation. We also continued to strengthen our position as a hybrid cloud platform and AI company through strategic organic investments and acquisitions.

Total consolidated revenue decreased 4.6 percent as reported and 4.7 percent adjusted for currency compared to the prior year. Excluding divested businesses and adjusted for currency, revenue decreased 3.5 percent. Cloud & Cognitive Software increased 2.1 percent as reported and 2 percent adjusted for currency, with strong performance from Red Hat, offset by declines in transactional performance in other areas of the portfolio. Within Cloud & Cognitive Software, Cloud & Data Platforms, which includes Red Hat, grew 20.9 percent as reported (20 percent adjusted for currency), while Cognitive Applications decreased 3.0 percent as reported (3 percent adjusted for currency), and Transaction Processing Platforms declined 16.8 percent as reported (17 percent adjusted for currency) reflecting the impacts of the macroeconomic uncertainty, with purchase deferrals and clients opting for shorter duration contracts. Global Business Services decreased 3.8 percent as reported and 4 percent adjusted for currency with declines across all lines of business due to project delays and less discretionary spending by clients. Global Technology Services decreased 5.7 percent as reported and 5 percent adjusted for currency with declines in Infrastructure & Cloud Services and Technology Support Services driven by lower business volumes primarily with clients in industries more impacted by the macroeconomic environment. Systems decreased 8.2 percent year to year as reported and 9 percent adjusted for currency due to product cycle dynamics. Across the segments, total IBM cloud revenue of \$25.1 billion in 2020 grew 19 percent as reported (18 percent adjusted for currency) and 20 percent excluding divested businesses and adjusted for currency.

From a geographic perspective, Americas revenue declined 6.0 percent year to year as reported (4 percent excluding divested businesses and adjusted for currency). Europe/Middle East/Africa (EMEA) decreased 3.3 percent (4 percent excluding divested businesses and adjusted for currency). Asia Pacific declined 3.5 percent (4 percent excluding divested businesses and adjusted for currency).

The consolidated gross margin of 48.3 percent increased 1.0 points year to year, and the operating (non-GAAP) gross margin of 49.3 percent increased 1.3 points versus the prior year, reflecting portfolio mix with strong software contribution and our focus on productivity.

Total expense and other (income) increased 17.5 percent in 2020 compared to the prior year. The year-to-year performance was driven by higher charges for workforce rebalancing, a full year of Red Hat operational spending in 2020 compared to six months in 2019, lower gains from divestitures and higher non-operating retirement-related costs, partially offset by lower spending including reductions in travel and other expenses associated with COVID-19 restrictions. Total operating (non-GAAP) expense and other (income) increased 16.8 percent year to year, driven primarily by the same factors excluding the non-operating retirement-related costs.

Pre-tax income from continuing operations of \$4.6 billion decreased 54.4 percent and the pre-tax margin was 6.3 percent, a decrease of 6.9 points versus 2019, primarily due to higher workforce rebalancing charges in 2020, lower gains from divestitures and higher retirement-related costs in the current year. The continuing operations effective tax rate for 2020 was (18.6) percent compared to 7.2

Management Discussion

International Business Machines Corporation and Subsidiary Companies

percent in 2019. The benefit from income taxes in 2020 was primarily due to the tax impacts of an intra-entity sale of certain of the company's intellectual property and related impacts in the first quarter, which resulted in a net tax benefit of \$0.9 billion. Net income from continuing operations of \$5.5 billion decreased 41.7 percent and the net income from continuing operations margin was 7.5 percent, down 4.8 points year to year, primarily due to the fourth-quarter workforce rebalancing charge. Operating (non-GAAP) pre-tax income from continuing operations of \$7.7 billion decreased 38.7 percent year to year and the operating (non-GAAP) pre-tax margin from continuing operations decreased 5.8 points to 10.4 percent, reflecting the higher workforce rebalancing charges and lower gains from divestitures in the current year. The operating (non-GAAP) effective tax rate for 2020 was (1.5) percent compared to 8.5 percent in 2019. The current year operating (non-GAAP) benefit from income taxes was primarily driven by the net tax benefit from an intra-entity IP sale in the first quarter. Operating (non-GAAP) income from continuing operations of \$7.8 billion decreased 32.0 percent and the operating (non-GAAP) income margin from continuing operations of 10.6 percent was down 4.3 points year to year.

Diluted earnings per share from continuing operations of \$6.13 in 2020 decreased 42.0 percent and operating (non-GAAP) diluted earnings per share of \$8.67 decreased 32.3 percent versus 2019, both including a (\$1.84) impact from the fourth-quarter 2020 structural actions.

During 2020, we continued to take actions to further enhance our balance sheet and liquidity position. At December 31, 2020, the balance sheet remained strong with flexibility to support and invest in the business, with a strong cash position and ample credit available during these uncertain times. Cash and cash equivalents, restricted cash and marketable securities at year end were \$14.3 billion, an increase of \$5.3 billion from December 31, 2019. Throughout 2020, we took mitigation actions to preserve liquidity as well as strategic actions to optimize our capital structure, for example, we re-focused our Global Financing portfolio reducing our external debt needs. We have reduced total debt by \$1.4 billion from prior year end and \$11.5 billion since the second quarter of 2019 (immediately preceding the Red Hat transaction).

Total assets increased \$3.8 billion (increased \$0.9 billion adjusted for currency) from December 31, 2019 primarily driven by:

- An increase of \$5.3 billion in cash and cash equivalents, restricted cash and marketable securities;
- An increase in deferred taxes of \$4.1 billion primarily due to the intra-entity sale of IP in the first quarter; and
- An increase in prepaid pension assets of \$0.7 billion driven by higher returns on plan assets and plan remeasurements; partially offset by
- A decline in receivables of \$6.5 billion mainly due to sales of financing receivables, continued focus on collections, including collection of divestiture-related receivables and a decline in revenue.

Total liabilities increased \$4.0 billion (increased \$0.1 billion adjusted for currency) from December 31, 2019 driven by:

- An increase in other accrued expenses and liabilities of \$2.5 billion primarily due to the workforce rebalancing charge in the fourth quarter of 2020;
- An increase in deferred income of \$1.3 billion; and
- An increase in retirement and nonpension postretirement benefit obligations of \$1.1 billion mainly driven by plan remeasurements; partially offset by
- A decrease in total debt of \$1.4 billion.

Total equity of \$20.7 billion decreased \$0.3 billion from December 31, 2019 as a result of:

- Dividends paid of \$5.8 billion; partially offset by
- Net income of \$5.6 billion.

Cash provided by operating activities was \$18.2 billion in 2020, an increase of \$3.4 billion compared to 2019, driven primarily by an increase in cash provided by receivables (\$4.8 billion); partially offset by performance-related declines within net income.

Net cash used in investing activities of \$3.0 billion decreased \$23.9 billion compared to the prior year, primarily driven by a decrease in net cash used for acquisitions (\$32.3 billion) due to the acquisition of Red Hat in the prior year, partially offset by a decrease in cash provided by net non-operating finance receivables (\$6.2 billion), primarily driven by the wind down of the OEM IT commercial financing operations.

Financing activities were a net use of cash of \$9.7 billion in 2020 compared to a net source of cash of \$9.0 billion in 2019. The year-to-year change of \$18.8 billion was driven by a decrease in net cash provided from debt transactions (\$20.0 billion) primarily driven by a higher level of net additions in the prior year to fund the Red Hat acquisition and a decrease in cash used for gross common stock repurchases (\$1.4 billion).

DESCRIPTION OF BUSINESS

Please refer to IBM's Annual Report on Form 10-K filed with the SEC on February 23, 2021, for Item 1A. entitled "Risk Factors."

We create value for clients by providing integrated solutions and products that leverage: data, information technology, deep expertise in industries and business processes, with trust and security and a broad ecosystem of partners and alliances. Our hybrid cloud platform and AI technology and services capabilities support clients' digital transformations and help them engage with their customers and employees in new ways. These solutions draw from an industry-leading portfolio of consulting and IT implementation services, cloud, digital and cognitive offerings, and enterprise systems and software which are all bolstered by one of the world's leading research organizations.

IBM Strategy

As technology has increasingly become a key engine of business success, enterprises around the world are prioritizing digital transformation. The pressing need to adapt to evolving market requirements and adopt new business models that improve customer experience and streamline business performance has accelerated the urgency of this transformation.

To date, only 25 percent of enterprise workloads have made it onto a public cloud—mostly limited to greenfield cloud applications or ones that are easy to "lift and shift." The remaining 75 percent have not moved, as enterprises wrestle with how to handle the mission-critical workloads and data that require heightened security, particularly for highly regulated industries with complex, often cross-border, compliance needs.

Hybrid cloud and AI are the only way to deliver the digital transformation businesses are looking for across all their processes, applications and data. Together, they have a multiplier effect on the speed and breadth of transformation. Only a fraction of enterprise data is being leveraged for business insights, in part because it is spread across public clouds, datacenters and increasingly, edge computing. The emergence of edge computing across many industries will only expand the kinds of hybrid environments our clients use.

A hybrid cloud approach bridges the silos within this existing enterprise infrastructure, maintaining security for mission-critical workloads while enabling the data collection and analysis that accelerates development and deployment of AI at scale. AI unlocks the value of enterprise data, using it to reinvent processes, predict outcomes and transform businesses.

The pressing need to pivot to remote work and reinvent their business models during the pandemic accelerated the urgency of this transformation for many enterprises. Companies are focused more than ever on moving workloads to the cloud.

IBM's Commitment to Hybrid Cloud and AI

That makes hybrid cloud and AI an enormous opportunity for IBM. Hybrid cloud alone represents a \$1 trillion market.

We are targeting this market because we recognize the value it brings to our clients. Through deep engagement with a wide breadth of clients, we know that a hybrid cloud approach on average creates 2.5 times more value for enterprises than a public cloud-alone strategy, and IBM leads in delivering better return on investment (ROI) through hybrid cloud. This higher ROI comes from enhanced business acceleration, developer productivity, infrastructure cost efficiency and regulatory compliance and security.

We have built a hybrid cloud platform, based on open technologies, that allows clients to realize their digital and AI transformations across the applications, data and environments in which they operate. Watson is IBM's industry leading AI for business, a portfolio of enterprise-ready pre-built applications and tools designed to reduce the costs and hurdles of AI adoption through industry-leading natural language processing, automation and trust in our responsible use of AI. Building on our hybrid cloud platform, our software collects and analyzes data from across our clients' enterprises, training our AI to provide insights into their business processes. These insights enable intelligent workflows, reinventing the way businesses operate and driving improved business outcomes that accelerate our clients' adoption of AI.

Trust is a key differentiator for IBM's AI, and of paramount importance to our clients. In a recent survey, 76 percent of AI professionals said being able to trust their AI's output is fair, safe and reliable is "critically" or "very" important to their business. That is why we believe that AI must be transparent and explainable, and that data and insights belong to the creator. In keeping with this belief, we have designed hybrid cloud and AI solutions that give our clients sole control of their encryption keys. Our homomorphic encryption takes data privacy and security one step further, allowing data to be processed without decryption.

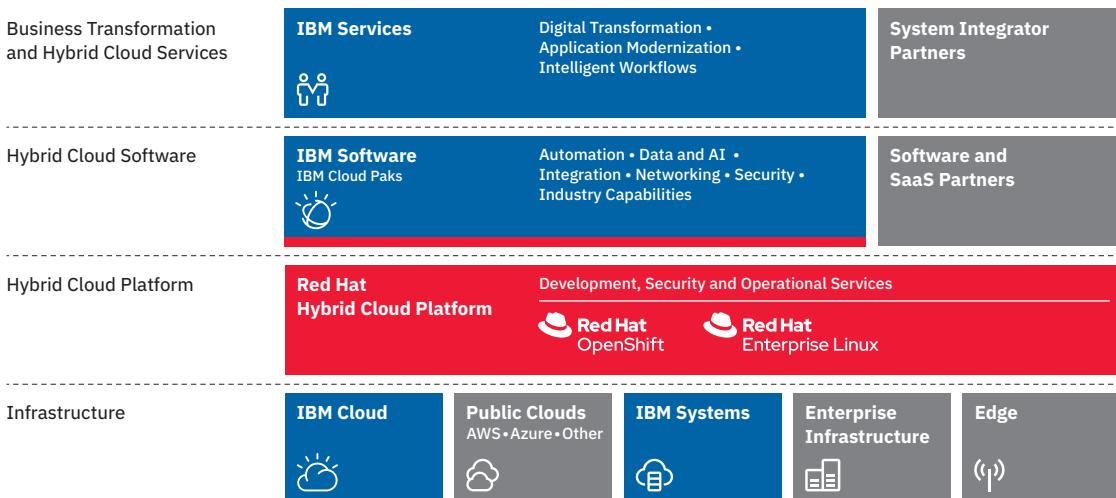
We have pivoted all of IBM to deliver on this hybrid cloud and AI value for our clients. We believe we have the portfolio that will support IBM's success as well our clients' and ecosystem partners' success. It includes the services capabilities that drive consumption of our technology and enable digital transformation, our software portfolio that can achieve transformational business outcomes through AI and automation, and our systems and infrastructure that can run this platform for mission-critical applications.

IBM's Technology Stack and Platform Approach

IBM offers clients a full technology stack that meets them wherever they are on their journey, from their existing IT infrastructure to our hybrid cloud platform to our cloud-native software to our services professionals who can advise on custom solutions that create the most value for our clients. Our ecosystem partners enhance the client experience and innovation that can be derived from IBM technology.

Our hybrid cloud approach is platform-centric, with Linux, containers and Kubernetes as the architectural foundation. Platforms provide compelling economics: every \$1 of platform spend on average drives \$3 to \$5 of software revenue, \$6 to \$8 of services and \$1 to \$2 of enterprise infrastructure. The multiplier effect of our technology stack creates more value for IBM and our growing ecosystem of partners.

IBM Hybrid Cloud and AI Solutions



Hybrid cloud platforms and software comprise a \$450 billion market opportunity and are the key to any hybrid cloud architecture.

Red Hat OpenShift is the leading hybrid cloud software platform, and the only one that is fully integrated and open source, with built-in development, security and operations features. It takes advantage of an ecosystem of millions of developers to accelerate innovation. Leveraging the power of Kubernetes and containers, OpenShift creates the foundation that allows our clients to manage siloed, multi-cloud, edge and legacy infrastructure as a single platform. These capabilities are a clear differentiator, enabling our clients to “write once, deploy anywhere” for their hybrid architecture. We are seeing strong momentum, with more than 2,800 clients using our hybrid cloud platform at the end of 2020.

Cloud Paks are IBM's containerized, modernized software built to extend the value of OpenShift. They are key to realizing value through digital transformation in four important ways. They help our clients to modernize applications to take advantage of the hybrid platform, automate processes for speed and efficiency, use the power of AI for data driven decision-making and prediction, and secure the entire platform from the data center to the edge. Cloud Paks provide a powerful addition to IBM's traditional middleware. Our traditional middleware is an industry standard that creates tremendous value for our clients through connectivity on all kinds of systems and gives IBM a leadership position in the market.

IBM's software enables solutions that can transform businesses. It is the software that solves industry or business-specific problems such as supply chain or asset management and uses our breakthrough natural language processing and automation capabilities as well as other technologies including analytics, encryption, blockchain and machine learning. IBM Research continues to advance these technologies, for example integrating neural and symbolic techniques to build AI that can perform more complex tasks by understanding and reasoning more like humans.

Business transformation and hybrid cloud services provide a \$300 billion market opportunity. Key to how our technology is delivered, IBM Global Business Services (GBS) is a leading design, consulting and systems integration organization, with more OpenShift certified experts than any of the competition. They are the leaders in helping enterprises move workloads onto OpenShift – the top hybrid cloud platform – and have built or migrated hybrid cloud applications for more than 500 clients.

Our consultants have the trust of clients around the world, many having worked in the same industries as the clients they serve. Our services professionals bring that deep knowledge to helping clients develop their hybrid cloud infrastructure, applying the full range of IBM's and its partners' capabilities to build intelligent workflows enabled by our technology stack. GBS works with our ecosystem partners and IBM developers to create the custom solutions that realize digital transformation for our clients in any country and any industry.

Infrastructure, a \$230 billion market, is at the base of our stack, incorporating the public and private cloud technology that integrates with our hybrid cloud approach.

Our clients are using a combination of public and private cloud infrastructure to keep their mission-critical data and workloads secure. IBM provides both in a way that can easily be slotted into our hybrid cloud platform and AI. IBM public cloud is the technology behind our clouds for highly regulated industries, such as IBM Cloud for Financial Services and IBM Cloud for Telecommunications, with industry-specific security and compliance features. To help clients integrate their private clouds into a hybrid cloud strategy using IBM IT infrastructure, we have made investments in our IBM Z, LinuxONE, Power and Storage offerings to support our hybrid cloud platform and software.

Investing in the Future

Investment in future technologies is an important part of our strategy. Hybrid cloud and AI are the technologies of today, but IBM's investment in quantum computing positions us to win in the next era of computing. We were the first technology company to publish plans to produce a quantum processor with more than 1,000 qubits by 2023 giving us a significant first mover advantage.

We already have more than 285,000 registered users in our market-leading quantum network. The 130+ members of the IBM Q Network – including universities, banks, auto companies, telcos and a wide array of companies from other industries – have run over 500 billion quantum circuits.

IBM Research continues to develop new technologies and improve on our existing ones, ensuring that IBM stays in the vanguard of technological innovation that helps enterprises achieve their digital transformations.

Aligning Structure to Strategy

As we focus our strategy on hybrid cloud and AI, IBM is making it easier for our clients to consume our technology and gain better access to our deep technical expertise.

We are adjusting our portfolio to align to our strategy. The announced spin-off of our managed infrastructure services business will better align IBM to our hybrid cloud platform and AI strategy and create clearer focus for both companies. With over 4,600 technology-intensive, highly regulated clients in 115 countries and more than twice the scale of its nearest competitor, NewCo will pursue a \$500 billion market opportunity in managed infrastructure services.

At the same time, we continue to invest organically and inorganically. The acquisitions we announced in 2020 extend our hybrid cloud and AI technology and services capabilities to provide value for our clients.

We are changing the way we go to market to simplify our client segmentation and better align IBM's salesforce with our clients so that we more consistently deliver the value of our platform. We will demonstrate the value of our hybrid cloud and AI approach through technical and experiential selling. IBM Garage, a market-leading immersive experience for co-creating solutions, helps our clients and partners grasp the value of the platform by seeing it in practice.

We are expanding our ecosystem by adding hundreds of new global systems integrators, independent software vendors and major third-party software partners. We are investing \$1 billion in our ecosystem to ensure that our partners have the resources they need to develop software and build their businesses on our platform expanding IBM's go-to-market reach.

When our partners succeed, our clients succeed, and that translates to success for IBM. Our hybrid cloud and AI strategy is designed for our mutual success. It is the engine to propel growth across our entire business, enhanced by a revised sales strategy, ecosystem priority and go-to-market approach. The focus of 2021 will be to accelerate that engine.

Business Segments and Capabilities

Our hybrid cloud and AI strategy is realized through our operations and consist of five business segments: Cloud & Cognitive Software, Global Business Services, Global Technology Services, Systems and Global Financing.

Management Discussion

International Business Machines Corporation and Subsidiary Companies

Cloud & Cognitive Software

Cloud & Cognitive Software brings together IBM's software platforms and solutions, enabling us to help clients predict, automate, secure and modernize, on a secure hybrid cloud. It includes all software, except operating system software reported in the Systems segment.

Cloud & Cognitive Software comprises three business areas—Cognitive Applications, Cloud & Data Platforms and Transaction Processing Platforms, which have the following capabilities:

Cognitive Applications: includes software that address vertical and domain-specific solutions, increasingly infused with AI, enabled by IBM's Watson technology. Application areas such as health, financial services, supply chain, asset management, weather and security software and services are among the offerings.

Cloud & Data Platforms: includes the company's distributed middleware and data platform software, including Red Hat, which enables the operation of clients' hybrid cloud environments, whether on-premise or in public and private clouds. Included are IBM Cloud Paks, which are pre-integrated enterprise grade solutions built on Red Hat OpenShift and a combination of containerized IBM and Red Hat software and services. It also includes product areas such as WebSphere distributed, analytics platform software such as DB2 distributed, information integration, and enterprise content management, as well as blockchain and AI/Watson platforms.

As clients increasingly move more of their mission-critical workloads to the cloud, their multi-cloud environments will be based on a foundation of Linux, with Kubernetes open source software to deploy, manage and scale container-based applications. Red Hat, which provides the leading Linux operating system—Red Hat Enterprise Linux (RHEL)—and the leading hybrid cloud platform—Red Hat OpenShift—is at the center of this transformational shift among clients.

Transaction Processing Platforms: the software that supports client mission-critical on-premise workloads in industries such as banking, airlines and retail. This includes transaction processing software such as Customer Information Control System and storage software, as well as the analytics and integration software running on IBM operating systems (e.g., DB2 and WebSphere running on z/OS).

Global Business Services

Global Business Services provides clients with consulting, business process and application management services, focused on implementing AI-enabled intelligent workflows and modernizing application suites, optimized for hybrid cloud environments. These professional services deliver value and innovation to clients through solutions which leverage industry, technology and business strategy and process expertise. GBS is the digital reinvention partner for IBM clients, combining industry knowledge, functional expertise, and applications with the power of business design and cognitive and cloud technologies. The full portfolio of GBS services is backed by its globally integrated delivery network and integration with technologies, solutions and services across IBM.

GBS assists clients in their digital transformations, helping them build business platform strategies and experiences, transform processes to intelligent workflows using AI and other exponential technologies, and build hybrid, open cloud infrastructures.

Global Business Services comprises three business areas—Consulting, Application Management and Global Process Services, which have the following capabilities:

Consulting: provides business consulting services focused on bringing to market solutions that help clients shape their digital blueprints and customer experiences, modernize their applications, define their cognitive operating models, unlock the potential in all data to improve decision-making, set their next-generation talent strategies and create new technology architectures in a cloud-centric world.

Application Management: delivers system integration, application management, maintenance and support services for packaged software, as well as custom and traditional applications. Value is delivered through advanced capabilities in areas such as security and privacy, application testing and modernization, cloud application migration and automation.

Global Process Services (GPS): delivers finance, procurement, talent and engagement, and industry-specific business process outsourcing services. These services deliver improved business results to clients through a consult-to-operate model which includes the strategic change and/or operation of the client's processes, applications and infrastructure. GBS is redefining process services for both growth and efficiency through the application of the power of cognitive technologies like Watson, as well as the IoT, blockchain and deep analytics.

Global Technology Services

Global Technology Services provides comprehensive IT infrastructure and platform services that create business value for clients. Clients gain access to leading-edge capabilities and realize high-quality performance, greater flexibility and economic value. GTS delivers these outcomes through insights drawn from IBM's decades of experience across thousands of engagements, the skills of practitioners, advanced technologies, applied innovation from IBM Research and global scale.

Global Technology Services comprises two business areas—Infrastructure & Cloud Services and Technology Support Services, which have the following capabilities:

Infrastructure & Cloud Services: delivers a portfolio of project, managed, outsourcing and cloud-delivered services focused on clients' enterprise IT infrastructure environments with improved quality, flexibility and economic value. The portfolio consists of Infrastructure Services and IBM Cloud.

Infrastructure Services modernizes and manages IT environments to accelerate clients' digital transformations. It provides a comprehensive set of services and solutions that include resiliency, security, and network capabilities. These solutions embed unique insights drawn from depth of expertise and scale to enable high performance of mission-critical systems and services. The portfolio is built leveraging platforms, such as the MultiCloud Management Platform and the IBM Services Platform with Watson, which augment human intelligence with cognitive technologies to address complex client environments. This portfolio is delivered by skilled and experienced practitioners to ensure secure, resilient and reliable client environments. On October 8, 2020, IBM announced our plan to separate the managed infrastructure services unit into a new public company. We are on track to complete the separation by the end of 2021.

The IBM Cloud infrastructure layer is built on an open architecture and specifically designed for clients to run mission-critical workloads with leading edge security capabilities including confidential computing and keep your own keys to ensure our clients data is their data. It also includes industry-specific public clouds with built-in controls for highly regulated industries such as financial services, telecommunications, government and healthcare. IBM Cloud powered by deep AI capabilities across the hybrid cloud platform helps our clients extract insights from their data from multiple sources, all within a secure and open architecture. Built on enterprise grade hardware, it also provides storage, network functionality, and a full range of compute options such as virtual machines, containers, bare metal, and serverless, as well as virtualization for enterprise deployments.

Technology Support Services: delivers comprehensive support services to maintain and improve the availability of clients' IT infrastructures. These offerings include maintenance for IBM products and other technology platforms, as well as open source and cross-vendor software and solution support, drawing on innovative technologies and leveraging IBM Services Platform with Watson capabilities.

Systems

Systems provides clients with innovative infrastructure platforms to help meet the new requirements of hybrid multi-cloud and enterprise AI workloads. IBM Systems also designs advanced semiconductor and systems technology in collaboration with IBM Research, primarily for use in our systems.

Systems comprises Systems Hardware and Systems Operating Software, which have the following capabilities:

Systems Hardware: includes IBM's servers and Storage Systems.

Servers: a range of high-performance systems designed to address computing capacity, security and performance needs of businesses, hyperscale cloud service providers and scientific computing organizations. The portfolio includes IBM Z and LinuxONE, trusted enterprise platforms for integrating data, transactions and insight; and Power Systems, a system designed from the ground up for big data and enterprise AI, optimized for hybrid cloud and Linux.

Storage Systems: data storage products and solutions that allow clients to retain and manage rapidly growing, complex volumes of digital information and to fuel data-centric cognitive applications. These solutions address critical client requirements for information retention and archiving, security, compliance and storage optimization, including data deduplication, availability and virtualization. The portfolio consists of a broad range of flash storage, disk and tape storage solutions.

Operating Systems Software: IBM Z operating system environments include z/OS, a security-rich, high-performance enterprise operating system, as well as Linux. Power Systems offers a choice of AIX, IBM i or Linux operating systems that leverage POWER architecture to deliver secure, reliable and high performing enterprise-class workloads across a breadth of server offerings.

Global Financing

Global Financing encompasses two primary businesses: financing, primarily conducted through IBM Credit LLC (IBM Credit), and remanufacturing and remarketing. IBM Credit, a wholly owned subsidiary of IBM, facilitates IBM clients' acquisition of information technology systems, software and services through its financing solutions. The financing arrangements are predominantly for products or services that are critical to the end users' business operations and support IBM's hybrid cloud platform and AI strategy. Global Financing conducts a comprehensive credit evaluation of its clients prior to extending financing. As a captive financier, Global Financing has the benefit of both deep knowledge of its client base and a clear insight into the products and services financed. These factors allow the business to effectively manage two of the major risks associated with financing, credit and residual value, while generating

Management Discussion

International Business Machines Corporation and Subsidiary Companies

strong returns on equity. Global Financing also maintains a long-term partnership with IBM's clients through various stages of the IT asset life cycle—from initial purchase and technology upgrades to asset disposition decisions.

Global Financing comprises the following business areas:

Client Financing: lease, installment payment plan and loan financing to end users and internal clients for terms up to seven years. Assets financed are primarily new and used IT hardware, software and services where we have expertise. Internal financing is predominantly in support of Global Technology Services' long-term client service contracts. All internal financing arrangements are at arm's-length rates and are based upon market conditions.

Commercial Financing: short-term working capital financing to suppliers, distributors and resellers primarily of IBM products. In 2019, we wound down the Original Equipment Manufacturer (OEM) IT portion of our commercial financing operations. In the fourth-quarter 2020, Global Financing expanded its financial flexibility by entering into an agreement with a third-party investor to sell up to \$3 billion of its IBM commercial financing receivables, at any one time, on a revolving basis over the agreement's three-year term.

Remanufacturing and Remarketing: assets include used equipment returned from lease transactions, or used and surplus equipment acquired internally or externally. These assets may be refurbished or upgraded, and sold or leased to new or existing clients both externally and internally. Externally remarketed equipment revenue represents sales or leases to clients and resellers. Internally remarketed equipment revenue primarily represents used equipment that is sold internally to Global Technology Services. Systems may also sell the equipment that it purchases from Global Financing to external clients.

IBM Worldwide Organizations

The following worldwide organizations play key roles in IBM's delivery of value to its clients:

- Global Markets
- Research, Development and Intellectual Property

Global Markets

IBM operates in more than 175 countries with a broad distribution of revenue. To manage this global footprint, Global Markets leads our dedicated country-based IBM operations in order to serve clients, develop markets, and ultimately, ensure IBM is led through a client lens.

These teams serve our clients locally, complemented by digital capabilities, global talent and resources, and an extensive partner ecosystem. These country teams have client leaders, IBM consultants, solution specialists, delivery professionals and business partners all working on behalf of clients. Their mission is to provide insights and innovation and co-create with clients to help them address their most pressing business challenges and opportunities.

In this way, we serve as a trusted partner to clients, establishing and maintaining relationships that deliver long-term value based on industry expertise, innovative technologies and an ability to deliver mission critical capabilities to an enterprise at scale.

Research, Development and Intellectual Property

Our research and development (R&D) operations differentiate us from our competitors. In 2020, we invested approximately 9 percent of total revenue for R&D, focusing on high-growth, high-value opportunities. IBM Research works with clients and our business units through global labs on near-and mid-term innovations. It delivers many new technologies to our portfolio every year and helps clients address their most difficult challenges. IBM Research scientists are conducting pioneering work in hybrid cloud, AI, quantum computing, security, systems and more—applying these technologies across industries including financial services, healthcare, automotive, pharmaceuticals and energy.

We actively continue to seek IP protection for our innovations. Some of our technological breakthroughs are used exclusively in IBM products, while others are licensed and may be used in IBM products and/or the products of the licensee. As part of our business model, we license certain of our IP assets, which constitute high-value technology, but may be applicable in more mature markets. While our various proprietary IP rights are important to our success, we believe our business as a whole is not materially dependent on any particular patent or license, or any particular group of patents or licenses. In addition, IBM owns or is licensed under a number of third-party patents, which vary in duration, relating to its products.

Human Capital
Employees and Related Workforce

(In thousands)

For the year ended December 31:	2020
IBM/wholly owned subsidiaries	345.9
Less-than-wholly owned subsidiaries	10.5
Complementary*	18.9

* The complementary workforce is an approximation of equivalent full-time employees hired under temporary, part-time and limited-term employment arrangements to meet specific business needs in a flexible and cost-effective manner.

As a globally integrated enterprise, IBM operates in more than 175 countries and is continuing to shift our business to the higher value segments of enterprise IT. Our global workforce is highly skilled, reflective of the work we do for our clients' digital transformations and in support of their mission-critical operations. Our global workforce includes developers, consultants, client delivery and services specialists, research scientists and others. Our employees are among the world's leading experts in cloud, AI, quantum computing, cybersecurity and industry-specific solutions.

Talent and Culture

IBM attracts, develops, engages and retains talent in a dynamic and competitive environment. IBM offers a compelling employee value proposition: we develop and deliver innovative technologies including hybrid cloud, AI, and quantum, for clients whose businesses the world relies on. IBM is continuously transforming and developing its talent, both through learning and hiring. In 2020, more than 30,000 people from 75 countries joined IBM. Employees are encouraged and enabled to learn and grow their careers, with employees completing more than 80 hours of learning on average in 2020. Our digital learning platform, Your Learning, uses Watson AI to generate personalized recommendations and includes peer-to-peer collaboration and internal social sharing. Hundreds of thousands of employees globally participate in our annual engagement survey, which measures elements such as workplace experience, inclusion, pride and propensity to recommend IBM as an employer. Our industry-leading talent practices enabled IBM to improve employee engagement by more than 2 points year to year and retain employees above historical levels. Every manager and leader in IBM has access to their team and organization engagement levels along with actionable data-driven insights.

Diversity and Inclusion

IBM has a long, proud history as a pioneer in diversity and inclusion. A diverse and inclusive workplace leads to greater innovation, agility, performance and engagement, enabling both business growth and societal impact. We ensure employees from diverse backgrounds are engaged, can be their authentic selves, build skills and achieve their greatest potential. With the full support of our Board of Directors, beginning in April 2021 we will disclose annually an overview of our diversity, pay equity and inclusion efforts and programs, including diversity representation data. We are proud of our inclusive culture, with nine out of ten employees responding that they can be their authentic selves at work. Our focus on creating a diverse and inclusive workplace led to increased engagement levels for women, Black and Hispanic employees. We are also focused on meeting or exceeding the diversity of skilled talent in the labor market, for every underrepresented group, and at every level of our company. Women now make up more than 33 percent of our workforce, and we increased representation of women, Black and Hispanic employees in 2020 compared to the prior year. While we have taken significant actions and made progress, we have ongoing work to do. IBM believes in pay equity: we have had an equal pay policy since 1935 and a long-standing practice of maintaining pay equity. To this end, we conduct statistical pay equity analysis that includes all countries with IBM employees. We also empower employees to understand their pay by providing comprehensive education and transparent access to pay statements including a comparison to market pay ranges.

Health, Safety and Well-Being

We have a long-standing commitment to the health, safety and well-being of our employees. Never has this been more important than in 2020 as we faced the COVID-19 pandemic. From early in the course of the outbreak, we supported the health, safety and well-being of our employees by restricting travel, cancelling in-person meetings and events and transitioning nearly 95 percent of our workforce to work from home. We have a robust case management system to manage COVID-19 exposures and a comprehensive playbook on workplace health and safety measures that allow our offices to reopen when conditions improve. Employees are supported with 24/7 access to IBM's world-class Health and Safety team, education, timely updates and forums to ask questions and raise concerns.

Additionally, from the outset of the COVID-19 pandemic, IBM has focused on mental health and supporting our employees for the long run with programs shaped by frequent survey polls and employee input sessions. Such programs include: four weeks additional paid time off for working parents and caregivers facing disruption, robust case management through our Employee Assistance Program to manage COVID-19 exposures and develop comprehensive guidance, training for employees on resilience and for managers on how to identify and address mental health issues and financial counseling offerings tailored to pandemic-related matters.

Management Discussion

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YEAR IN REVIEW**Results of Continuing Operations****Segment Details**

The following is an analysis of the 2020 versus 2019 reportable segment results. The table below presents each reportable segment's external revenue and gross margin results. Segment pre-tax income includes transactions between segments that are intended to reflect an arm's-length transfer price and excludes certain unallocated corporate items.

(\$ in millions)

	2020	2019	Yr.-to-Yr. Percent/ Margin Change	Yr.-to-Yr. Percent Change Adjusted for Currency
For the year ended December 31:				
Revenue				
Cloud & Cognitive Software	\$23,376	\$22,891 *	2.1 %	1.9 %
Gross margin	77.5 %	77.1 %*	0.4 pts.	
Global Business Services	16,162	16,798 *	(3.8)%	(4.1)%
Gross margin	29.7 %	27.7 %*	2.0 pts.	
Global Technology Services	25,812	27,361	(5.7)%	(5.4)%
Gross margin	34.8 %	34.8 %	0.0 pts.	
Systems	6,978	7,604	(8.2)%	(8.7)%
Gross margin	55.9 %	53.1 %	2.8 pts.	
Global Financing	1,123	1,400	(19.8)%	(19.2)%
Gross margin	37.7 %	35.6 %	2.1 pts.	
Other	169	1,092 *	(84.5)%	(84.4)%
Gross margin	NM	12.5 %*	NM	
Total consolidated revenue	\$73,620	\$77,147	(4.6)%**	(4.7)%
Total consolidated gross profit	\$35,575	\$36,488	(2.5)%	
Total consolidated gross margin	48.3 %	47.3 %	1.0 pts.	
Non-operating adjustments				
Amortization of acquired intangible assets	732	534	37.1 %	
Acquisition-related charges	—	13	(100.0)%	
Spin-off-related charges	1	—	NM	
Operating (non-GAAP) gross profit	\$36,308	\$37,035	(2.0)%	
Operating (non-GAAP) gross margin	49.3 %	48.0 %	1.3 pts.	

* Recast to reflect segment changes.

** (3.5) percent excluding divested businesses and adjusted for currency.

NM—Not meaningful

Cloud & Cognitive Software

(\$ in millions)

	2020	2019	Yr.-to-Yr. Percent Change	Yr.-to-Yr. Percent Change Adjusted for Currency
For the year ended December 31:				
Cloud & Cognitive Software external revenue	\$23,376	\$22,891 *	2.1 %	1.9 %
Cloud & Data Platforms	\$11,481 **	\$ 9,499	20.9 %	20.5 %
Cognitive Applications	5,290	5,456 *	(3.0)	(3.2)
Transaction Processing Platforms	6,606	7,936	(16.8)	(17.0)

* Recast to reflect segment changes.

** Red Hat was acquired on July 9, 2019. Results in 2020 include a full year of Red Hat revenue.

Cloud & Cognitive Software revenue of \$23,376 million increased 2.1 percent as reported (2 percent adjusted for currency) in 2020 compared to the prior year. There was strong growth in Cloud & Data Platforms, as reported and at constant currency, driven primarily by Red Hat, as our hybrid cloud and AI solutions are resonating with clients. Both Cognitive Applications and Transaction Processing Platforms revenue decreased year to year as reported and adjusted for currency, driven by declines in transactional software performance as clients delayed longer term commitments in the current environment.

Cloud & Data Platforms revenue of \$11,481 million increased 20.9 percent as reported (20 percent adjusted for currency) compared to the prior year, driven by a full year of Red Hat revenue contribution and Red Hat's strong performance in infrastructure and application development and emerging technologies. Red Hat OpenShift, the leading open source hybrid cloud platform, helped clients modernize mission-critical workloads, build cloud native applications, and deploy and manage data and applications across various clouds within an environment that is open, flexible and secure. We now have more than 2,800 clients using our hybrid cloud platform, which is an increase of more than 1,000 new enterprise clients since the acquisition of Red Hat in July 2019.

Management Discussion

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Cognitive Applications revenue of \$5,290 million decreased 3.0 percent as reported (3 percent adjusted for currency) compared to the prior year. We had good client adoption in security solutions such as Cloud Pak for Security and growth in security services as clients focused on their secure digital transformations. This growth was offset by declines in solutions used by some of the more impacted industries in the current macroeconomic environment where clients deferred transformational investments to focus on their core operations.

Transaction Processing Platforms revenue of \$6,606 million decreased 16.8 percent as reported (17 percent adjusted for currency) in 2020 compared to the prior year. With the macroeconomic environment due to the COVID-19 pandemic, clients focused on near-term priorities resulting in purchase deferrals, which impacted our transactional software performance in 2020. However, our subscription and support revenue grew in 2020 compared to the prior year.

Within Cloud & Cognitive Software, cloud revenue of \$7.0 billion grew 67 percent as reported and adjusted for currency year to year.

(\$ in millions)

	2020	2019 *	Yr.-to-Yr. Percent/ Margin Change
For the year ended December 31:			
Cloud & Cognitive Software			
External gross profit	\$18,118	\$17,650	2.7 %
External gross profit margin	77.5 %	77.1 %	0.4 pts.
Pre-tax income	\$ 6,362	\$ 7,811	(18.5)%
Pre-tax margin	24.0 %	30.4 %	(6.4)pts.

* Recast to reflect segment changes.

The Cloud & Cognitive Software gross profit margin increased 0.4 points to 77.5 percent in 2020 compared to the prior year. The gross profit margin expansion was driven primarily by the full-year contribution from Red Hat and year-to-year improvement in services margins as we continued to focus on shifting to higher value services, such as Software-as-a-Service and security services, and driving AI-powered automation across the portfolio. Pre-tax income of \$6,362 million decreased 18.5 percent compared to the prior year with a pre-tax margin decline of 6.4 points to 24.0 percent. The decline in pre-tax income and margin was driven primarily by the revenue decline in Transaction Processing Platforms, our continued investment in our strategic areas of cloud and AI, and the impact of higher workforce rebalancing charges year to year which had 2.6 points of impact on the pre-tax margin.

Global Business Services

(\$ in millions)

	2020	2019	Yr.-to-Yr. Percent Change	Percent Change Adjusted for Currency
For the year ended December 31:				
Global Business Services external revenue	\$16,162	\$16,798 *	(3.8)%	(4.1)%
Consulting	\$ 8,083	\$ 8,157 *	(0.9)%	(1.3)%
Application Management	7,133	7,646	(6.7)	(6.9)
Global Process Services	945	995	(5.0)	(4.7)

* Recast to reflect segment changes.

GBS revenue of \$16,162 million decreased 3.8 percent as reported (4 percent adjusted for currency) in 2020 compared to the prior year. As the global pandemic intensified through the year, we aligned our offerings to help clients focus on engaging customers virtually, modernizing and migrating applications to the cloud, empowering a remote workforce, and focusing on cybersecurity and IT resiliency. In 2020, GBS accelerated the number of engagements using Red Hat technology and continued to drive client adoption of Red Hat OpenShift and IBM Cloud Paks.

Consulting revenue of \$8,083 million decreased 0.9 percent as reported (1 percent adjusted for currency) compared to the prior year. Given the macroeconomic environment during 2020, clients shifted priorities, which led to project delays and less demand for more discretionary offerings. As we pivoted our offerings and capabilities to help address clients' priorities around application modernization, our GBS Consulting total signings grew for the year at a mid-single digit rate compared to 2019.

Application Management revenue of \$7,133 million decreased 6.7 percent as reported (7 percent adjusted for currency) driven primarily by the decline in our more traditional on-premise application management services, partially offset by growth in higher value offerings to develop, modernize and manage cloud applications. Our incumbency in Application Management creates the opportunity and trust to be the partner of choice for our clients' digital journeys, and helps drive adoption of our hybrid cloud platform.

Global Process Services revenue of \$945 million decreased 5.0 percent as reported (5 percent adjusted for currency), reflecting the impact of the ongoing macroeconomic environment on volume-based services. GPS returned to growth in the fourth quarter of 2020,

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as we continued to deliver efficiency and flexibility to our clients' processes by infusing innovative technology and redesigning intelligent workflows.

Within GBS, cloud revenue of \$5.8 billion grew 11 percent as reported and adjusted for currency. GBS continued to drive the adoption of our hybrid cloud platform to help our clients accelerate their digital reinventions by modernizing their application infrastructures and leveraging business transformation services built on hybrid cloud.

(\$ in millions)	2020	2019 *	Yr.-to-Yr. Percent/ Margin Change
For the year ended December 31:			
Global Business Services			
External gross profit	\$4,795	\$4,655	3.0 %
External gross profit margin	29.7 %	27.7 %	2.0 pts.
Pre-tax income	\$1,351	\$1,623	(16.8)%
Pre-tax margin	8.3 %	9.5 %	(1.2)pts.

* Recast to reflect segment changes.

The GBS gross profit margin increased 2.0 points to 29.7 percent compared to the prior year, driven by margin improvements across all three areas of the business. The gross margin expansion reflects our shift to higher-value offerings, improved productivity and operational efficiency created by our investments in innovative delivery capabilities and our ability to leverage our variable and global delivery resource model. Pre-tax income of \$1,351 million decreased 16.8 percent compared to the prior year and the pre-tax margin declined 1.2 points to 8.3 percent. The year-to-year declines in pre-tax income and margin were driven by the higher workforce rebalancing charges year to year, which had 2.6 points of impact to pre-tax margin, partially offset by the gross margin expansion.

Global Technology Services

(\$ in millions)	2020	2019	Yr.-to-Yr. Percent Change	Percent Change Adjusted for Currency
For the year ended December 31:				
Global Technology Services external revenue	\$25,812	\$27,361	(5.7)%	(5.4)%
Infrastructure & Cloud Services	\$19,669	\$20,736	(5.1)%	(5.2)%
Technology Support Services	6,144	6,625	(7.3)	(6.0)

GTS revenue of \$25,812 million decreased 5.7 percent as reported (5 percent adjusted for currency) in 2020 compared to the prior year. The revenue decline was driven by lower client business volumes primarily with clients in industries more impacted by the macroeconomic environment. However, cloud revenue grew as reported and adjusted for currency in 2020 compared to the prior year. We had strong contract renewals and added a number of new clients in the fourth quarter.

Infrastructure & Cloud Services revenue of \$19,669 million decreased 5.1 percent as reported (5 percent adjusted for currency) compared to the prior year. Revenue was impacted by lower client-based business volumes year to year in the more economically sensitive industries. Clients took a longer-term view, with a focus on modernizing their core infrastructure to create operational efficiency and move their mission-critical workloads to a hybrid cloud platform. These clients turn to GTS's managed infrastructure services with its deep expertise in managing clients' mission-critical infrastructures and next generation service delivery capabilities infused with AI and automation. As we prepare to separate our managed infrastructure services business in 2021, we are deeply engaged with our clients to ensure a smooth transition to NewCo, the world's leading provider of infrastructure services.

Technology Support Services (TSS) revenue of \$6,144 million decreased 7.3 percent as reported (6 percent adjusted for currency) in 2020, driven primarily by the Systems hardware product cycles and a shift away from lower value services.

Within GTS, cloud revenue of \$9.4 billion grew 10 percent as reported and adjusted for currency.

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(\$ in millions)

	2020	2019	Yr.-to-Yr. Percent/ Margin Change
For the year ended December 31:			
Global Technology Services			
External total gross profit	\$8,975	\$9,515	(5.7)%
External total gross profit margin	34.8 %	34.8 %	0.0 pts.
Pre-tax income	\$ 117	\$1,645	(92.9)%
Pre-tax margin	0.4 %	5.8 %	(5.3)pts.

The GTS gross profit margin of 34.8 percent was flat compared to the prior year. We had margin improvement across the portfolio from the benefits of workforce rebalancing actions taken earlier in the year and from the shift to higher-value business, partially offset by revenue declines in TSS. Pre-tax income of \$117 million decreased 92.9 percent and pre-tax margin decreased 5.3 points year to year to 0.4 percent, reflecting the higher level of workforce rebalancing charges in the current year, which had 4.2 points of impact on the pre-tax margin. A significant portion of the structural actions in the fourth quarter of 2020 impacted GTS in order to further improve margins and the overall financial profile of the business.

Services Backlog and Signings

(\$ in billions)

	2020	2019	Yr.-to-Yr. Percent Change	Percent Change Adjusted for Currency
At December 31:				
Total backlog	\$110.8	\$112.4	(1.5)%	(4.5)%

The estimated total services backlog at December 31, 2020 was \$111 billion, a decrease of 1.5 percent as reported (4 percent adjusted for currency).

Total services backlog includes Infrastructure & Cloud Services, Security Services, Consulting, Global Process Services, Application Management and TSS. Total backlog is intended to be a statement of overall work under contract which is either noncancelable, or which historically has very low likelihood of termination, given the criticality of certain services to the company's clients. Total backlog does not include as-a-Service arrangements that allow for termination under contractual commitment terms. Backlog estimates are subject to change and are affected by several factors, including terminations, changes in the scope of contracts, periodic revalidations, adjustments for revenue not materialized and adjustments for currency.

(\$ in millions)

	2020	2019	Yr.-to-Yr. Percent Change	Percent Change Adjusted for Currency
For the year ended December 31:				
Total signings	\$38,770	\$40,741	(4.8)%	(5.1)%

Services signings are management's initial estimate of the value of a client's commitment under a services contract. There are no third-party standards or requirements governing the calculation of signings. The calculation used by management involves estimates and judgments to gauge the extent of a client's commitment, including the type and duration of the agreement, and the presence of termination charges or wind-down costs.

Signings include Infrastructure & Cloud Services, Security Services, Consulting, Global Process Services and Application Management contracts. Contract extensions and increases in scope are treated as signings only to the extent of the incremental new value. Total services signings can vary over time due to a variety of factors including, but not limited to, the timing of signing a small number of larger contracts, such as in Infrastructure & Cloud Services or Global Process Services. TSS is generally not included in signings as the maintenance contracts tend to be more steady state, where revenues equal renewals. Certain longer-term TSS contracts that have characteristics similar to outsourcing contracts are included in signings.

Contract portfolios purchased in an acquisition are treated as positive backlog adjustments provided those contracts meet the company's requirements for initial signings. A new signing will be recognized if a new services agreement is signed incidental or coincidental to an acquisition or divestiture.

Management believes that the estimated values of services backlog and signings disclosed herein provide insight into our potential future revenue, which is used by management as a tool to monitor the performance of the business and viewed as useful decision-making information for investors. The conversion of signings and backlog into revenue may vary based on the types of services and

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solutions, customer decisions, and as well as other factors, which may include, but are not limited to, macroeconomic environment or external events.

Systems

(\$ in millions)

	2020	2019	Yr.-to-Yr. Percent Change	Percent Change Adjusted for Currency
For the year ended December 31:				
Systems external revenue	\$6,978	\$7,604	(8.2)%	(8.7)%
Systems Hardware	\$5,481	\$5,918	(7.4)%	(8.0)%
IBM Z			1.9	1.2
Power Systems			(22.4)	(22.9)
Storage Systems			(6.1)	(6.7)
Operating Systems Software	1,497	1,686	(11.2)	(11.2)

Systems revenue of \$6,978 million decreased 8.2 percent year to year as reported (9 percent adjusted for currency). Our Systems portfolio continues to deliver critical and lasting value to enterprise clients in support of our hybrid cloud strategy. Systems Hardware revenue of \$5,481 million declined 7.4 percent as reported (8 percent adjusted for currency), driven primarily by declines in Power Systems and Storage Systems, partially offset by year-to-year growth in IBM Z. Operating Systems Software revenue of \$1,497 million declined 11.2 percent as reported (11 percent adjusted for currency) compared to the prior year.

Within Systems Hardware, IBM Z revenue increased 1.9 percent as reported (1 percent adjusted for currency) despite an elongated z15 adoption cycle as a result of the challenging environment. The full-year growth in IBM Z reflects the importance of this high-value, secure and scalable platform with cloud native development capabilities. Our installed base of MIPS is more than 3.5 times the level of a decade ago, with 60 percent of our install base in new workload areas such as Linux.

Power Systems revenue decreased 22.4 percent as reported (23 percent adjusted for currency) year to year, reflecting the product cycles across the Power Systems portfolio.

Storage Systems revenue decreased 6.1 percent as reported (7 percent adjusted for currency) year to year, driven primarily by declines in high-end storage which is a reflection of the IBM Z cycle.

Within Systems, cloud revenue of \$2.9 billion declined 3 percent as reported and adjusted for currency.

(\$ in millions)

	2020	2019	Yr.-to-Yr. Percent/ Margin Change
For the year ended December 31:			
Systems			
External Systems Hardware gross profit	\$2,668	\$2,622	1.8 %
External Systems Hardware gross profit margin	48.7 %	44.3 %	4.4 pts.
External Operating Systems Software gross profit	\$1,232	\$1,412	(12.8)%
External Operating Systems Software gross profit margin	82.3 %	83.8 %	(1.5)pts.
External total gross profit	\$3,899	\$4,034	(3.3)%
External total gross profit margin	55.9 %	53.1 %	2.8 pts.
Pre-tax income	\$ 449	\$ 701	(36.0)%
Pre-tax margin	5.8 %	8.4 %	(2.7)pts.

The Systems gross profit margin increased 2.8 points to 55.9 percent in 2020 compared to the prior year, driven primarily by margin improvements in IBM Z and Power Systems, and a mix to IBM Z hardware. Pre-tax income of \$449 million declined 36.0 percent and pre-tax margin decreased 2.7 points year to year to 5.8 percent, driven primarily by the higher level of workforce rebalancing charges in the current year, which had 2.5 points of impact on the pre-tax margin.

Global Financing

(\$ in millions)

For the year ended December 31:	2020	2019	Yr.-to-Yr. Percent Change
External revenue	\$1,123	\$1,400	(19.8)%
Internal revenue	894	1,232	(27.5)
Total revenue	\$2,017	\$2,632	(23.4)%
Pre-tax income	\$ 761	\$1,055	(27.8)%

In 2019, we began the wind down of our OEM Commercial Financing business to refocus our Global Financing business on IBM's products and services. In 2020, we entered into arrangements to sell certain financing receivables to third parties. While the strategic actions we have taken are the primary driver of the decline in external revenue and pre-tax income on a year-to-year basis, our repositioning of the Global Financing business has strengthened our liquidity position, improved the quality of our portfolio and lowered our debt needs.

Global Financing total revenue decreased 23.4 percent compared to the prior year. This was due to a decrease in internal revenue of 27.5 percent, driven by decreases in internal used equipment sales (down 22.3 percent to \$670 million) and internal financing (down 39.5 percent to \$224 million). The decrease in internal financing was due to lower average asset balances and yields. External revenue declined 19.8 percent due to decreases in external financing (down 25.5 percent to \$834 million), reflecting the wind down of the OEM IT commercial financing operations and a decline in client financing revenue.

Sales of used equipment represented 47.5 percent and 43.4 percent of Global Financing's revenue for the years ended December 31, 2020 and 2019, respectively, which reflects lower financing revenue compared to 2019. The gross profit margin on used sales was 50.7 percent and 52.2 percent for the years ended December 31, 2020 and 2019, respectively.

Global Financing pre-tax income decreased 27.8 percent year to year primarily driven by a decline in gross profit (\$339 million) due to lower revenue, partially offset by a decrease in expense (\$46 million), which was in line with the segment's performance.

Geographic Revenue

In addition to the revenue presentation by reportable segment, we also measure revenue performance on a geographic basis.

(\$ in millions)

For the year ended December 31:	2020	2019	Yr.-to-Yr. Percent Change	Yr.-to-Yr. Percent Change Adjusted for Currency	Excluding Divested Businesses And Adjusted for Currency	Yr.-to-Yr. Percent Change
						Reported
Total revenue	\$73,620	\$77,147	(4.6)%	(4.7)%	(3.5)%	
Americas	\$34,114	\$36,274	(6.0)%	(4.8)%	(3.5)%	
Europe/Middle East/Africa	23,644	24,443	(3.3)	(4.7)	(3.6)	
Asia Pacific	15,863	16,430	(3.5)	(4.3)	(3.5)	

Total revenue of \$73,620 million in 2020 decreased 4.6 percent year to year as reported (5 percent adjusted for currency and 4 percent excluding divested businesses and adjusted for currency).

Americas revenue decreased 6.0 percent as reported (5 percent adjusted for currency and 4 percent excluding divested businesses and adjusted for currency). Within North America, the U.S. decreased 4.9 percent and Canada decreased 6.0 percent as reported (5 percent adjusted for currency). Latin America declined 12.9 percent as reported (3 percent adjusted for currency). Within Latin America, Brazil declined 17.9 percent as reported (3 percent adjusted for currency).

EMEA revenue decreased 3.3 percent as reported (5 percent adjusted for currency and 4 percent excluding divested businesses and adjusted for currency). As reported, the UK, Germany, France and Italy decreased 9.5 percent, 6.3 percent, 3.4 percent and 1.0 percent, respectively, and declined 10 percent, 9 percent, 5 percent and 3 percent, respectively, adjusted for currency.

Asia Pacific revenue decreased 3.5 percent as reported (4 percent adjusted for currency and excluding divested businesses and adjusted for currency). Japan was flat as reported and decreased 2 percent adjusted for currency. As reported, China, Australia and India decreased 13.0 percent, 5.8 percent and 6.7 percent, respectively, and declined 13 percent, 5 percent and 2 percent, respectively, adjusted for currency.

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Total Expense and Other (Income)

	(\$ in millions)		Yr.-to-Yr. Percent/ Margin Change
For the year ended December 31:	2020	2019	
Total consolidated expense and other (income)	\$30,937 *	\$26,322	17.5 %
Non-operating adjustments			
Amortization of acquired intangible assets	(1,126)	(764)	47.3
Acquisition-related charges	(13)	(409)	(96.8)
Non-operating retirement-related (costs)/income	(1,123)	(615)	82.5
Spin-off-related charges	(28)	—	NM
Operating (non-GAAP) expense and other (income)	\$28,648 *	\$24,533	16.8 %
Total consolidated expense-to-revenue ratio	42.0 %	34.1 %	7.9 pts.
Operating (non-GAAP) expense-to-revenue ratio	38.9 %	31.8 %	7.1 pts.

* Includes a \$2.0 billion pre-tax charge for structural actions in the fourth quarter.

NM—Not meaningful

Total expense and other (income) year-to-year results for the year ended December 31, 2020 were impacted by the Red Hat acquisition which closed in July 2019. As a result, in the current year, there was a full year of expenses for Red Hat operational spending and amortization of acquired intangible assets associated with the transaction. The current year also included a fourth-quarter \$2.0 billion pre-tax charge for structural actions (primarily workforce rebalancing) to simplify and optimize our operating model.

Total expense and other (income) increased 17.5 percent in 2020 versus the prior year primarily driven by the fourth-quarter charge for workforce rebalancing, higher Red Hat operational spending, lower gains from divestitures and higher non-operating retirement-related costs, partially offset by lower spending including reductions in travel and other expenses associated with COVID-19 restrictions. Total operating (non-GAAP) expense and other (income) increased 16.8 percent year to year, driven primarily by the factors above excluding the higher non-operating retirement-related costs.

For additional information regarding total expense and other (income) for both expense presentations, see the following analyses by category.

Selling, General and Administrative Expense

	(\$ in millions)		Yr.-to-Yr. Percent Change
For the year ended December 31:	2020	2019	
Selling, general and administrative expense			
Selling, general and administrative—other	\$16,800	\$17,099	(1.8)%
Advertising and promotional expense	1,542	1,647	(6.3)
Workforce rebalancing charges	2,922 *	555	426.3
Amortization of acquired intangible assets	1,123	762	47.5
Stock-based compensation	586	453	29.5
Provision for/(benefit from) expected credit loss expense	109	89	22.4
Total consolidated selling, general and administrative expense	\$23,082 *	\$20,604	12.0 %
Non-operating adjustments			
Amortization of acquired intangible assets	(1,123)	(762)	47.5
Acquisition-related charges	(13)	(282)	(95.3)
Spin-off-related charges	(28)	—	NM
Operating (non-GAAP) selling, general and administrative expense	\$21,917 *	\$19,560	12.1 %

* Includes a \$2.0 billion pre-tax charge for structural actions in the fourth quarter.

NM—Not meaningful

Total selling, general and administrative (SG&A) expense increased 12.0 percent in 2020 versus 2019, driven primarily by the following factors:

- Fourth-quarter workforce rebalancing charge (10 points);
- Higher spending (2 points) driven by a full year of Red Hat operational expense in 2020 compared to six months in 2019 (5 points), partially offset by spending reductions associated with COVID-19 restrictions;
- Higher amortization of acquired intangible assets associated with the Red Hat transaction (1 point); partially offset by
- Lower acquisition-related charges associated with the Red Hat transaction (2 points).

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Operating (non-GAAP) expense increased 12.1 percent year to year primarily driven by the same factors excluding the acquisition-related charges and amortization of acquired intangible assets associated with the Red Hat transaction.

Provisions for expected credit loss expense increased \$19.8 million in 2020 compared to 2019. The receivables provision coverage was 2.4 percent at December 31, 2020, an increase of 70 basis points from December 31, 2019. The higher coverage rate at December 31, 2020 also reflects the adoption of the new guidance for current expected credit losses.

Research, Development and Engineering Expense

(\$ in millions)

	2020	2019	Yr.-to-Yr. Percent Change
For the year ended December 31:			
Total consolidated research, development and engineering	\$6,333	\$5,989	5.7 %
Non-operating adjustment			
Acquisition-related charges	—	(53)	(100.0)
Operating (non-GAAP) research, development and engineering	\$6,333	\$5,936	6.7 %

Research, development and engineering (RD&E) expense was 8.6 percent of revenue in 2020 and 7.8 percent of revenue in 2019.

RD&E expense increased 5.7 percent in 2020 versus 2019 primarily driven by:

- Higher spending (7 points) driven by a full year of Red Hat spending in 2020 compared to six months in 2019 (8 points); partially offset by
- Lower acquisition-related charges associated with the Red Hat transaction (1 point).

Operating (non-GAAP) expense increased 6.7 percent year to year primarily driven by Red Hat spending.

Intellectual Property and Custom Development Income

(\$ in millions)

	2020	2019	Yr.-to-Yr. Percent Change
For the year ended December 31:			
Licensing of intellectual property including royalty-based fees	\$309	\$367	(15.8)%
Custom development income	275	246	11.7
Sales/other transfers of intellectual property	42	34	22.4
Total	\$626	\$648	(3.3)%

Licensing of intellectual property including royalty-based fees decreased 3.3 percent in 2020 compared to 2019. This was primarily due to a decline in licensing of intellectual property including royalty-based fees compared to the prior year. The timing and amount of licensing, sales or other transfers of IP may vary significantly from period to period depending upon the timing of licensing agreements, economic conditions, industry consolidation and the timing of new patents and know-how development.

Other (Income) and Expense

(\$ in millions)

	2020	2019	Yr.-to-Yr. Percent Change
For the year ended December 31:			
Other (income) and expense			
Foreign currency transaction losses/(gains)	\$ 114	\$ (279)	NM
(Gains)/losses on derivative instruments	(101)	15	NM
Interest income	(105)	(349)	(70.0)%
Net (gains)/losses from securities and investment assets	(22)	(32)	(31.8)
Retirement-related costs/(income)	1,123	615	82.5
Other	(149)	(937)	(84.2)
Total consolidated other (income) and expense	\$ 861	\$ (968)	NM
Non-operating adjustments			
Amortization of acquired intangible assets	(2)	(2)	—
Acquisition-related charges	—	154	(100.0)
Non-operating retirement-related costs/(income)	(1,123)	(615)	82.5
Operating (non-GAAP) other (income) and expense	\$ (265)	\$ (1,431)	(81.5)%

NM—Not meaningful

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Total consolidated other (income) and expense was expense of \$861 million in 2020 compared to income of \$968 million in 2019. The year-to-year change was primarily driven by:

- Lower gains from divestitures (\$733 million) reflected in Other;
- Higher non-operating retirement-related costs (\$508 million). Refer to “Retirement-Related Plans” for additional information.
- Net exchange losses (including derivative instruments) in the current year versus net exchange gains (including derivative instruments) in the prior year (\$277 million); and
- Lower interest income (\$244 million) driven by lower interest rates and a lower average cash balance in the current year.

Operating (non-GAAP) other (income) and expense was \$265 million of income in 2020 and decreased \$1,167 million compared to the prior-year period. The year-to-year change was primarily driven by the lower gains from divestitures, effects of currency and lower interest income described above.

Interest Expense

(\$ in millions)

	2020	2019	Yr.-to-Yr. Percent Change
For the year ended December 31:			
Total consolidated interest expense	\$1,288	\$1,344	(4.2)%
Non-operating adjustment			
Acquisition-related charges	—	(228)	(100.0)
Operating (non-GAAP) interest expense	\$1,288	\$1,116	15.4 %

Interest expense decreased \$56 million compared to 2019. Interest expense is presented in cost of financing in the Consolidated Income Statement only if the related external borrowings are to support the Global Financing external business. Overall interest expense (excluding capitalized interest) in 2020 was \$1,738 million, a decrease of \$214 million year to year primarily driven by lower average interest rates.

Operating (non-GAAP) interest expense increased \$172 million compared to the prior-year period. The prior year excluded Red Hat pre-closing debt financing costs and the current year included a full year of interest expense associated with the higher level of debt.

Stock-Based Compensation

Pre-tax stock-based compensation cost of \$937 million increased \$258 million compared to 2019. This was primarily due to increases related to a full year of compensation expense associated with the issuances and conversions of stock-based compensation for Red Hat (\$167 million) compared to six months in 2019, and issuances of restricted stock units (\$91 million). Stock-based compensation cost, and the year-to-year change, was reflected in the following categories: Cost: \$153 million, up \$53 million; SG&A expense: \$586 million, up \$134 million; and RD&E expense: \$198 million, up \$72 million.

Retirement-Related Plans

The following table provides the total pre-tax cost for all retirement-related plans. Total operating costs/(income) are included in the Consolidated Income Statement within the caption (e.g., Cost, SG&A, RD&E) relating to the job function of the plan participants.

(\$ in millions)

	2020	2019	Yr.-to-Yr. Percent Change
For the year ended December 31:			
Retirement-related plans—cost			
Service cost	\$ 406	\$ 385	5.5 %
Multi-employer plans	29	32	(7.9)
Cost of defined contribution plans	1,058	1,040	1.8
Total operating costs/(income)	\$ 1,494	\$ 1,457	2.5 %
Interest cost	\$ 2,203	\$ 2,929	(24.8)%
Expected return on plan assets	(3,448)	(4,192)	(17.8)
Recognized actuarial losses	2,285	1,819	25.7
Amortization of prior service costs/(credits)	13	(9)	NM
Curtailments/settlements	52	41	28.4
Other costs	18	28	(37.9)
Total non-operating costs/(income)	\$ 1,123	\$ 615	82.5 %
Total retirement-related plans—cost	\$ 2,617	\$ 2,072	26.3 %

NM—Not meaningful

Total pre-tax retirement-related plan cost increased by \$545 million compared to 2019, primarily driven by lower expected returns on plan assets (\$744 million) and an increase in recognized actuarial losses (\$467 million), partially offset by lower interest costs (\$726 million).

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As discussed in the “Operating (non-GAAP) Earnings” section, we characterize certain retirement-related costs as operating and others as non-operating. Utilizing this characterization, operating retirement-related costs in 2020 were \$1,494 million, an increase of \$37 million compared to 2019. Non-operating costs of \$1,123 million in 2020 increased \$508 million year to year, driven primarily by the same factors as above.

Income Taxes

The continuing operations effective tax rate for 2020 was (18.6) percent compared to 7.2 percent in 2019. The decrease in the effective tax rate was primarily driven by a net tax benefit of \$0.9 billion related to an intra-entity sale of certain of the company’s intellectual property and related impacts in the first quarter of 2020, and a benefit of \$0.2 billion related to a foreign tax law change. The operating (non-GAAP) effective tax rate for 2020 was (1.5) percent compared to 8.5 percent in 2019. The current year operating (non-GAAP) benefit from income taxes was primarily driven by the net tax benefit from the intra-entity IP sale. For more information, see note G, “Taxes.”

Earnings Per Share

Basic earnings per share is computed on the basis of the weighted-average number of shares of common stock outstanding during the period. Diluted earnings per share is computed on the basis of the weighted-average number of shares of common stock outstanding plus the effect of dilutive potential common shares outstanding during the period using the treasury stock method. Dilutive potential common shares include outstanding stock options and stock awards.

For the year ended December 31:	2020	2019	Yr.-to-Yr. Percent Change
Earnings per share of common stock from continuing operations			
Assuming dilution	\$6.13 *	\$10.57	(42.0)%
Basic	\$6.18 *	\$10.63	(41.9)%
Diluted operating (non-GAAP)	\$8.67 *	\$12.81	(32.3)%
Weighted-average shares outstanding (in millions)			
Assuming dilution	896.6	892.8	0.4 %
Basic	890.3	887.2	0.4 %

* The \$2.0 billion pre-tax charge for structural actions in the fourth quarter resulted in an impact of (\$1.84) to diluted earnings per share from continuing operations and diluted operating (non-GAAP) earnings per share. The impact to basic earnings per share was (\$1.85).

Actual shares outstanding at December 31, 2020 and 2019 were 892.7 million and 887.1 million, respectively. The year-to-year increase was primarily the result of the common stock issued under employee plans. The average number of common shares outstanding assuming dilution was 3.8 million shares higher in 2020 versus 2019.

Financial Position

Dynamics

At December 31, 2020, our balance sheet remained strong with flexibility to support the business. We continue to manage the investment portfolio to meet our capital preservation and liquidity objectives. In this unprecedented environment as a result of the COVID-19 pandemic, while we are supporting our clients and improving the flexibility and competitive position of our operations, we took actions to enhance our balance sheet strength and liquidity position.

Cash, restricted cash and marketable securities at December 31, 2020 were \$14,275 million, an increase of \$5,265 million compared to prior year end. Through strategic mitigation actions and re-focus of our Global Financing portfolio, financing receivables declined \$4,925 million to \$17,979 million as of December 31, 2020. Total debt of \$61,538 million decreased \$1,361 million from prior year-end. During 2020, we completed bond issuances totaling \$8,117 million, with terms ranging from 7 to 30 years, and interest rates ranging from 0.325 to 2.95 percent depending on maturity. We have reduced total debt \$11,501 million since the end of the second quarter of 2019 (immediately preceding the Red Hat acquisition). We have consistently generated strong cash flow from operations and continue to have access to additional sources of liquidity through the capital markets and our credit facilities.

During 2020, we generated \$18,197 million in cash from operating activities, an increase of \$3,426 million compared to 2019. The year-to-year increase was primarily driven by the reduction of financing receivables due to sales of receivables. Our free cash flow for 2020 was \$10,805 million, a decrease of \$1,104 million compared to the prior year. See pages 57 and 58 for additional information on free cash flow. We returned \$5,797 million to shareholders through dividends in 2020. We suspended our share repurchase program at the time of the Red Hat closing to focus on debt repayment. At 2020 year end, we had \$2.0 billion remaining in share repurchase authorization. Our cash generation permits us to invest and deploy capital to areas with the most attractive long-term opportunities.

Consistent with accounting standards, the company remeasured the funded status of our retirement and postretirement plans at December 31. At December 31, 2020, the overall net underfunded position was \$11,506 million, an increase of \$416 million from December 31, 2019, driven by lower discount rates partially offset by strong asset returns. At year end, our qualified defined benefit

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plans were well funded and the required contributions related to these plans and multi-employer plans are expected to be approximately \$300 million in both 2021 and 2022. In 2020, the return on the U.S. Personal Pension Plan assets was 12.2 percent and the plan was 108 percent funded at December 31, 2020. Overall, global asset returns were 9.6 percent and the qualified defined benefit plans worldwide were 102 percent funded at December 31, 2020.

Global Financing Financial Position Key Metrics

(\$ in millions)

At December 31:	2020	2019
Cash and cash equivalents	\$ 1,862	\$ 1,697
Net investment in sales-type and direct financing leases ⁽¹⁾	4,092	6,224
Equipment under operating leases—external clients ⁽²⁾	104	238
Client loans	11,498	12,884
Total client financing assets	15,694	19,346
Commercial financing receivables	2,411	3,820
Intercompany financing receivables ^{(3) (4)}	3,959	3,870
Total assets	\$25,075	\$29,568
Debt	21,167	24,727
Total equity	\$ 2,352	\$ 2,749

⁽¹⁾ Includes deferred initial direct costs which are expensed in IBM's consolidated results.

⁽²⁾ Includes intercompany mark-up, priced on an arm's-length basis, on products purchased from the company's product divisions which is eliminated in IBM's consolidated results.

⁽³⁾ Entire amount eliminated for purposes of IBM's consolidated results and therefore does not appear in the Consolidated Balance Sheet.

⁽⁴⁾ These assets, along with all other financing assets in this table, are leveraged at the value in the table using Global Financing debt.

At December 31, 2020, approximately 61 percent of the total external portfolio was with investment-grade clients with no direct exposure to consumers, a decrease of 4 points year to year and an increase of 4 points compared to September 30, 2020. The reduction in investment grade year to year was driven primarily by credit rating changes within the existing portfolio of clients, partially offset by the wind down of OEM IT commercial financing operations. We continue to apply our rigorous credit policies, particularly in industries and countries disrupted by COVID-19, as it relates to the origination of new business. This investment grade percentage is based on the credit ratings of the companies in the portfolio and reflects mitigating credit enhancement actions taken by the client to reduce the risk to IBM.

We have a long-standing practice of taking mitigation actions, in certain circumstances, to transfer credit risk to third parties, with enhanced focus in this unprecedented environment of the COVID-19 pandemic. These actions may include credit insurance, financial guarantees, nonrecourse borrowings, transfers of receivables recorded as true sales in accordance with accounting guidance or sales of equipment under operating lease. Sales of receivables arrangements are also utilized in the normal course of business as part of the company's cash and liquidity management.

During the year ended December 31, 2020, the company sold \$2,562 million of client financing receivables, consisting of loan and lease receivables of \$1,410 million and \$1,152 million, respectively.

On December 24, 2020, the company entered into an agreement with a third-party investor to sell up to \$3,000 million of IBM short-term commercial financing receivables, at any one time, on a revolving basis. The company sold \$515 million of commercial financing receivables under the agreement in the fourth quarter of 2020. In addition, the company included \$383 million of commercial financing receivables classified as held for sale at December 31, 2020 in short-term financing receivables in the Consolidated Balance Sheet.

The reduction of financing receivables due to these sales resulted in a benefit to cash flows from operating activities, however had no impact to free cash flow. The impact to the Consolidated Income Statement, including fees and net gain or loss associated with the transfer of these receivables for the year ended December 31, 2020, was not material. For additional information relating to the sales of financing receivables refer to note K, "Financing Receivables."

IBM Working Capital

(\$ in millions)

At December 31:	2020	2019
Current assets	\$39,165	\$38,420
Current liabilities	39,869	37,701
Working capital	\$ (705)	\$ 718
Current ratio	0.98:1	1.02:1

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Working capital decreased \$1,423 million from the year-end 2019 position. The key changes are described below:

Current assets increased \$745 million (\$40 million adjusted for currency) due to:

- An increase of \$5,265 million (\$5,064 million adjusted for currency) in cash and cash equivalents, restricted cash and marketable securities; and
- An increase of \$536 million (\$446 million adjusted for currency) in total inventory, deferred costs and prepaid expenses and other current assets; partially offset by
- A decline in receivables of \$5,057 million (\$5,469 million adjusted for currency) mainly due to sales of financing receivables, continued focus on collections, including collection of divestiture-related receivables and a decline in revenue.

Current liabilities increased \$2,168 million (\$1,121 million adjusted for currency) as a result of:

- An increase in other accrued expenses and liabilities of \$2,491 million (\$1,922 million adjusted for currency) primarily due to the fourth-quarter workforce rebalancing charge; and
- An increase in deferred income of \$807 million (\$488 million adjusted for currency); and
- An increase in taxes payable of \$462 million (\$448 million adjusted for currency); partially offset by
- A decrease in short-term debt of \$1,615 million (\$1,552 million adjusted for currency) due to maturities of \$9,165 million; partially offset by reclassifications of \$7,998 million from long-term debt to reflect upcoming maturities.

Receivables and Allowances

Roll Forward of Total IBM Receivables Allowance for Credit Losses

(\$ in millions)				
January 1, 2020 *	Additions/ (Releases) **	Write-offs +	Other ++	December 31, 2020
\$ 612	\$ 108	\$ (85)	\$ 10	\$ 644

* Opening balance does not equal the allowance at December 31, 2019 due to the adoption of the guidance on current expected credit losses. Refer to note B, "Accounting Changes," for additional information.

** Additions/(Releases) for Allowance for Credit Losses are recorded in expense.

+ Refer to note A, "Significant Accounting Policies," for additional information regarding Allowance for Credit Losses write-offs.

++ Primarily represents translation adjustments.

The total IBM receivables provision coverage was 2.4 percent at December 31, 2020, an increase of 60 basis points compared to January 1, 2020. The increase was primarily driven by the overall decline in total receivables and an increase in customer specific provisions. The majority of the write-offs during the year related to receivables which had been previously reserved.

Global Financing Receivables and Allowances

The following table presents external Global Financing receivables excluding immaterial miscellaneous receivables.

(\$ in millions)		
At December 31:	2020	2019
Amortized cost/Recorded investment⁽¹⁾⁽²⁾	\$ 18,264	\$ 22,446
Specific allowance for credit losses	184	177
Unallocated allowance for credit losses	79	45
Total allowance for credit losses	263	221
Net financing receivables	\$ 18,001	\$ 22,224
Allowance for credit losses coverage	1.4 %	1.0 %

⁽¹⁾ Prior to the January 1, 2020 adoption of the guidance on current expected credit losses, the presentation was recorded investment, subsequent to adoption the presentation is amortized cost. Both presentations include deferred initial direct costs which are expensed in IBM's consolidated results.

⁽²⁾ The amortized cost basis of a financial asset represents the original amount of the financing receivable (including residual value) adjusted for unearned income, deferred initial direct costs, cash collected, write-offs and any foreign exchange adjustment. Recorded investment excluded residual value.

Upon the adoption of the guidance on current expected credit losses, the percentage of financing receivables reserved increased from 1.0 percent at December 31, 2019, to 1.1 percent January 1, 2020, primarily driven by a 74.2 percent increase in unallocated reserves.

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The percentage of financing receivables reserved increased from 1.1 percent at January 1, 2020, to 1.4 percent at December 31, 2020, which reflects essentially flat unallocated and specific reserves and an overall decline in financing receivables.

Roll Forward of Global Financing Receivables Allowance for Credit Losses (included in Total IBM)

(\$ in millions)

January 1, 2020 *	Additions/ (Releases) **	Write-offs +	Other ++	December 31, 2020
\$262	\$32	\$(36)	\$4	\$263

* Opening balance does not equal the allowance at December 31, 2019 due to the adoption of the guidance on current expected credit losses. Refer to note B, "Accounting Changes," for additional information.

** Additions/(Releases) for Allowance for Credit Losses are recorded in expense.

+ Refer to note A, "Significant Accounting Policies," for additional information regarding Allowance for Credit Loss write-offs.

++ Primarily represents recoveries of amounts previously written off and translation adjustments.

Global Financing's provision for expected credit losses (including impacts from off-balance sheet commitments which are recorded in other liabilities) was an addition of \$34 million in 2020, compared to a release of \$7 million in 2019. The increase was primarily driven by higher unallocated and specific reserves in Americas.

Noncurrent Assets and Liabilities

(\$ in millions)

At December 31:	2020	2019
Noncurrent assets	\$116,806	\$113,767
Long-term debt	\$ 54,355	\$ 54,102
Noncurrent liabilities (excluding debt)	\$ 41,020	\$ 39,398

The increase in noncurrent assets of \$3,039 million (\$829 million adjusted for currency) was driven by:

- An increase in deferred taxes of \$4,060 million (\$3,915 million adjusted for currency) primarily due to the intra-entity sale of IP in the first quarter; and
- An increase in prepaid pension assets of \$745 million (\$526 million adjusted for currency) driven by higher returns on plan assets and plan remeasurements; partially offset by
- A decrease in long-term financing receivables of \$1,626 million (\$1,811 million adjusted for currency) as a result of sales of receivables and product cycle dynamics; and
- A decrease in net intangible assets and goodwill of \$44 million (\$1,283 million adjusted for currency) resulting from intangibles amortization, partially offset by an increase from new acquisitions.

Long-term debt increased \$253 million (decreased \$1,307 million adjusted for currency) primarily driven by:

- Issuances of \$8,727 million; partially offset by
- Reclassifications to short-term debt of \$7,998 million to reflect upcoming maturities; and
- Redemption of \$2,102 million of certain outstanding bonds.

Noncurrent liabilities (excluding debt) increased \$1,621 million (\$251 million adjusted for currency) primarily driven by:

- An increase in retirement and nonpension postretirement benefit obligations of \$1,106 million (\$297 million adjusted for currency) mainly driven by plan remeasurements; and
- An increase in deferred income of \$450 million (\$364 million adjusted for currency); partially offset by
- A decrease in operating lease liabilities of \$306 million (\$424 million adjusted for currency).

Debt

Our funding requirements are continually monitored and we execute our strategies to manage the overall asset and liability profile. Additionally, we maintain sufficient flexibility to access global funding sources as needed.

(\$ in millions)

At December 31:	2020	2019
Total company debt	\$61,538	\$62,899
Total Global Financing segment debt	\$21,167	\$24,727
Debt to support external clients	17,819	21,487
Debt to support internal clients	3,348	3,239
Non-Global Financing debt	\$40,371	\$38,173

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Total debt of \$61,538 million decreased \$1,361 million (\$2,859 million adjusted for currency) from December 31, 2019, primarily driven by early retirements and debt maturities of \$11,267 million; partially offset by issuances of \$8,982 million. Total debt decreased \$11,501 million since the end of the second quarter 2019 (immediately preceding the Red Hat acquisition).

Non-Global Financing debt of \$40,371 million increased \$2,199 million (\$1,046 million adjusting for currency) from December 31, 2019, but has decreased \$7,685 million since June 30, 2019.

Global Financing debt of \$21,167 million decreased \$3,560 million from December 31, 2019 (\$3,905 million adjusting for currency), primarily due to lower funding requirements as a result of the decline in financing assets, consistent with the company's portfolio management strategy.

Global Financing provides financing predominantly for IBM's external client assets, as well as for assets under contract by other IBM units. These assets, primarily for GTS, generate long-term, stable revenue streams similar to the Global Financing asset portfolio. Based on their attributes, these GTS assets are leveraged with the balance of the Global Financing asset base.

The debt used to fund Global Financing assets is composed of intercompany loans and external debt. Total debt changes generally correspond with the level of client and commercial financing receivables, the level of cash and cash equivalents, the change in intercompany and external payables and the change in intercompany investment from IBM. The terms of the intercompany loans are set by the company to substantially match the term, currency and interest rate variability underlying the financing receivable and are based on arm's-length pricing. The Global Financing debt-to-equity ratio remained at 9 to 1 at December 31, 2020.

We measure Global Financing as a stand-alone entity, and accordingly, interest expense relating to debt supporting Global Financing's external client and internal business is included in the "Global Financing Results of Operations" and in note D, "Segments." In the Consolidated Income Statement, the external debt-related interest expense supporting Global Financing's internal financing to IBM is reclassified from cost of financing to interest expense.

Equity

Total equity decreased by \$258 million from December 31, 2019, primarily due to dividends paid of \$5,797 million and a decline in accumulated other comprehensive income of \$740 million mainly due to foreign currency translation adjustments; partially offset by increases from net income of \$5,590 million and common stock of \$661 million.

Cash Flow

Our cash flows from operating, investing and financing activities, as reflected in the Consolidated Statement of Cash Flows on page 71 are summarized in the table below. These amounts include the cash flows associated with the Global Financing business.

(\$ in millions)	2020	2019
For the year ended December 31:		
Net cash provided by/(used in) continuing operations		
Operating activities	\$18,197	\$ 14,770
Investing activities	(3,028)	(26,936)
Financing activities	(9,721)	9,042
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(87)	(167)
Net change in cash, cash equivalents and restricted cash	\$ 5,361	\$ (3,290)

Net cash provided by operating activities increased \$3,426 million in 2020 driven by the following key factors:

- An increase of cash provided by receivables of \$4,795 million primarily driven by sales of receivables, including sales of financing receivables of \$3,076 million; and
- Payroll tax and value-added tax payment deferrals and exemptions of approximately \$600 million due to tax relief provided under the U.S. CARES Act and other non-U.S. government assistance programs related to COVID-19; partially offset by
- An increase in workforce rebalancing payments of \$293 million;
- A net increase in cash payments for income taxes of \$162 million primarily driven by withholding tax on intercompany dividends in the second quarter; and
- Performance-related declines within net income.

Net cash used in investing activities decreased \$23,908 million driven by:

- A decrease in net cash used for acquisitions of \$32,294 million due to the Red Hat acquisition in the prior year; partially offset by
- A decrease of \$6,245 million in cash provided by net non-operating finance receivables primarily driven by the wind down of the OEM IT commercial financing operations;
- An increase in cash used for net purchases of marketable securities and other investments of \$896 million;

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- An increase in cash used for net capital expenditures of \$672 million; and
- A decrease in cash provided from divestitures of \$573 million.

Financing activities were a net use of cash of \$9,721 million in 2020 compared to a net source of cash of \$9,042 million in 2019.

The year-to-year change of \$18,763 million was driven by:

- A decrease in net cash provided by debt transactions of \$19,998 million driven primarily by a higher level of net additions in the prior year to fund the Red Hat acquisition; partially offset by
- A decrease in cash used for gross common share repurchases of \$1,361 million.

Global Financing Return on Equity Calculation

(\$ in millions)

At December 31:	2020	2019
Numerator		
Global Financing after-tax income ⁽¹⁾ *	\$ 635	\$ 765
Denominator		
Average Global Financing equity ⁽²⁾ **	\$2,465	\$2,968
Global Financing return on equity ^{(1)/(2)}	25.8 %	25.8 %

* Calculated based upon an estimated tax rate principally based on Global Financing's geographic mix of earnings as IBM's provision for income taxes is determined on a consolidated basis.

** Average of the ending equity for Global Financing for the last five quarters.

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GAAP Reconciliation

The tables below provide a reconciliation of our income statement results as reported under GAAP to our operating earnings presentation which is a non-GAAP measure. Management's calculation of operating (non-GAAP) earnings, as presented, may differ from similarly titled measures reported by other companies. Please refer to the "Operating (non-GAAP) Earnings" section for management's rationale for presenting operating earnings information.

(\$ in millions except per share amounts)

For the year ended December 31, 2020:	GAAP	Acquisition-Related Adjustments	Retirement-Related Adjustments	U.S. Tax Reform Impacts	Spin-off-Related Charges	Operating (non-GAAP)
Gross profit	\$35,575	\$ 732	\$ —	\$ —	\$ 1	\$36,308
Gross profit margin	48.3 %	1.0 pts.	— pts.	— pts.	0.0 pts.	49.3 %
SG&A	\$23,082 *	(\$1,137)	\$ —	\$ —	\$ (28)	\$21,917 *
RD&E	6,333	—	—	—	—	6,333
Other (income) and expense	861	(2)	(1,123)	—	—	(265)
Interest expense	1,288	—	—	—	—	1,288
Total expense and other (income)	30,937 *	(1,139)	(1,123)	—	(28)	28,648 *
Pre-tax income from continuing operations	4,637 *	1,871	1,123	—	28	7,660 *
Pre-tax margin from continuing operations	6.3 %	2.5 pts.	1.5 pts.	— pts.	0.0 pts.	10.4 %
Provision for/(benefit from) income taxes**	\$ (864)	\$ 418	\$ 215	\$ 110	\$ 7	\$ (114)
Effective tax rate	(18.6)%	10.0 pts.	5.5 pts.	1.4 pts.	0.2 pts.	(1.5)%
Income from continuing operations	\$ 5,501 *	\$ 1,454	\$ 908	\$ (110)	\$ 21	\$ 7,774 *
Income margin from continuing operations	7.5 %	2.0 pts.	1.2 pts.	(0.1)pts.	0.0 pts.	10.6 %
Diluted earnings per share from continuing operations	\$ 6.13 *	\$ 1.63	\$ 1.01	(\$0.12)	\$ 0.02	\$ 8.67 *

* Includes a \$2.0 billion pre-tax charge for structural actions in the fourth quarter resulting in an impact of (\$1.84) to diluted earnings per share from continuing operations and diluted operating (non-GAAP) earnings per share.

** The tax impact on operating (non-GAAP) pre-tax income is calculated under the same accounting principles applied to the GAAP pre-tax income which employs an annual effective tax rate method to the results.

(\$ in millions except per share amounts)

For the year ended December 31, 2019:	GAAP	Acquisition-Related Adjustments	Retirement-Related Adjustments	U.S. Tax Reform Impacts	Spin-off-Related Charges	Operating (non-GAAP)
Gross profit	\$36,488	\$ 547	\$ —	\$ —	\$ —	\$37,035
Gross profit margin	47.3 %	0.7 pts.	— pts.	— pts.	— pts.	48.0 %
SG&A	\$20,604	(\$1,044)	\$ —	\$ —	\$ —	\$19,560
RD&E	5,989	(53)	—	—	—	5,936
Other (income) and expense	(968)	152	(615)	—	—	(1,431)
Interest expense	1,344	(228)	—	—	—	1,116
Total expense and other (income)	26,322	(1,173)	(615)	—	—	24,533
Pre-tax income from continuing operations	10,166	1,721	615	—	—	12,503
Pre-tax margin from continuing operations	13.2 %	2.2 pts.	0.8 pts.	— pts.	— pts.	16.2 %
Provision for income taxes*	\$ 731	\$ 378	\$ 103	\$ (146)	\$ —	\$ 1,067
Effective tax rate	7.2 %	2.0 pts.	0.5 pts.	(1.2)pts.	— pts.	8.5 %
Income from continuing operations	\$ 9,435	\$ 1,343	\$ 512	\$ 146	\$ —	\$11,436
Income margin from continuing operations	12.2 %	1.7 pts.	0.7 pts.	0.2 pts.	— pts.	14.8 %
Diluted earnings per share from continuing operations	\$ 10.57	\$ 1.50	\$ 0.58	\$ 0.16	\$ —	\$ 12.81

* The tax impact on operating (non-GAAP) pre-tax income is calculated under the same accounting principles applied to the GAAP pre-tax income which employs an annual effective tax rate method to the results.

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Consolidated Fourth-Quarter Results

(\$ and shares in millions except per share amounts)

	2020	2019	Yr.-to-Yr. Percent/ Margin Change
For the fourth quarter:			
Revenue	\$20,367	\$21,777	(6.5)%*
Gross profit margin	51.7 %	51.0 %	0.7 pts.
Total expense and other (income)	\$ 9,234 **	\$ 7,107	29.9 %
Income from continuing operations before income taxes	\$ 1,289 **	\$ 3,993	(67.7)%
Provision for income taxes from continuing operations	\$ 25	\$ 324	(92.3)%
Income from continuing operations	\$ 1,264 **	\$ 3,669	(65.5)%
Income from continuing operations margin	6.2 %	16.8 %	(10.6)pts.
Income from discontinued operations, net of tax +	\$ 92	\$ 0	NM
Net income	\$ 1,356 **	\$ 3,670	(63.0)%
Earnings per share from continuing operations—assuming dilution	\$ 1.41 **	\$ 4.11	(65.7)%
Weighted-average shares outstanding—assuming dilution	899.0	893.7	0.6 %

* (8.6) percent adjusted for currency; (8.4) percent excluding divested businesses and adjusted for currency.

** Includes a \$2.0 billion pre-tax charge for structural actions resulting in an impact to diluted earnings per share from continuing operations of (\$1.84).

+ Relates to discontinued operations of Microelectronics, divested in 2015.

NM—Not meaningful

The following table provides operating (non-GAAP) earnings for the fourth quarter of 2020 and 2019. See page 52 for additional information.

(\$ in millions except per share amounts)

	2020	2019	Yr.-to-Yr. Percent Change
For the fourth quarter:			
Net income as reported	\$1,356 *	\$3,670	(63.0)%
Income from discontinued operations, net of tax**	92	0	NM
Income from continuing operations	\$1,264 *	\$3,669	(65.5)%
Non-operating adjustments (net of tax)			
Acquisition-related charges	359	376	(4.4)
Non-operating retirement-related costs/(income)	198	175	13.4
U.S. tax reform impacts	18	(14)	NM
Spin-off-related charges	21	—	NM
Operating (non-GAAP) earnings	\$1,861 *	\$4,206	(55.8)%
Diluted operating (non-GAAP) earnings per share	\$ 2.07 *	\$ 4.71	(56.1)%

* Includes a \$2.0 billion pre-tax charge for structural actions resulting in an impact to diluted operating (non-GAAP) earnings per share of (\$1.84).

** Relates to discontinued operations of Microelectronics, divested in 2015.

NM—Not meaningful

Snapshot

In the fourth quarter of 2020, we reported \$20.4 billion in revenue and income from continuing operations of \$1.3 billion, which included a \$2.0 billion pre-tax charge for structural actions (primarily workforce rebalancing) to simplify and optimize our operating model. Fourth quarter operating (non-GAAP) earnings were \$1.9 billion, which also included the charge for workforce rebalancing. Diluted earnings per share from continuing operations was \$1.41 as reported and \$2.07 on an operating (non-GAAP) basis. We generated \$5.9 billion in cash from operations, \$6.1 billion in free cash flow and delivered shareholder returns of \$1.5 billion in dividends. While challenges related to macroeconomic uncertainty and product cycle dynamics continued, our fourth-quarter results reflect strong performance in hybrid cloud led by Red Hat, gross margin expansion and solid cash generation.

Total consolidated revenue decreased 6.5 percent as reported and 9 percent adjusted for currency compared to the prior year. Excluding divested businesses, revenue was down 6.2 percent as reported and 8 percent adjusted for currency. Cloud & Cognitive Software decreased 4.5 percent as reported and 7 percent adjusted for currency. Within this segment, Cloud & Data Platforms grew 8.8 percent (6 percent adjusted for currency) with Red Hat delivering double-digit growth across infrastructure software and application development and emerging technologies. Cognitive Applications increased 0.2 percent as reported but decreased 2 percent adjusted for currency and Transaction Processing Platforms decreased 23.8 percent (26 percent adjusted for currency). GBS decreased 2.7 percent as reported and 5 percent adjusted for currency but improved sequentially from the third quarter. Cloud revenue within GBS grew at a double-digit rate and GPS revenue returned to growth in the fourth quarter. GTS decreased 5.5 percent as reported and 8 percent adjusted for currency, with declines in Infrastructure & Cloud Services and Technology Support Services. Systems decreased 17.8 percent as reported and 19 percent adjusted for currency primarily driven by product cycle dynamics. Across the

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segments, total IBM cloud revenue of \$7.5 billion in the fourth quarter of 2020 grew 10 percent as reported (7 percent adjusted for currency) and 8 percent excluding divested businesses and adjusted for currency.

From a geographic perspective, Americas revenue decreased 10.5 percent year to year as reported (10 percent excluding divested businesses and adjusted for currency). EMEA decreased 3.1 percent (8 percent excluding divested businesses and adjusted for currency). Asia Pacific declined 2.0 percent year to year as reported (5 percent excluding divested businesses and adjusted for currency).

The consolidated gross margin of 51.7 percent increased 0.7 points year to year and the operating (non-GAAP) gross margin of 52.5 percent increased 0.7 points with margin expansion across software, services and systems.

Total expense and other (income) increased 29.9 percent in the fourth quarter of 2020 versus the prior-year period primarily driven by the workforce rebalancing charge, lower gains from divestitures and the impact of currency. These increases were partially offset by lower spending including reduced travel and other expenses associated with COVID-19 restrictions. Total operating (non-GAAP) expense and other (income) increased 30.8 percent year to year, driven primarily by the same factors.

Pre-tax income from continuing operations of \$1.3 billion decreased 67.7 percent and the pre-tax margin was 6.3 percent, a decrease of 12.0 points versus the prior-year period, primarily due to the workforce rebalancing charge. The continuing operations effective tax rate for the fourth quarter of 2020 was 1.9 percent compared to an effective tax rate of 8.1 percent in the fourth quarter of 2019. Net income from continuing operations was \$1.3 billion, a decrease of 65.5 percent year to year. The net income margin from continuing operations was 6.2 percent, a decrease of 10.6 points from the prior-year period.

Operating (non-GAAP) pre-tax income from continuing operations of \$2.1 billion decreased 55.8 percent year to year and the operating (non-GAAP) pre-tax margin from continuing operations decreased 11.4 points to 10.2 percent, primarily due to the workforce rebalancing charge. The operating (non-GAAP) effective tax rate from continuing operations in the fourth quarter of 2020 was 10.4 percent versus 10.5 percent in the prior year. Operating (non-GAAP) income from continuing operations of \$1.9 billion decreased 55.8 percent with an operating (non-GAAP) income margin from continuing operations of 9.1 percent, down 10.2 points year to year.

Diluted earnings per share from continuing operations of \$1.41 in the fourth quarter of 2020 decreased 65.7 percent and operating (non-GAAP) diluted earnings per share of \$2.07 decreased 56.1 percent versus the fourth quarter of 2019.

Segment Details

The following is an analysis of the fourth quarter of 2020 versus the fourth quarter of 2019 reportable segment external revenue and gross margin results. Segment pre-tax income includes transactions between the segments that are intended to reflect an arm's-length transfer price and excludes certain unallocated corporate items.

	(\$ in millions)		Yr.-to-Yr. Percent/ Margin Change	Yr.-to-Yr. Percent Change Adjusted for Currency
For the fourth quarter:	2020	2019		
Revenue				
Cloud & Cognitive Software	\$ 6,837	\$ 7,160 *	(4.5)%	(6.6)%
Gross margin	79.8 %	79.5 %*	0.2 pts.	
Global Business Services	4,170	4,285 *	(2.7)%	(5.2)%
Gross margin	30.1 %	27.6 %*	2.6 pts.	
Global Technology Services	6,568	6,949	(5.5)%	(7.8)%
Gross margin	35.9 %	35.2 %	0.7 pts.	
Systems	2,501	3,042	(17.8)%	(19.4)%
Gross margin	59.9 %	56.0 %	3.8 pts.	
Global Financing	286	301	(4.8)%	(6.0)%
Gross margin	33.8 %	35.6 %	(1.8)pts.	
Other	6	40 *	(84.8)%	(84.1)%
Gross margin	NM	(84.2)%*	NM	
Total consolidated revenue	\$20,367	\$21,777	(6.5)%**	(8.6)%
Total consolidated gross profit	\$10,523	\$11,100	(5.2)%	
Total consolidated gross margin	51.7 %	51.0 %	0.7 pts.	
Non-operating adjustments				
Amortization of acquired intangible assets	177	189	(6.5)%	
Spin-off-related charges	1	—	NM	
Operating (non-GAAP) gross profit	\$10,700	\$11,289	(5.2)%	
Operating (non-GAAP) gross margin	52.5 %	51.8 %	0.7 pts.	

* Recast to reflect segment changes.

** (8.4) percent excluding divested businesses and adjusted for currency.

NM=Not meaningful

Cloud & Cognitive Software

Cloud & Cognitive Software revenue of \$6,837 million decreased 4.5 percent as reported (7 percent adjusted for currency) in the fourth quarter of 2020 compared to the prior year. The year-to-year decline in our software performance reflects the continued challenging transactional environment due to the macroeconomic environment in the fourth quarter of 2020. Since the fourth quarter is seasonally our largest transactional quarter, this was more impactful than in other quarters in 2020. Additionally, we had strong software performance in the fourth quarter of 2019, the peak in our enterprise license agreement (ELA) cycle, where clients renew, on average, about every three years. With the uncertainty our clients are facing in the current environment, many clients opted for shorter duration ELAs. This dynamic, in combination with the large seasonal volume of ELAs in the fourth quarter, impacted our software revenue performance. We had strong year-to-year renewal rates for subscription and support in the fourth-quarter 2020, reflecting our clients' commitment to our critical software solutions. We had solid growth in Cloud & Data Platforms led by Red Hat's continued strong performance. Cognitive Applications grew slightly as reported, but declined adjusted for currency. Transaction Processing Platforms declined as reported and adjusted for currency. We had double-digit growth in total cloud revenue within the segment as reported and adjusted for currency.

In the fourth quarter, Cloud & Data Platforms revenue of \$3,373 million increased 8.8 percent as reported (6 percent adjusted for currency) compared to the prior year, reflecting clients' adoption of our hybrid cloud and AI solutions, including Red Hat and Cloud Paks. Red Hat continued its strong performance with double-digit revenue growth in the fourth quarter, driven by subscription growth. Red Hat's strong growth was driven by offerings in infrastructure software and application development and emerging technologies. We are expanding our integration offerings, bringing AI-powered automation across the portfolio through key partnerships and new innovation. We continued to enhance Cloud Pak for Automation, which grew at a strong double-digit rate in the fourth quarter of 2020.

Cognitive Applications revenue of \$1,545 million grew 0.2 percent year to year as reported, but declined 2 percent adjusted for currency, with growth in security. The growth in security reflects clients' interest in our modernized Cloud Pak for Security and services. We had declining performance in solutions concentrated in industries impacted more severely by the current environment, such as TRIRIGA, which is focused on commercial real estate.

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Transaction Processing Platforms revenue of \$1,919 million decreased 23.8 percent as reported (26 percent adjusted for currency) reflecting our clients' prioritization of operating expenditures over capital expenditures, which was amplified this quarter, given our strong seasonal mix toward transactional revenue and the ELA dynamics in the fourth-quarter 2020 compared to the prior-year period.

Within Cloud & Cognitive Software, total cloud revenue of \$2.2 billion grew 39 percent as reported (36 percent adjusted for currency), which reflects our clients' demand for our hybrid cloud and AI solutions.

Cloud & Cognitive Software gross profit margin of 79.8 percent increased 0.2 points during the fourth quarter of 2020 compared to the prior year. Pre-tax income of \$1,887 million decreased 30.8 percent compared to the prior year and pre-tax margin decreased 9.8 points to 24.9 percent, driven primarily by the workforce rebalancing charge taken in the fourth-quarter 2020, which had 8.2 points of impact on the pre-tax margin.

Global Business Services

GBS revenue of \$4,170 million decreased 2.7 percent as reported (5 percent adjusted for currency) in the fourth quarter of 2020 compared to the prior year, but reflects a sequential year-to-year improvement versus the third-quarter 2020. Total cloud revenue within the segment grew at a double-digit rate year to year, and Global Process Services revenue returned to growth in the fourth-quarter 2020. This growth was offset by declines in Application Management and Consulting. While there remains some market uncertainty, especially in industries more severely impacted by the current environment, our clients are focused on accelerating their digital reinventions by leveraging business transformation services built on hybrid cloud. Our offerings are aligned to this high-value opportunity with a clear focus on reimagining workflows using AI and modernizing the underlying application infrastructures through hybrid cloud.

Consulting revenue of \$2,110 million decreased 0.4 percent as reported (3 percent adjusted for currency). We had continued growth in Cloud Application Development, DevOps and Cloud services such as SAP S/4HANA implementations, offset by declines in on-premise engagements. Consulting signings grew 11 percent as reported (8 percent adjusted for currency) driven by advisory work for application modernization and enabled by our unique and experiential Garage methodology.

Application Management revenue of \$1,801 million decreased 6.3 percent as reported (9 percent adjusted for currency), reflecting a continued shift away from traditional on-premise application management services to building and managing our clients' cloud applications. Our incumbency in Application Management creates an opportunity, and trust, with our clients to be the partner of choice for their digital journey. This incumbency also drives adoption of Red Hat's hybrid cloud platform. In 2020, our GBS Red Hat engagements accelerated through the year, with 75 new engagements in the fourth quarter. We are continuing this momentum by investing in ecosystems, resources, offerings and skills, and through the acquisitions announced in the fourth-quarter 2020 which will add to our offerings in areas such as cloud development, cloud migration, platform engineering and digital transformation.

Global Process Services (GPS) revenue of \$258 million increased 6.2 percent as reported (4 percent adjusted for currency). GPS returned to revenue growth in the fourth-quarter 2020, as we delivered efficiency and flexibility to our clients' processes through innovative technology and redesign of workflows.

Within GBS, cloud revenue of \$1.7 billion grew 16 percent as reported (14 percent adjusted for currency) year to year.

GBS fourth-quarter gross profit margin of 30.1 percent increased 2.6 points year to year. Pre-tax income of \$148 million decreased 68.5 percent year to year and the pre-tax margin decreased 7.3 points to 3.5 percent. The gross profit margin expansion was driven primarily by improved delivery quality resulting from our investment in innovative delivery capabilities. The decline in pre-tax income and margin reflects the workforce rebalancing charge taken in the fourth quarter of 2020, which had 8.8 points of impact on the pre-tax margin.

Global Technology Services

GTS revenue of \$6,568 million decreased 5.5 percent as reported (8 percent adjusted for currency). In the fourth quarter, Infrastructure & Cloud Services revenue declined as reported and adjusted for currency. We had strong growth in cloud revenue, which was offset by a decline in client business volumes. Technology Support Services revenue declined as reported and adjusted for currency due to Systems' product cycle dynamics.

Infrastructure & Cloud Services revenue of \$5,006 million decreased 5.2 percent as reported (8 percent adjusted for currency). We continued to prioritize high-value opportunities and rescope contracts with our clients to provide long-term value. While these actions impacted our revenue performance this quarter, they contributed to improved gross margin. We had strong contract renewals in the fourth quarter and signed eleven new logo deals. This was one of the strongest new logo signings periods in the last two years and more than doubled the number signed in the fourth quarter of 2019. However, with our announcement in October 2020 of the spin-off of our managed infrastructure services business, some client negotiations were extended, resulting in the delay of some transactions in the fourth quarter. We are working with our clients to ensure a smooth transition to NewCo after the separation and the positive

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response we have received from our client outreach demonstrates the confidence our clients have in NewCo's long-term value proposition to manage and modernize their mission-critical infrastructures.

Technology Support Services revenue of \$1,562 million declined 6.3 percent as reported (7 percent adjusted for currency), driven primarily by lower services due to Systems product cycles and lower volumes due to hardware consolidation and shift to cloud.

Within GTS, cloud revenue of \$2.5 billion grew 4 percent year to year as reported (1 percent adjusted for currency).

GTS gross profit margin of 35.9 percent improved 0.7 points in the fourth quarter of 2020 compared to the prior-year period. This improvement was driven by the restructuring of certain existing contracts and reduced activity in lower value offerings. GTS reported a pre-tax loss of \$353 million in the fourth quarter of 2020 compared to pre-tax income of \$645 million in the prior-year period. The pre-tax margin decreased 14.1 points year to year to (5.1) percent. The pre-tax loss and decline in pre-tax margin reflect the workforce rebalancing charge taken in the fourth quarter of 2020, which had 12.5 points of impact on the pre-tax margin. Through these workforce rebalancing actions, we are optimizing the NewCo business to have a leaner and more efficient operating model.

Systems

Systems revenue of \$2,501 million decreased 17.8 percent as reported (19 percent adjusted for currency) in the fourth quarter of 2020 compared to the same period in 2019. Systems Hardware revenue of \$2,077 million decreased 18.8 percent as reported (20 percent adjusted for currency), driven by product cycle dynamics in IBM Z, Power Systems and Storage Systems.

Within Systems Hardware, IBM Z revenue decreased 22.9 percent year to year as reported (24 percent adjusted for currency), compared to the fourth quarter of 2019, which was the first full quarter of shipments of the z15 mainframe. Clients in sectors such as banking and financial markets made purchases early in the cycle to manage through robust market volatility. However, clients in some other industries, focused on cash preservation due to the current macroeconomic environment, delayed their purchases elongating the z15 adoption cycle. Our fourth-quarter 2020 performance reflected improved adoption of z15 in some of these industries.

Power Systems revenue declined 14.5 percent as reported (16 percent adjusted for currency) in the fourth-quarter 2020 compared to the prior-year period, driven primarily by declines in low-end and high-end systems reflecting the product cycles.

Storage Systems revenue decreased 14.9 percent as reported (17 percent adjusted for currency), driven primarily by declines in high-end storage systems, partially offset by growth in SAN. In the fourth-quarter 2019, we launched the DS8900 high-end system that is tightly integrated with the z15 mainframe, which drove strong performance in the prior-year period.

In the fourth quarter, Operating Systems Software revenue of \$423 million decreased 12.1 percent as reported (14 percent adjusted for currency) driven primarily by the IBM Z and Power Systems product cycles.

Within Systems, cloud revenue of \$1.1 billion decreased 18 percent as reported (19 percent adjusted for currency) in the fourth quarter of 2020 compared to the same period in 2019.

The Systems gross profit margin increased 3.8 points to 59.9 percent in the fourth-quarter 2020 compared to the prior year. Pre-tax income of \$455 million decreased 43.2 percent and the pre-tax margin decreased 7.9 points year to year to 16.9 percent. The gross profit margin expansion was driven primarily by improvements in IBM Z and Power Systems margins, partially offset by a mix within the hardware portfolio. The decline in pre-tax income and margin reflects the workforce rebalancing charge taken in the fourth-quarter 2020, which had 6.0 points of impact on the pre-tax margin.

Global Financing

Global Financing revenue of \$286 million decreased 4.8 percent year to year, primarily driven by declines in financing revenue partially offset by an increase in used equipment sales. Global Financing fourth-quarter pre-tax income decreased 22.6 percent to \$195 million and the pre-tax margin of 37.6 percent decreased 1.3 points year to year. The decrease in pre-tax income was driven by a decrease in gross profit.

Geographic Revenue

Total revenue of \$20,367 million decreased 6.5 percent as reported (9 percent adjusted for currency and 8 percent excluding divested businesses and adjusted for currency) in the fourth quarter compared to the prior-year period.

Americas revenue of \$9,358 million decreased 10.5 percent as reported (10 percent adjusted for currency and excluding divested businesses and adjusted for currency). Within North America, revenue in the U.S. decreased 10.0 percent and Canada decreased 9.8 percent as reported (11 percent adjusted for currency). Latin America decreased 14.7 percent as reported (8 percent adjusted for currency). Within Latin America, Brazil decreased 24.1 percent as reported (13 percent adjusted for currency).

EMEA revenue of \$6,869 million decreased 3.1 percent as reported (9 percent adjusted for currency and 8 percent excluding divested businesses and adjusted for currency). As reported, France, Italy and Germany decreased 10.2 percent, 3.6 percent and 2.7 percent, respectively, and declined 17 percent, 11 percent and 10 percent, respectively, adjusted for currency. In the UK, revenue was flat as reported, but declined 2 percent adjusted for currency.

Asia Pacific revenue of \$4,140 million decreased 2.0 percent as reported (6 percent adjusted for currency and 5 percent excluding divested businesses and adjusted for currency). Japan increased 0.5 percent as reported, but declined 3 percent adjusted for currency. As reported, India and China decreased 18.0 percent and 9.2 percent, respectively, and declined 15 percent and 13 percent, respectively, adjusted for currency. Australia increased 8.4 percent as reported (1 percent adjusted for currency).

Total Expense and Other (Income)

(\$ in millions)

	2020	2019	Yr.-to-Yr. Percent/ Margin Change
For the fourth quarter:			
Total consolidated expense and other (income)	\$9,234 *	\$7,107	29.9 %
Non-operating adjustments			
Amortization of acquired intangible assets	(278)	(294)	(5.4)
Acquisition-related charges	(10)	(27)	(61.6)
Non-operating retirement-related (costs)/income	(295)	(196)	50.4
Spin-off-related charges	(28)	—	NM
Operating (non-GAAP) expense and other (income)	\$8,623 *	\$6,591	30.8 %
Total consolidated expense-to-revenue ratio	45.3 %	32.6 %	12.7 pts.
Operating (non-GAAP) expense-to-revenue ratio	42.3 %	30.3 %	12.1 pts.

* Includes a \$2.0 billion pre-tax charge for structural actions.

NM—Not meaningful

Total expense and other (income) increased 29.9 percent in the fourth quarter with an expense-to-revenue ratio of 45.3 percent compared to 32.6 percent in the fourth quarter of 2019. The year-to-year increase was primarily driven by the fourth-quarter charge for workforce rebalancing (28 points), lower gains from divestitures (3 points) and the impact of currency (3 points), partially offset by lower spending (4 points) including reduced travel and other expenses associated with COVID-19 restrictions.

Total operating (non-GAAP) expense and other income increased 30.8 percent year to year primarily driven by the same factors described above.

Cash Flow

We generated \$5.9 billion in cash flow from operating activities in the fourth quarter of 2020, an increase of \$2.4 billion compared to the fourth quarter of 2019, primarily driven by sales of financing receivables of \$1.5 billion. Net cash used in investing activities of \$0.6 billion was \$0.7 billion higher than the prior year, primarily driven by an increase in cash used in acquisitions (\$0.3 billion) and lower cash provided by divestitures (\$0.2 billion). Net cash used in financing activities of \$6.3 billion increased \$0.6 billion compared to the prior year, primarily due to higher net reductions in debt.

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GAAP Reconciliation

The tables below provide a reconciliation of our income statement results as reported under GAAP to our operating earnings presentation which is a non-GAAP measure. Management's calculation of operating (non-GAAP) earnings, as presented, may differ from similarly titled measures reported by other companies. Refer to the "Operating (non-GAAP) Earnings" section for management's rationale for presenting operating earnings information.

(\$ in millions except per share amounts)

For the fourth quarter 2020:	GAAP	Acquisition-Related Adjustments	Retirement-Related Adjustments	U.S. Tax Reform Impacts	Spin-off-Related Charges	Operating (non-GAAP)
Gross profit	\$10,523	\$ 177	\$ —	\$ —	\$ 1	\$10,700
Gross profit margin	51.7 %	0.9 pts.	— pts.	— pts.	0.0 pts.	52.5 %
SG&A	\$ 7,232 *	(\$287)	\$ —	\$ —	\$ (28)	\$ 6,917 *
RD&E	1,611	—	—	—	—	1,611
Other (income) and expense	247	(1)	(295)	—	—	(48)
Interest expense	317	—	—	—	—	317
Total expense and other (income)	9,234 *	(288)	(295)	—	(28)	8,623 *
Pre-tax income from continuing operations	1,289 *	465	295	—	28	2,077 *
Pre-tax margin from continuing operations	6.3 %	2.3 pts.	1.4 pts.	— pts.	0.1 pts.	10.2 %
Provision for income taxes**	\$ 25	\$ 105	\$ 96	\$ (18)	\$ 7	\$ 216
Effective tax rate	1.9 %	4.6 pts.	4.4 pts.	(0.9)pts.	0.3 pts.	10.4 %
Income from continuing operations	\$ 1,264 *	\$ 359	\$ 198	\$ 18	\$ 21	\$ 1,861 *
Income margin from continuing operations	6.2 %	1.8 pts.	1.0 pts.	0.1 pts.	0.1 pts.	9.1 %
Diluted earnings per share from continuing operations	\$ 1.41 *	\$ 0.40	\$ 0.22	\$ 0.02	\$ 0.02	\$ 2.07 *

* Includes a \$2.0 billion pre-tax charge for structural actions resulting in an impact of (\$1.84) to diluted earnings per share from continuing operations and diluted operating (non-GAAP) earnings per share.

** The tax impact on operating (non-GAAP) pre-tax income from continuing operations is calculated under the same accounting principles applied to the GAAP pre-tax income which employs an annual effective tax rate method to the results.

(\$ in millions except per share amounts)

For the fourth quarter 2019:	GAAP	Acquisition-Related Adjustments	Retirement-Related Adjustments	U.S. Tax Reform Impacts	Spin-off-Related Charges	Operating (non-GAAP)
Gross profit	\$11,100	\$ 189	\$ —	\$ —	\$ —	\$11,289
Gross profit margin	51.0 %	0.9 pts.	— pts.	— pts.	— pts.	51.8 %
SG&A	\$ 5,433	(\$320)	\$ —	\$ —	\$ —	\$ 5,113
RD&E	1,596	0	—	—	—	1,596
Other (income) and expense	(117)	(1)	(196)	—	—	(314)
Interest expense	354	—	—	—	—	354
Total expense and other (income)	7,107	(320)	(196)	—	—	6,591
Pre-tax income from continuing operations	3,993	509	196	—	—	4,698
Pre-tax margin from continuing operations	18.3 %	2.3 pts.	0.9 pts.	— pts.	— pts.	21.6 %
Provision for income taxes*	\$ 324	\$ 133	\$ 21	\$ 14	\$ —	\$ 492
Effective tax rate	8.1 %	2.0 pts.	0.1 pts.	0.3 pts.	— pts.	10.5 %
Income from continuing operations	\$ 3,669	\$ 376	\$ 175	\$ (14)	\$ —	\$ 4,206
Income margin from continuing operations	16.8 %	1.7 pts.	0.8 pts.	(0.1)pts.	— pts.	19.3 %
Diluted earnings per share from continuing operations	\$ 4.11	\$ 0.42	\$ 0.20	\$ (0.02)	\$ —	\$ 4.71

* The tax impact on operating (non-GAAP) pre-tax income from continuing operations is calculated under the same accounting principles applied to the GAAP pre-tax income which employs an annual effective tax rate method to the results.

PRIOR YEAR IN REVIEW

This section provides a summary of our segment results and year-to-year comparisons between 2019 and 2018. These results have been recast to conform to our segment changes effective first-quarter 2020 which impacted the Cloud & Cognitive Software segment, Global Business Services segment and the Other—divested businesses category. The recast results of those segments impacted are presented below. There was no change to Global Technology Services, Systems or Global Financing segments, and there was no change to our consolidated results. Refer to “Year in Review” pages 34 to 46 of the “Management Discussion” section of our 2019 Annual Report for all other details of our financial performance in 2019 compared to 2018.

Segment Details

The table below presents each reportable segment’s external revenue and gross margin results. Segment pre-tax income includes transactions between segments that are intended to reflect an arm’s-length transfer price and excludes certain unallocated corporate items.

(\$ in millions)

For the year ended December 31:	2019	2018	Yr.-to-Yr. Percent/ Margin Change	Yr.-to-Yr. Percent Change Adjusted for Currency
Revenue				
Cloud & Cognitive Software	\$22,891 *	\$21,857 *	4.7 %**	6.5 %
Gross margin	77.1 %*	78.1 %*	(1.0)pts.**	
Global Business Services	16,798 *	16,795 *	0.0 %	2.2 %
Gross margin	27.7 %*	26.9 %*	0.8 pts.	
Global Technology Services	27,361	29,146	(6.1)%	(3.7)%
Gross margin	34.8 %	34.4 %	0.3 pts.	
Systems	7,604	8,034	(5.3)%	(4.1)%
Gross margin	53.1 %	49.8 %	3.2 pts.	
Global Financing	1,400	1,590	(11.9)%	(10.0)%
Gross margin	35.6 %	29.1 %	6.4 pts.	
Other	1,092 *	2,169 *	(49.6)%	(48.3)%
Gross margin	12.5 %*	39.1 %*	(26.6)pts.	
Total consolidated revenue	\$77,147	\$79,591	(3.1)%⁺	(1.0)%
Total consolidated gross profit	\$36,488	\$36,936	(1.2)%	
Total consolidated gross margin	47.3 %	46.4 %	0.9 pts.	
Non-operating adjustments				
Amortization of acquired intangible assets	534	372	43.8 %	
Acquisition-related charges	13	—	NM	
Operating (non-GAAP) gross profit	\$37,035	\$37,307	(0.7)%	
Operating (non-GAAP) gross margin	48.0 %	46.9 %	1.1 pts.	

* Recast to reflect segment changes.

** 2019 results were impacted by Red Hat purchase accounting and acquisition-related activity.

+ 0.2 percent excluding divested businesses and currency.

NM—Not meaningful

Cloud & Cognitive Software

(\$ in millions)

For the year ended December 31:	2019	2018	Yr.-to-Yr. Percent Change **	Percent Change Adjusted for Currency **
Cloud & Cognitive Software external revenue	\$22,891 *	\$21,857 *	4.7 %	6.5 %
Cloud & Data Platforms	\$ 9,499	\$ 8,603	10.4 %	12.3 %
Cognitive Applications	5,456 *	5,280 *	3.3	4.8
Transaction Processing Platforms	7,936	7,974	(0.5)	1.4

* Recast to reflect segment changes.

** 2019 results were impacted by Red Hat purchase accounting.

Cloud & Cognitive Software revenue increased in 2019 compared to the prior year with strong results from the contribution of Red Hat beginning in the third quarter. Cloud & Data Platforms, which includes Red Hat, had strong double-digit growth as reported and adjusted for currency driven by the addition of RHEL and OpenShift and the continued execution of the combined Red Hat and IBM hybrid cloud strategy. Within Cognitive Applications, the increase was driven by growth in Security and industry verticals such as IoT. Transaction Processing Platforms declined year to year as reported, but grew adjusted for currency with performance reflecting the ongoing investment in IBM platforms and the timing of larger transactions that were tied to client business volumes and buying cycles. Within

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Cloud & Cognitive Software, cloud revenue of \$4.2 billion grew 40 percent as reported and 42 percent adjusted for currency compared to the prior year.

	(\$ in millions)		Yr.-to-Yr. Percent/ Margin Change **
For the year ended December 31:	2019 *	2018 *	
Cloud & Cognitive Software			
External gross profit	\$17,650	\$17,068	3.4 %
External gross profit margin	77.1 %	78.1 %	(1.0)pts.
Pre-tax income	\$ 7,811	\$ 8,914	(12.4)%
Pre-tax margin	30.4 %	35.6 %	(5.2)pts.

* Recast to reflect segment changes.

** 2019 results were impacted by Red Hat purchase accounting and acquisition-related activity.

The Cloud & Cognitive Software gross profit margin decline was driven by the purchase price accounting impacts from the Red Hat acquisition. The decline in pre-tax income reflected the acquisition of Red Hat, ongoing investments in key strategic areas and lower income from IP partnership agreements.

Global Business Services

	(\$ in millions)		Yr.-to-Yr. Percent Change	Percent Change Adjusted for Currency
For the year ended December 31:	2019	2018		
Global Business Services external revenue	\$16,798 *	\$16,795 *	0.0 %	2.2 %
Consulting	\$ 8,157 *	\$ 7,906 *	3.2 %	5.1 %
Application Management	7,646	7,852	(2.6)	(0.3)
Global Process Services	995	1,037	(4.1)	(1.3)

* Recast to reflect segment changes.

GBS revenue was flat as reported, but grew adjusted for currency in 2019 compared to the prior year. This performance was driven by strong growth in Consulting led by offerings that enabled each phase of our clients' digital journey. These offerings included cognitive technology and data platform services, application modernization and next-generation enterprise applications and offerings that use AI to help clients unlock new opportunities and realize productivity improvements. Application Management declined as reported, but was flat adjusted for currency. We had growth in offerings that help clients develop and manage cloud applications and modernize and automate their application portfolio, offset by continued decline in the more traditional application management engagements. GPS revenue decreased year to year as demand shifted away from traditional Business Process Outsourcing (BPO) offerings to new business platforms around intelligent workflows. Within GBS, cloud revenue of \$5.2 billion grew 10 percent as reported and 13 percent adjusted for currency compared to the prior year.

	(\$ in millions)		Yr.-to-Yr. Percent/ Margin Change
For the year ended December 31:	2019 *	2018 *	
Global Business Services			
External gross profit	\$4,655	\$4,519	3.0 %
External gross profit margin	27.7 %	26.9 %	0.8 pts.
Pre-tax income	\$1,623	\$1,602	1.3 %
Pre-tax margin	9.5 %	9.4 %	0.1 pts.

* Recast to reflect segment changes.

The year-to-year improvements in margins and pre-tax income in GBS were driven by the continued mix shift to higher-value offerings, the yield from delivery productivity improvements and a currency benefit from leveraging the global delivery resource model. We continued to invest in our services offerings and skills necessary to assist our clients on their cloud journey.

GAAP Reconciliation

The following table provides a reconciliation of our consolidated gross profit and gross margin as reported under GAAP to our operating earnings presentation which is a non-GAAP measure. Management's calculation of operating (non-GAAP) earnings, as presented, may

differ from similarly titled measures reported by other companies. Refer to the “Operating (non-GAAP) Earnings” section for management’s rationale for presenting operating earnings information.

(\$ in millions)		Acquisition- Related Adjustments	Operating (non-GAAP)
For the year ended December 31:	GAAP		
2019			
Gross profit	\$36,488	\$547	\$37,035
Gross profit margin	47.3 %	0.7 pts.	48.0 %
2018			
Gross profit	\$36,936	\$372	\$37,307
Gross profit margin	46.4 %	0.5 pts.	46.9 %

OTHER INFORMATION

Looking Forward

IBM is redefining our future as a hybrid cloud platform and AI company. To accelerate our strategy, we have taken a number of actions that span our portfolio, our operating model and our capital structure.

On October 8, 2020, we announced our plan to separate the managed infrastructure services unit of our GTS segment into a new public company, currently referred to as NewCo. The separation is expected to be achieved through a U.S. federal tax-free spin-off to IBM shareholders and be completed by the end of 2021. This creates two industry-leading companies, each with strategic focus and flexibility to capitalize on their respective missions and drive client and shareholder value. Client buying needs for application and infrastructure services are diverging, while adoption of our hybrid cloud platform is accelerating. This change in clients’ needs makes it the right time to create two market-leading companies focused on what they do best. IBM will accelerate our open hybrid cloud platform growth strategy and AI capabilities to drive clients’ digital transformations. NewCo will design, run and modernize the infrastructure of the world’s most important organizations. Both IBM and NewCo will have greater agility to focus on their operating and financial models, have more freedom to partner with others and both will align their investments and capital structure to their strategic focus areas. We remain on track to complete the separation by the end of 2021.

IBM’s focus will be on our open hybrid cloud platform, which represents a \$1 trillion market opportunity. We are unlocking the full value of the cloud for clients, further accelerating their digital transformations and adoption of the platform. This platform facilitates the deployment of powerful AI capabilities to enable the power of data, application modernization services and systems. These are all underpinned by the security, unmatched expertise in industry verticals, and deep commitment to open source innovation that clients expect from us. Our approach is platform-centric and differentiated by Red Hat OpenShift, our market-leading open platform, along with a vast software portfolio modernized to run cloud-native and our GBS expertise that drives platform adoption. This platform allows clients to “write-once/run-anywhere,” and enables a hybrid cloud approach that drives up to 2.5 times more value for clients than a public cloud-only solution. Our unique full-stack capabilities and the large ecosystem of partners and global coalition of best of breed independent software vendors we have brought together should accelerate adoption of our platform. Our software portfolio, focused on data and AI, automation, and security, enables the widest access to innovation through open source. Our business, strategy and technology consultants help clients transform by modernizing their existing applications, and by building new AI-infused data analysis capabilities on the leading open hybrid cloud platform. The secure, mission-critical IBM public cloud is designed to provide all required regulatory controls, and offers clients a foundation of open source software, security leadership, and enterprise-grade infrastructure. Our Systems business, integrated with the hybrid cloud platform, allows cloud-native developers to capitalize on the unique capabilities of our hardware. Leveraging our long-term relationships with clients, we will continue to drive the innovation in hardware that enterprises rely on for their most mission-critical computing needs.

NewCo will immediately be the world’s leading managed infrastructure services provider, focused on managing and modernizing client IT environments, a \$500 billion market opportunity. It will leverage its unrivaled expertise to offer services and solutions that include resiliency, security and network capabilities to enable high performance of mission-critical systems and services to help clients in their transformation journeys. NewCo will extend its leadership through increased investment in the next generation of transformational managed infrastructure services and be able to partner fully across all cloud vendors, opening new avenues for growth. At the same time, NewCo will maintain a strong strategic partnership with IBM and continue to serve existing and new clients.

We are increasing our investment, both organic and inorganic, in innovation, expertise and ecosystems to drive value through greater focus on our portfolio, our operating model and the needs of our clients. We are investing in platform capabilities, including security and industry-specific clouds. We are continuing to make investments in data and AI, and in technologies like quantum to create future market opportunities, while adding GBS skills and expertise to bring these innovations to market. We announced a new go-to-market model in January 2021 to engage our clients in a more technical and experiential way and we are investing \$1 billion to expand our ecosystem to broaden our reach and accelerate our platform adoption.

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We have also taken actions to enhance our balance sheet strength and liquidity. At December 31, 2020, we had over \$14 billion of cash, restricted cash and cash equivalents. We have focused our Global Financing business on IBM's hybrid cloud and AI offerings. We wound down our OEM Commercial Financing business and entered into an agreement to sell our IBM commercial financing receivables beginning in December 2020. Consistent with our refocused Global Financing strategy and expected capital needs, IBM Credit will no longer require direct access to the public capital markets. As part of IBM's overall 2021 debt pay down strategy, in the first half of the year IBM Credit will redeem \$1.75 billion of outstanding debt and deregister with the SEC.

Looking forward, there is tremendous opportunity for us to help our clients become digital businesses. We continue to take prudent actions to improve our operating model and accelerate our strategic priorities. We are managing for the long-term and are confident in the direction and focus of our business. We expect to continue our progress as a leading hybrid cloud and AI company with an improving financial profile while maintaining our solid and modestly growing dividend policy.

Our pension plans are well funded. Contributions for all retirement-related plans are expected to be approximately \$2.3 billion in 2021, an increase of approximately \$100 million compared to 2020, of which \$0.3 billion generally relates to legally required contributions to non-U.S. defined benefit and multi-employer plans. We expect 2021 pre-tax retirement-related plan cost to be approximately \$2.9 billion, an increase of approximately \$300 million compared to 2020. This estimate reflects current pension plan assumptions at December 31, 2020. Within total retirement-related plan cost, operating retirement-related plan cost is expected to be approximately \$1.5 billion, approximately flat versus 2020. Non-operating retirement-related plan cost is expected to be approximately \$1.4 billion, an increase of approximately \$300 million compared to 2020, primarily driven by lower income from expected return on assets.

Liquidity and Capital Resources

The company has consistently generated strong cash flow from operations, providing a source of funds ranging between \$14.8 billion and \$18.2 billion per year over the past three years. The company provides for additional liquidity through several sources: maintaining an adequate cash balance, access to global funding sources, committed global credit facilities and other committed and uncommitted lines of credit worldwide. The following table provides a summary of the major sources of liquidity for the years ended December 31, 2018 through 2020.

Cash Flow and Liquidity Trends

(\$ in billions)

	2020	2019	2018
Net cash from operating activities	\$18.2	\$14.8	\$15.2
Cash and cash equivalents, restricted cash and short-term marketable securities	\$14.3	\$ 9.0	\$12.2
Committed global credit facilities	\$15.3	\$15.3	\$15.3

On July 9, 2019, we closed the acquisition of Red Hat for cash consideration of \$34.8 billion. The transaction was funded through a combination of cash on hand and proceeds from debt issuances. In order to reduce this debt and return to target leverage ratios within a couple of years, we suspended our share repurchase program at the time of the Red Hat acquisition closing. Refer to note P, "Borrowings," for additional details of financing this transaction.

The indenture governing our debt securities and our various credit facilities each contain significant covenants which obligate the company to promptly pay principal and interest, limit the aggregate amount of secured indebtedness and sale and leaseback transactions to 10 percent of IBM's consolidated net tangible assets, and restrict our ability to merge or consolidate unless certain conditions are met. The credit facilities also include a covenant on our consolidated net interest expense ratio, which cannot be less than 2.20 to 1.0, as well as a cross default provision with respect to other defaulted indebtedness of at least \$500 million.

We are in compliance with all of our significant debt covenants and provide periodic certification to our lenders. The failure to comply with debt covenants could constitute an event of default with respect to our debt to which such provisions apply. If certain events of default were to occur, the principal and interest on the debt to which such event of default applied would become immediately due and payable.

We do not have "ratings trigger" provisions in our debt covenants or documentation, which would allow the holders to declare an event of default and seek to accelerate payments thereunder in the event of a change in credit rating. Our contractual agreements governing derivative instruments contain standard market clauses which can trigger the termination of the agreement if IBM's credit rating were to fall below investment grade. At December 31, 2020, the fair value of those instruments that were in a liability position was \$627 million, before any applicable netting, and this position is subject to fluctuations in fair value period to period based on the level of the company's outstanding instruments and market conditions. We have no other contractual arrangements that, in the event of a change in credit rating, would result in a material adverse effect on our financial position or liquidity.

The major ratings agencies ratings on our debt securities at December 31, 2020 were as follows:

IBM and IBM Credit LLC Ratings	Standard and Poor's	Moody's Investors Service
Senior long-term debt	A	A2
Commercial paper	A-1	Prime-1

IBM has ample financial flexibility, supported by our strong liquidity position and cash flows, to operate at a single A credit rating. Debt levels have decreased \$11.5 billion from our peak levels at June 30, 2019 (immediately preceding the Red Hat acquisition) and we will continue to deleverage throughout 2021 utilizing our debt maturities schedule.

In July 2017, the UK's Financial Conduct Authority, which regulates the London Interbank Offered Rate (LIBOR), announced that it intends to phase out LIBOR by the end of 2021. Various central bank committees and working groups continue to discuss replacement of benchmark rates, the process for amending existing LIBOR-based contracts, and the potential economic impacts of different alternatives. The Alternative Reference Rates Committee has identified the Secured Overnight Financing Rate (SOFR) as its preferred alternative rate for USD LIBOR. SOFR is a measure of the cost of borrowing cash overnight, collateralized by U.S. Treasury securities, and is based on directly observable U.S. Treasury-backed repurchase transactions. We are continuing to evaluate the potential impact of the replacement of the LIBOR benchmark interest rate, including risk management, internal operational readiness and monitoring the FASB standard-setting process to address financial reporting issues that might arise in connection with transition from LIBOR to a new benchmark rate. However, it is not expected to have a material impact in the consolidated financial results.

We prepare our Consolidated Statement of Cash Flows in accordance with applicable accounting standards for cash flow presentation on page 71 and highlight causes and events underlying sources and uses of cash in that format on pages 43 to 44. For the purpose of running its business, IBM manages, monitors and analyzes cash flows in a different format.

Management uses free cash flow as a measure to evaluate its operating results, plan share repurchase levels, strategic investments and assess its ability and need to incur and service debt. The entire free cash flow amount is not necessarily available for discretionary expenditures. We define free cash flow as net cash from operating activities less the change in Global Financing receivables and net capital expenditures, including the investment in software. A key objective of the Global Financing business is to generate strong returns on equity, and our Global Financing receivables are the basis for that growth. Accordingly, management considers Global Financing receivables as a profit-generating investment, not as working capital that should be minimized for efficiency. Therefore, management includes presentations of both free cash flow and net cash from operating activities that exclude the effect of Global Financing receivables. Free cash flow guidance is derived using an estimate of profit, working capital and operational cash flows. Since we view Global Financing receivables as a profit-generating investment, which we seek to maximize, it is not considered when formulating guidance for free cash flow. As a result, we do not estimate a GAAP Net Cash from Operations expectation metric.

From the perspective of how management views cash flow, in 2020, after investing \$3.0 billion in capital investments, primarily to scale our cloud infrastructure, we generated free cash flow of \$10.8 billion which was down \$1.1 billion compared to 2019. Year to year, there were higher capital expenditures and workforce rebalancing payments from previous actions, offset by improvements in sales cycle working capital and contribution from Red Hat, net of related interest. In 2020, we continued to return value to shareholders including \$5.8 billion in dividends.

IBM's Board of Directors considers the dividend payment on a quarterly basis. In the second quarter of 2020, the Board of Directors increased the company's quarterly common stock dividend from \$1.62 to \$1.63 per share.

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The table below represents the way in which management reviews cash flow as previously described.

(\$ in billions)	2020	2019	2018
For the year ended December 31:			
Net cash from operating activities per GAAP	\$18.2	\$ 14.8	\$15.2
Less: the change in Global Financing receivables	4.3	0.5	(0.3)
Net cash from operating activities, excluding Global Financing receivables	13.8	14.3	15.6
Capital expenditures, net	(3.0)	(2.4)	(3.7)
Free cash flow (FCF)	10.8	11.9	11.9
Acquisitions	(0.3)	(32.6)	(0.1)
Divestitures	0.5	1.1	—
Share repurchase	—	(1.4)	(4.4)
Common stock repurchases for tax withholdings	(0.3)	(0.3)	(0.2)
Dividends	(5.8)	(5.7)	(5.7)
Non-Global Financing debt	0.2	22.8	(0.5)
Other (includes Global Financing receivables and Global Financing debt)	0.2	1.0	(1.6)
Change in cash, cash equivalents, restricted cash and short-term marketable securities	\$ 5.3	\$ (3.2)	\$ (0.6)
FCF as percent of Income from Continuing Operations	196 %*	126 %	136 %**

* 143% in 2020 excluding a \$2.0 billion pre-tax charge in the fourth quarter for structural actions.

** 111% in 2018 excluding charge of \$2.0 billion associated with the enactment of U.S. tax reform.

Events that could temporarily change the historical cash flow dynamics discussed previously include significant changes in operating results, material changes in geographic sources of cash, unexpected adverse impacts from litigation, future pension funding requirements during periods of severe downturn in the capital markets or the timing of tax payments. Whether any litigation has such an adverse impact will depend on a number of variables, which are more completely described in note R, "Commitments & Contingencies." With respect to pension funding, in 2020, we contributed \$211 million to our non-U.S. defined benefit plans compared to \$274 million in 2019. As highlighted in the Contractual Obligations table, we expect to make legally mandated pension plan contributions to certain non-U.S. plans of approximately \$1.5 billion in the next five years. The 2021 contributions are currently expected to be approximately \$300 million. Contributions related to all retirement-related plans are expected to be approximately \$2.3 billion in 2021, an increase of approximately \$100 million compared to 2020. Financial market performance could increase the legally mandated minimum contributions in certain non-U.S. countries that require more frequent remeasurement of the funded status. We are not quantifying any further impact from pension funding because it is not possible to predict future movements in the capital markets or pension plan funding regulations.

In 2021, we are not legally required to make any contributions to the U.S. defined benefit pension plans.

Our cash flows are sufficient to fund our current operations and obligations, including investing and financing activities such as dividends and debt service. When additional requirements arise, we have several liquidity options available. These options may include the ability to borrow additional funds at reasonable interest rates and utilizing our committed global credit facilities. With our share repurchase program suspended since the close of the Red Hat acquisition, our overall shareholder payout remains at a comfortable level and we remain fully committed to our long-standing dividend policy.

Contractual Obligations

(\$ in millions)

	Total Contractual Payment Stream	Payments Due In			
		2021	2022–23	2024–25	After 2025
Long-term debt obligations	\$ 61,718	\$ 6,956	\$13,015	\$10,751	\$30,995
Interest on long-term debt obligations	16,538	1,526	2,691	2,125	10,196
Finance lease obligations*	296	97	137	37	24
Operating lease obligations*	5,265	1,468	2,070	1,089	638
Purchase obligations	7,315	1,846	3,502	1,885	82
Other long-term liabilities:					
Minimum defined benefit plan pension funding (mandated)**	1,500	300	600	600	
Excess 401(k) Plus Plan	1,833	198	423	460	752
Long-term termination benefits ⁺	3,157	2,185	300	133	539
Tax reserves ⁺⁺	4,913	368			
Other	754	224	159	109	263
Total	\$103,290	\$15,168	\$22,898	\$17,189	\$43,490

* Finance lease obligations are presented on a discounted cash flow basis, whereas operating lease obligations are presented on an undiscounted cash flow basis.

** As funded status on plans will vary, obligations for mandated minimum pension payments after 2025 could not be reasonably estimated.

⁺ Includes benefits related to a \$2.0 billion charge for structural actions in the fourth quarter of 2020, most of which is expected to be paid in 2021.

⁺⁺ These amounts represent the liability for unrecognized tax benefits. We estimate that approximately \$368 million of the liability is expected to be settled within the next 12 months. The settlement period for the noncurrent portion of the income tax liability cannot be reasonably estimated as the timing of the payments will depend on the progress of tax examinations with the various tax authorities; however, it is not expected to be due within the next 12 months.

Certain contractual obligations reported in the previous table exclude the effects of time value and therefore, may not equal the amounts reported in the Consolidated Balance Sheet. Certain noncurrent liabilities are excluded from the previous table as their future cash outflows are uncertain. This includes deferred taxes, derivatives, deferred income, disability benefits and other sundry items. Certain obligations related to our divestitures are included.

Purchase obligations include all commitments to purchase goods or services of either a fixed or minimum quantity that meet any of the following criteria: (1) they are noncancelable, (2) we would incur a penalty if the agreement was canceled, or (3) we must make specified minimum payments even if we do not take delivery of the contracted products or services (take-or-pay). If the obligation to purchase goods or services is noncancelable, the entire value of the contract is included in the previous table. If the obligation is cancelable, but we would incur a penalty if canceled, the dollar amount of the penalty is included as a purchase obligation. Contracted minimum amounts specified in take-or-pay contracts are also included in the table as they represent the portion of each contract that is a firm commitment.

In the ordinary course of business, we enter into contracts that specify that we will purchase all or a portion of our requirements of a specific product, commodity or service from a supplier or vendor. These contracts are generally entered into in order to secure pricing or other negotiated terms. They do not specify fixed or minimum quantities to be purchased and, therefore, we do not consider them to be purchase obligations.

Interest on floating-rate debt obligations is calculated using the effective interest rate at December 31, 2020, plus the interest rate spread associated with that debt, if any.

Off-Balance Sheet Arrangements

From time to time, we may enter into off-balance sheet arrangements as defined by SEC Financial Reporting Release 67 (FRR-67), "Disclosure in Management's Discussion and Analysis about Off-Balance Sheet Arrangements and Aggregate Contractual Obligations."

At December 31, 2020, we had no such off-balance sheet arrangements that have, or are reasonably likely to have, a material current or future effect on our financial condition, changes in financial condition, revenues or expenses, results of operations, liquidity, capital expenditures or capital resources. See the table above for our contractual obligations, and note R, "Commitments & Contingencies," for detailed information about our guarantees, financial commitments and indemnification arrangements. We do not have retained interests in assets transferred to unconsolidated entities or other material off-balance sheet interests or instruments.

Critical Accounting Estimates

The application of GAAP requires IBM to make estimates and assumptions about certain items and future events that directly affect its reported financial condition. The accounting estimates and assumptions discussed in this section are those that we consider to be the most critical to our financial statements. An accounting estimate is considered critical if both (a) the nature of the estimate or

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assumption is material due to the levels of subjectivity and judgment involved, and (b) the impact within a reasonable range of outcomes of the estimate and assumption is material to IBM's financial condition. Senior management has discussed the development, selection and disclosure of these estimates with the Audit Committee of IBM's Board of Directors. Our significant accounting policies are described in note A, "Significant Accounting Policies."

The inputs into certain of our critical accounting estimates considered the macroeconomic impacts of the COVID-19 pandemic. These estimates included, but were not limited to, the allowances for credit losses, the carrying values of goodwill and intangible assets and other long-lived assets, our net investments in sales-type or direct financing leases, valuation allowances for tax assets and revenue recognition. The macroeconomic impacts of the COVID-19 pandemic did not have a material impact on our critical accounting estimates reflected in our 2020 results. Given the inherent uncertainty of the magnitude of future impacts from and/or the duration of the pandemic, our estimates may change materially in future periods.

A quantitative sensitivity analysis is provided where that information is reasonably available, can be reliably estimated and provides material information to investors. The amounts used to assess sensitivity (e.g., 1 percent, 10 percent, etc.) are included to allow users of the Annual Report to understand a general direction cause and effect of changes in the estimates and do not represent management's predictions of variability. For all of these estimates, it should be noted that future events rarely develop exactly as forecasted, and estimates require regular review and adjustment.

Pension Assumptions

For our defined benefit pension plans, the measurement of the benefit obligation to plan participants and net periodic pension (income)/cost requires the use of certain assumptions, including, among others, estimates of discount rates and expected return on plan assets.

Changes in the discount rate assumptions would impact the (gain)/loss amortization and interest cost components of the net periodic pension (income)/cost calculation and the projected benefit obligation (PBO). The discount rate assumption for the IBM Personal Pension Plan (PPP), a U.S.-based defined benefit plan, decreased by 90 basis points to 2.20 percent on December 31, 2020. This change will increase pre-tax income recognized in 2021 by an estimated \$48 million. If the discount rate assumption for the PPP had increased by 90 basis points on December 31, 2020, pre-tax income recognized in 2021 would decrease by an estimated \$29 million. Further changes in the discount rate assumptions would impact the PBO which, in turn, may impact our funding decisions if the PBO exceeds plan assets. A 25 basis point increase or decrease in the discount rate would cause a corresponding decrease or increase, respectively, in the PPP's PBO of an estimated \$1.3 billion based upon December 31, 2020 data.

The expected long-term return on plan assets assumption is used in calculating the net periodic pension (income)/cost. Expected returns on plan assets are calculated based on the market-related value of plan assets, which recognizes changes in the fair value of plan assets systematically over a five-year period in the expected return on plan assets line in net periodic pension (income)/cost. The differences between the actual return on plan assets and the expected long-term return on plan assets are recognized over five years in the expected return on plan assets line in net periodic pension (income)/cost and also as a component of actuarial (gains)/losses, which are recognized over the service lives or life expectancy of the participants, depending on the plan, provided such amounts exceed thresholds which are based upon the benefit obligation or the value of plan assets, as provided by accounting standards.

To the extent the outlook for long-term returns changes such that management changes its expected long-term return on plan assets assumption, each 50 basis point increase or decrease in the expected long-term return on PPP plan assets assumption would have an estimated decrease or increase, respectively, of \$240 million on the following year's pre-tax net periodic pension (income)/cost (based upon the PPP's plan assets at December 31, 2020 and assuming no contributions are made in 2021).

We may voluntarily make contributions or be required, by law, to make contributions to our pension plans. Actual results that differ from the estimates may result in more or less future IBM funding into the pension plans than is planned by management. Impacts of these types of changes on our pension plans in other countries worldwide would vary depending upon the status of each respective plan.

In addition to the above, we evaluate other pension assumptions involving demographic factors, such as retirement age and mortality, and update these assumptions to reflect experience and expectations for the future. Actual results in any given year can differ from actuarial assumptions because of economic and other factors.

For additional information on our pension plans and the development of these assumptions, see note V, "Retirement-Related Benefits."

Revenue Recognition

Application of GAAP related to the measurement and recognition of revenue requires us to make judgments and estimates. Specifically, complex arrangements with nonstandard terms and conditions may require significant contract interpretation to determine the appropriate accounting, including whether promised goods and services specified in an arrangement are distinct performance

obligations. Other significant judgments include determining whether IBM or a reseller is acting as the principal in a transaction and whether separate contracts should be combined and considered part of one arrangement.

Revenue recognition is also impacted by our ability to determine when a contract is probable of collection and to estimate variable consideration, including, for example, rebates, volume discounts, service-level penalties and performance bonuses. We consider various factors when making these judgments, including a review of specific transactions, historical experience and market and economic conditions. Evaluations are conducted each quarter to assess the adequacy of the estimates. If the estimates were changed by 10 percent in 2020, the impact on net income would have been immaterial.

Costs to Complete Service Contracts

We enter into numerous service contracts through our services businesses. During the contractual period, revenue, cost and profits may be impacted by estimates of the ultimate profitability of each contract, especially contracts for which we use cost-to-cost measures of progress. If at any time these estimates indicate the contract will be unprofitable, the entire estimated loss for the remainder of the contract is recorded immediately in cost. We perform ongoing profitability analyses of these services contracts in order to determine whether the latest estimates require updating. Key factors reviewed to estimate the future costs to complete each contract are future labor costs and product costs and expected productivity efficiencies. Contract loss provisions recorded as a component of other accrued expenses and liabilities were immaterial at December 31, 2020 and 2019.

Income Taxes

We are subject to income taxes in the U.S. and numerous foreign jurisdictions. Significant judgments are required in determining the consolidated provision for income taxes.

During the ordinary course of business, there are many transactions and calculations for which the ultimate tax determination is uncertain. As a result, we recognize tax liabilities based on estimates of whether additional taxes and interest will be due. These tax liabilities are recognized when, despite our belief that our tax return positions are supportable, we believe that certain positions may not be fully sustained upon review by tax authorities. We believe that our accruals for tax liabilities are adequate for all open audit years based on our assessment of many factors, including past experience and interpretations of tax law. This assessment relies on estimates and assumptions and may involve a series of complex judgments about future events. To the extent that new information becomes available which causes us to change our judgment regarding the adequacy of existing tax liabilities, such changes to tax liabilities will impact income tax expense in the period in which such determination is made.

Significant judgment is also required in determining any valuation allowance recorded against deferred tax assets. In assessing the need for a valuation allowance, management considers all available evidence for each jurisdiction including past operating results, estimates of future taxable income and the feasibility of ongoing tax planning strategies/actions. In the event that we change our determination as to the amount of deferred tax assets that can be realized, we will adjust the valuation allowance with a corresponding impact to income tax expense in the period in which such determination is made.

The consolidated provision for income taxes will change period to period based on nonrecurring events, such as the settlement of income tax audits and changes in tax laws, as well as recurring factors including the geographic mix of income before taxes, state and local taxes and the effects of various global income tax strategies.

To the extent that the provision for income taxes increases/decreases by 1 percent of income from continuing operations before income taxes, consolidated net income would have decreased/improved by \$46 million in 2020.

Valuation of Assets

The application of business combination and impairment accounting requires the use of significant estimates and assumptions. The acquisition method of accounting for business combinations requires us to estimate the fair value of assets acquired including separately identifiable intangible assets, liabilities assumed, and any noncontrolling interest in the acquiree to properly allocate purchase price consideration. Impairment testing for assets, other than goodwill, requires the allocation of cash flows to those assets or group of assets and if required, an estimate of fair value for the assets or group of assets. Our estimates are based upon assumptions believed to be reasonable, but which are inherently uncertain and unpredictable. These valuations require the use of management's assumptions, which would not reflect unanticipated events and circumstances that may occur.

Valuation of Goodwill

We review goodwill for impairment annually and whenever events or changes in circumstances indicate the carrying value of goodwill may not be recoverable. In 2020, we assessed the qualitative risk factors to determine whether it is more likely than not that the fair value of a reporting unit is less than its carrying amount.

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We assess qualitative factors in each of our reporting units that carry goodwill including relevant events and circumstances that affect the fair value of reporting units. Examples include, but are not limited to, macroeconomic, industry and market conditions, as well as other individual factors such as:

- A loss of key personnel;
- A significant adverse shift in the operating environment of the reporting unit such as unanticipated competition;
- A significant pending litigation;
- A more likely than not expectation that a reporting unit or a significant portion of a reporting unit will be sold or otherwise disposed of; and
- An adverse action or assessment by a regulator.

We assess these qualitative factors to determine whether it is necessary to perform the quantitative goodwill impairment test. This quantitative test is required only if we conclude that it is more likely than not that a reporting unit's fair value is less than its carrying amount. After performing the annual goodwill impairment qualitative analysis during the fourth quarter of 2020, the company determined it was not necessary to perform the quantitative goodwill impairment test.

Loss Contingencies

We are currently involved in various claims and legal proceedings. At least quarterly, we review the status of each significant matter and assess our potential financial exposure. If the potential loss from any claim or legal proceeding is considered probable and the amount can be reasonably estimated, we accrue a liability for the estimated loss. Significant judgment is required in both the determination of probability and the determination as to whether an exposure is reasonably estimable. Because of uncertainties related to these matters, accruals are based only on the best information available at the time. As additional information becomes available, we reassess the potential liability related to our pending claims and litigation, and may revise our estimates. These revisions in the estimates of the potential liabilities could have a material impact on our results of operations and financial position.

Global Financing Receivables Allowance for Credit Losses

The Global Financing business reviews its financing receivables portfolio on a regular basis in order to assess collectibility and records adjustments to the allowance for credit losses at least quarterly. A description of the methods used by management to estimate the amount of uncollectible receivables is included in note A, "Significant Accounting Policies." Factors that could result in actual receivable losses that are materially different from the estimated reserve include significant changes in the economy, or a sudden change in the economic health of a significant client that represents a concentration in Global Financing's receivables portfolio.

To the extent that actual collectibility differs from management's estimates currently provided for by 10 percent, Global Financing's segment pre-tax income and our income from continuing operations before income taxes would be higher or lower by an estimated \$26 million depending upon whether the actual collectibility was better or worse, respectively, than the estimates.

Residual Value

Residual value represents the estimated fair value of equipment under lease as of the end of the lease. Residual value estimates can impact the determination of whether a lease is classified as operating, sales-type or direct financing. Global Financing estimates the future fair value of leased equipment by using historical models, analyzing the current market for new and used equipment, and obtaining forward-looking product information such as marketing plans and technological innovations. Residual value estimates are periodically reviewed and "other than temporary" declines in estimated future residual values are recognized upon identification. Anticipated increases in future residual values are not recognized until the equipment is remarketed.

Factors that could cause actual results to materially differ from the estimates include significant changes in the used-equipment market brought on by unforeseen changes in technology innovations and any resulting changes in the useful lives of used equipment.

To the extent that actual residual value recovery is lower than management's estimates by 10 percent, Global Financing's segment pre-tax income and our income from continuing operations before income taxes for 2020 would have been lower by an estimated \$52 million. If the actual residual value recovery is higher than management's estimates, the increase in income will be realized at the end of lease when the equipment is remarketed.

Currency Rate Fluctuations

Changes in the relative values of non-U.S. currencies to the U.S. dollar affect our financial results and financial position. At December 31, 2020, currency changes resulted in assets and liabilities denominated in local currencies being translated into more dollars than at year-end 2019. We use financial hedging instruments to limit specific currency risks related to financing transactions and other foreign currency-based transactions.

During periods of sustained movements in currency, the marketplace and competition adjust to the changing rates. For example, when pricing offerings in the marketplace, we may use some of the advantage from a weakening U.S. dollar to improve our position competitively, and price more aggressively to win the business, essentially passing on a portion of the currency advantage to our customers. Competition will frequently take the same action. Consequently, we believe that some of the currency-based changes in

cost impact the prices charged to clients. We also maintain currency hedging programs for cash management purposes which may temporarily mitigate, but not eliminate, the volatility of currency impacts on our financial results.

We translate revenue, cost and expense in our non-U.S. operations at current exchange rates in the reported period. References to “adjusted for currency” or “constant currency” reflect adjustments based upon a simple mathematical formula. However, this constant currency methodology that we utilize to disclose this information does not incorporate any operational actions that management could take to mitigate fluctuating currency rates. Currency movements impacted our year-to-year revenue and earnings per share growth in 2020. Based on the currency rate movements in 2020, total revenue decreased 4.6 percent as reported and 4.7 percent at constant currency versus 2019. On an income from continuing operations before income taxes basis, these translation impacts offset by the net impact of hedging activities resulted in a theoretical maximum (assuming no pricing or sourcing actions) increase of approximately \$280 million in 2020 on an as-reported basis and an increase of approximately \$290 million on an operating (non-GAAP) basis. The same mathematical exercise resulted in an increase of approximately \$300 million in 2019 on an as-reported basis and an increase of \$260 million on an operating (non-GAAP) basis. We view these amounts as a theoretical maximum impact to our as-reported financial results. Considering the operational responses mentioned above, movements of exchange rates, and the nature and timing of hedging instruments, it is difficult to predict future currency impacts on any particular period, but we believe it could be substantially less than the theoretical maximum given the competitive pressure in the marketplace.

For non-U.S. subsidiaries and branches that operate in U.S. dollars or whose economic environment is highly inflationary, translation adjustments are reflected in results of operations. Generally, we manage currency risk in these entities by linking prices and contracts to U.S. dollars.

During 2018, the three-year cumulative inflation rates in Argentina, using a combination of monthly indices, exceeded the 100 percent threshold for hyperinflation. As a result, effective July 1, 2018, the company changed the functional currency from local currency to U.S. dollar functional for Argentina with no material impact. In 2019 and 2020, the Argentinean economy continued to experience high inflation. The ongoing impact is not material given the size of the company’s operations in the country (less than 1 percent of total 2020 and 2019 revenue, respectively).

Market Risk

In the normal course of business, our financial position is routinely subject to a variety of risks. In addition to the market risk associated with interest rate and currency movements on outstanding debt and non-U.S. dollar denominated assets and liabilities, other examples of risk include collectibility of accounts receivable and recoverability of residual values on leased assets.

We regularly assess these risks and have established policies and business practices to protect against the adverse effects of these and other potential exposures. As a result, we do not anticipate any material losses from these risks.

Our debt, in support of the Global Financing business and the geographic breadth of our operations, contains an element of market risk from changes in interest and currency rates. We manage this risk, in part, through the use of a variety of financial instruments including derivatives, as described in note T, “Derivative Financial Instruments.”

To meet disclosure requirements, we perform a sensitivity analysis to determine the effects that market risk exposures may have on the fair values of our debt and other financial instruments.

The financial instruments that are included in the sensitivity analysis are comprised of our cash and cash equivalents, marketable securities, short-term and long-term loans, commercial financing and installment payment receivables, investments, long-term and short-term debt and derivative financial instruments. Our derivative financial instruments generally include interest rate swaps, foreign currency swaps and forward contracts.

To perform the sensitivity analysis, we assess the risk of loss in fair values from the effect of hypothetical changes in interest rates and foreign currency exchange rates on market-sensitive instruments. The market values for interest and foreign currency exchange risk are computed based on the present value of future cash flows as affected by the changes in rates that are attributable to the market risk being measured. The discount rates used for the present value computations were selected based on market interest and foreign currency exchange rates in effect at December 31, 2020 and 2019. The differences in this comparison are the hypothetical losses associated with each type of risk.

Information provided by the sensitivity analysis does not necessarily represent the actual changes in fair value that we would incur under normal market conditions because, due to practical limitations, all variables other than the specific market risk factor are held constant. In addition, the results of the model are constrained by the fact that certain items are specifically excluded from the analysis, while the financial instruments relating to the financing or hedging of those items are included by definition. Excluded items include short-term and long-term receivables from sales-type and direct financing leases, forecasted foreign currency cash flows and the company’s net investment in foreign operations. As a consequence, reported changes in the values of some of the financial instruments

impacting the results of the sensitivity analysis are not matched with the offsetting changes in the values of the items that those instruments are designed to finance or hedge.

The results of the sensitivity analysis at December 31, 2020 and 2019, are as follows:

Interest Rate Risk

A hypothetical 10 percent adverse change in the levels of interest rates, with all other variables held constant, would result in a decrease in the fair value of our financial instruments of approximately \$0.4 billion and \$0.6 billion at December 31, 2020 and 2019, respectively. Changes in the relative sensitivity of the fair value of our financial instrument portfolio for these theoretical changes in the level of interest rates are primarily driven by changes in debt maturities, interest rate profile and amount.

Foreign Currency Exchange Rate Risk

A hypothetical 10 percent adverse change in the levels of foreign currency exchange rates relative to the U.S. dollar, with all other variables held constant, would result in a decrease in the fair value of our financial instruments of approximately \$1.8 billion and \$0.6 billion at December 31, 2020 and 2019, respectively. The increase in the sensitivity of these theoretical changes from the prior year is primarily driven by an increase in Euro denominated long-term debt and a decrease in derivatives used for purchases of foreign currencies.

Financing Risks

See the "Description of Business" on pages 27 to 28 for a discussion of the financing risks associated with the Global Financing business and management's actions to mitigate such risks.

Cybersecurity

While cybersecurity risk can never be completely eliminated, our approach draws on the depth and breadth of our global capabilities, both in terms of our offerings to clients and our internal approaches to risk management. We offer commercial security solutions that deliver capabilities in areas such as identity and access management, data security, application security, network security and endpoint security. These solutions include pervasive encryption, threat intelligence, analytics, cognitive and artificial intelligence, and forensic capabilities that analyze client security events, yielding insights about attacks, threats, and vulnerabilities facing the client. We also offer professional consulting and technical services solutions for security from assessment and incident response to deployment and resource augmentation. In addition, we offer managed and outsourced security solutions from multiple security operations centers around the world. Finally, security is embedded in a multitude of our products and offerings through secure engineering and operations, and by critical functions (e.g., encryption, access control) in servers, storage, software, services, and other solutions.

From an enterprise perspective, we implement a multi-faceted risk-management approach based on the National Institute of Standards and Technology Cybersecurity Framework to identify and address cybersecurity risks. In addition, we have established policies and procedures that provide the foundation upon which IBM's infrastructure and data are managed. We regularly assess and adjust our technical controls and methods to identify and mitigate emerging cybersecurity risks. We use a layered approach with overlapping controls to defend against cybersecurity attacks and threats on networks, end-user devices, servers, applications, data and cloud solutions. We draw heavily on our own commercial security solutions and services to mitigate cybersecurity risks. We also have threat intelligence and security monitoring programs, as well as a global incident response process to respond to cybersecurity threats and attacks. In addition, we utilize a combination of online training, educational tools, videos and other awareness initiatives to foster a culture of security awareness and responsibility among our workforce.

Management Responsibility for Financial Information

Responsibility for the integrity and objectivity of the financial information presented in this Annual Report rests with IBM management. The accompanying financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America, applying certain estimates and judgments as required.

IBM maintains an effective internal control structure. It consists, in part, of organizational arrangements with clearly defined lines of responsibility and delegation of authority, and comprehensive systems and control procedures. An important element of the control environment is an ongoing internal audit program. Our system also contains self-monitoring mechanisms, and actions are taken to correct deficiencies as they are identified.

To assure the effective administration of internal controls, we carefully select and train our employees, develop and disseminate written policies and procedures, provide appropriate communication channels and foster an environment conducive to the effective functioning of controls. We believe that it is essential for the company to conduct its business affairs in accordance with the highest ethical standards, as set forth in the IBM Business Conduct Guidelines. These guidelines, translated into numerous languages, are distributed to employees throughout the world, and reemphasized through internal programs to assure that they are understood and followed.

The Audit Committee of the Board of Directors is composed solely of independent, non-management directors, and is responsible for recommending to the Board the independent registered public accounting firm to be retained for the coming year, subject to stockholder ratification. The Audit Committee meets regularly and privately with the independent registered public accounting firm, with the company's internal auditors, as well as with IBM management, to review accounting, auditing, internal control structure and financial reporting matters.

Management's Report on Internal Control Over Financial Reporting

Management is responsible for establishing and maintaining adequate internal control over financial reporting of the company. Internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with accounting principles generally accepted in the United States of America.

The company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with accounting principles generally accepted in the United States of America, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. 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 the policies or procedures may deteriorate.

Management conducted an evaluation of the effectiveness of internal control over financial reporting based on the criteria established in *Internal Control–Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Based on this evaluation, management concluded that the company's internal control over financial reporting was effective as of December 31, 2020.

PricewaterhouseCoopers LLP, an independent registered public accounting firm, is retained to audit IBM's Consolidated Financial Statements and the effectiveness of the internal control over financial reporting. Its accompanying report is based on audits conducted in accordance with the standards of the Public Company Accounting Oversight Board (United States).


Arvind Krishna

Arvind Krishna
Chairman and Chief Executive Officer
February 23, 2021



James J. Kavanaugh
Senior Vice President and Chief Financial Officer
February 23, 2021

To the Board of Directors and Stockholders of International Business Machines Corporation

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of International Business Machines Corporation and its subsidiaries (the "Company") as of December 31, 2020 and 2019, and the related consolidated statements of income, of comprehensive income, of equity and of cash flows for each of the three years in the period ended December 31, 2020, including the related notes (collectively referred to as the "consolidated financial statements"). We also have audited the Company's internal control over financial reporting as of December 31, 2020, based on criteria established in *Internal Control—Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2020 and 2019, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2020 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2020, based on criteria established in *Internal Control—Integrated Framework* (2013) issued by the COSO.

Change in Accounting Principle

As discussed in Note B to the consolidated financial statements, the Company changed the manner in which it accounts for leases in 2019.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Report on Internal Control Over Financial Reporting. Our responsibility is to express opinions on the Company's consolidated financial statements and on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) 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 management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. 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 the policies or procedures may deteriorate.

Critical Audit Matters

The critical audit matter communicated below is a matter arising from the current period audit of the consolidated financial statements that was communicated or required to be communicated to the audit committee and that (i) relates to accounts or disclosures that are material to the consolidated financial statements and (ii) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Income Taxes—Uncertain Tax Positions

As described in Notes A and G to the consolidated financial statements, the Company is subject to income taxes in the United States and numerous foreign jurisdictions. As disclosed by management, during the ordinary course of business there are many transactions and calculations for which the ultimate tax determination is uncertain. As a result, management recognizes tax liabilities based on estimates of whether additional taxes and interest will be due. As further described by management, these tax liabilities are recognized when, despite management's belief that the tax return positions are supportable, management believes that certain positions may not be fully sustained upon review by tax authorities. Management bases its assessment of the accruals for tax liabilities on many factors, including past experience and interpretations of tax law. This assessment relies on estimates and assumptions and may involve a series of complex judgments about future events. As of December 31, 2020, unrecognized tax benefits were \$8.6 billion.

The principal considerations for our determination that performing procedures relating to uncertain tax positions is a critical audit matter are the significant judgment by management when estimating the uncertain tax positions, including applying complex tax laws, and a high degree of estimation uncertainty based on potential for significant adjustments as a result of audits by tax authorities or other forms of tax settlement. This in turn led to a high degree of auditor judgment, effort, and subjectivity in performing procedures to evaluate management's timely identification and measurement of uncertain tax positions. Also, the evaluation of audit evidence available to support the uncertain tax positions is complex and required significant auditor judgment as the nature of the evidence is often inherently subjective, and the audit effort involved the use of professionals with specialized skill and knowledge.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to the identification and recognition of the uncertain tax positions, and controls addressing completeness of the uncertain tax positions, as well as controls over measurement of the amount recorded. These procedures also included, among others (i) testing the information used in the calculation of the uncertain tax positions, including intercompany agreements, international, federal, and state filing positions, and the related final tax returns; (ii) testing the calculation of the uncertain tax positions by jurisdiction, including management's assessment of the technical merits of tax positions and estimates of the amount of tax benefit expected to be sustained; (iii) testing the completeness of management's assessment of both the identification of uncertain tax positions and possible outcomes of each uncertain tax position; and (iv) evaluating the status and results of income tax audits pending in various tax jurisdictions. Professionals with specialized skill and knowledge were used to assist in the evaluation of the completeness and measurement of the Company's uncertain tax positions, including evaluating the reasonableness of management's assessment of whether tax positions are more-likely-than-not of being sustained and the amount of potential benefit to be realized.



PricewaterhouseCoopers LLP
New York, New York
February 23, 2021

We, or firms that we have ultimately acquired, have served as the Company's auditor since 1923. For the period from 1923 to 1958, the Company was audited by firms that a predecessor firm to PricewaterhouseCoopers LLP ultimately acquired.

Consolidated Income Statement
 International Business Machines Corporation and Subsidiary Companies

(\$ in millions except per share amounts)

For the year ended December 31:	Notes	2020	2019	2018
Revenue				
Services		\$45,004	\$47,493	\$49,257
Sales		27,484	28,252	28,735
Financing		1,133	1,402	1,599
Total revenue	C	73,620	77,147	79,591
Cost				
Services		30,404	32,491	33,687
Sales		6,934	7,263	7,835
Financing		708	904	1,132
Total cost		38,046	40,659	42,655
Gross profit		35,575	36,488	36,936
Expense and other (income)				
Selling, general and administrative		23,082	20,604	19,366
Research, development and engineering	F	6,333	5,989	5,379
Intellectual property and custom development income		(626)	(648)	(1,026)
Other (income) and expense		861	(968)	1,152
Interest expense	P&T	1,288	1,344	723
Total expense and other (income)		30,937	26,322	25,594
Income from continuing operations before income taxes		4,637	10,166	11,342
Provision for/(benefit from) income taxes	G	(864)	731	2,619
Income from continuing operations		5,501	9,435	8,723
Income/(loss) from discontinued operations, net of tax		89	(4)	5
Net income		\$ 5,590	\$ 9,431	\$ 8,728
Earnings/(loss) per share of common stock				
Assuming dilution				
Continuing operations	H	\$ 6.13	\$ 10.57	\$ 9.51
Discontinued operations	H	0.10	(0.01)	0.01
Total	H	\$ 6.23	\$ 10.56	\$ 9.52
Basic				
Continuing operations	H	\$ 6.18	\$ 10.63	\$ 9.56
Discontinued operations	H	0.10	0.00	0.01
Total	H	\$ 6.28	\$ 10.63	\$ 9.57
Weighted-average number of common shares outstanding				
Assuming dilution		896,563,971	892,813,376	916,315,714
Basic		890,348,679	887,235,105	912,048,072

Amounts may not add due to rounding.

The accompanying notes are an integral part of the financial statements.

(\$ in millions)

For the year ended December 31:	Notes	2020	2019	2018
Net income		\$ 5,590	\$ 9,431	\$ 8,728
Other comprehensive income/(loss), before tax				
Foreign currency translation adjustments	S	(1,500)	(39)	(730)
Net changes related to available-for-sale securities	S			
Unrealized gains/(losses) arising during the period		(1)	1	(2)
Reclassification of (gains)/losses to net income		—	—	—
Total net changes related to available-for-sale securities		(1)	1	(2)
Unrealized gains/(losses) on cash flow hedges	S			
Unrealized gains/(losses) arising during the period		(349)	(689)	(136)
Reclassification of (gains)/losses to net income		(21)	75	449
Total unrealized gains/(losses) on cash flow hedges		(370)	(614)	313
Retirement-related benefit plans	S			
Prior service costs/(credits)		(37)	(73)	(182)
Net (losses)/gains arising during the period		(1,678)	(120)	(2,517)
Curtailments and settlements		52	41	11
Amortization of prior service (credits)/costs		13	(9)	(73)
Amortization of net (gains)/losses		2,314	1,843	2,966
Total retirement-related benefit plans		664	1,681	204
Other comprehensive income/(loss), before tax	S	(1,206)	1,029	(215)
Income tax (expense)/benefit related to items of other comprehensive income	S	466	(136)	(262)
Other comprehensive income/(loss)	S	(740)	893	(476)
Total comprehensive income		\$ 4,850	\$ 10,324	\$ 8,252

Amounts may not add due to rounding.

The accompanying notes are an integral part of the financial statements.

Consolidated Balance Sheet
International Business Machines Corporation and Subsidiary Companies

(\$ in millions except per share amounts)

At December 31:	Notes	2020	2019
Assets			
Current assets			
Cash and cash equivalents		\$ 13,212	\$ 8,172
Restricted cash		463	141
Marketable securities	I	600	696
Notes and accounts receivable—trade (net of allowances of \$351 in 2020 and \$299 in 2019)		7,132	7,870
Short-term financing receivables (net of allowances of \$218 in 2020 and \$188 in 2019)	K	10,892	14,192
Other accounts receivable (net of allowances of \$28 in 2020 and \$33 in 2019)		714	1,733
Inventory	J	1,839	1,619
Deferred costs	C	2,107	1,896
Prepaid expenses and other current assets		2,206	2,101
Total current assets		39,165	38,420
Property, plant and equipment	L	33,176	32,028
Less: Accumulated depreciation	L	23,136	22,018
Property, plant and equipment—net	L	10,040	10,010
Operating right-of-use assets—net	M	4,686	4,996
Long-term financing receivables (net of allowances of \$45 in 2020 and \$33 in 2019)	K	7,086	8,712
Prepaid pension assets	V	7,610	6,865
Deferred costs	C	2,449	2,472
Deferred taxes	G	9,241	5,182
Goodwill	N	59,617	58,222
Intangible assets—net	N	13,796	15,235
Investments and sundry assets	O	2,282	2,074
Total assets		\$ 155,971	\$ 152,186
Liabilities and equity			
Current liabilities			
Taxes	G	\$ 3,301	\$ 2,839
Short-term debt	I&P	7,183	8,797
Accounts payable		4,908	4,896
Compensation and benefits		3,440	3,406
Deferred income		12,833	12,026
Operating lease liabilities	M	1,357	1,380
Other accrued expenses and liabilities		6,847	4,357
Total current liabilities		39,869	37,701
Long-term debt	I&P	54,355	54,102
Retirement and nonpension postretirement benefit obligations	V	18,248	17,142
Deferred income		4,301	3,851
Operating lease liabilities	M	3,574	3,879
Other liabilities	Q	14,897	14,526
Total liabilities		135,244	131,202
Commitments and Contingencies	R		
Equity	S		
IBM stockholders' equity			
Common stock, par value \$.20 per share, and additional paid-in capital		56,556	55,895
Shares authorized: 4,687,500,000			
Shares issued (2020—2,242,969,004; 2019—2,237,996,975)			
Retained earnings		162,717	162,954
Treasury stock, at cost (shares: 2020—1,350,315,580; 2019—1,350,886,521)		(169,339)	(169,413)
Accumulated other comprehensive income/(loss)		(29,337)	(28,597)
Total IBM stockholders' equity		20,597	20,841
Noncontrolling interests	A	129	144
Total equity		20,727	20,985
Total liabilities and equity		\$ 155,971	\$ 152,186

Amounts may not add due to rounding.

The accompanying notes are an integral part of the financial statements.

(\$ in millions)	2020	2019	2018
For the year ended December 31:			
Cash flows from operating activities			
Net income	\$ 5,590	\$ 9,431	\$ 8,728
Adjustments to reconcile net income to cash provided by operating activities			
Depreciation	4,227	4,209	3,127
Amortization of intangibles	2,468	1,850	1,353
Stock-based compensation	937	679	510
Deferred taxes	(3,203)	(1,527)	853
Net (gain)/loss on asset sales and other	(70)	(1,096)	123
Change in operating assets and liabilities, net of acquisitions/divestitures			
Receivables (including financing receivables)	5,297	502	1,006
Retirement related	936	301	1,368
Inventory	(209)	67	(127)
Other assets/other liabilities	2,087	858	(1,819)
Accounts payable	138	(503)	126
Net cash provided by operating activities	18,197	14,770	15,247
Cash flows from investing activities			
Payments for property, plant and equipment	(2,618)	(2,286)	(3,395)
Proceeds from disposition of property, plant and equipment	188	537	248
Investment in software	(612)	(621)	(569)
Purchases of marketable securities and other investments	(6,246)	(3,693)	(7,041)
Proceeds from disposition of marketable securities and other investments	5,618	3,961	6,487
Non-operating finance receivables—net	475	6,720	(503)
Acquisition of businesses, net of cash acquired	(336)	(32,630)	(139)
Divestiture of businesses, net of cash transferred	503	1,076	—
Net cash provided by/(used in) investing activities	(3,028)	(26,936)	(4,913)
Cash flows from financing activities			
Proceeds from new debt	10,504	31,825	6,891
Payments to settle debt	(13,365)	(12,944)	(8,533)
Short-term borrowings/(repayments) less than 90 days—net	(853)	(2,597)	1,341
Common stock repurchases	—	(1,361)	(4,443)
Common stock repurchases for tax withholdings	(302)	(272)	(171)
Financing—other	92	99	111
Cash dividends paid	(5,797)	(5,707)	(5,666)
Net cash provided by/(used in) financing activities	(9,721)	9,042	(10,469)
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(87)	(167)	(495)
Net change in cash, cash equivalents and restricted cash	5,361	(3,290)	(630)
Cash, cash equivalents and restricted cash at January 1	8,314	11,604	12,234
Cash, cash equivalents and restricted cash at December 31	\$ 13,675	\$ 8,314	\$ 11,604
Supplemental data			
Income taxes paid—net of refunds received	\$ 2,253	\$ 2,091	\$ 1,745
Interest paid on debt	\$ 1,830	\$ 1,685	\$ 1,423

Amounts may not add due to rounding.

The accompanying notes are an integral part of the financial statements.

Consolidated Statement of Equity
International Business Machines Corporation and Subsidiary Companies

(\$ in millions except per share amounts)

	Common Stock and Additional Paid-in Capital	Retained Earnings	Treasury Stock	Accumulated Other Comprehensive Income/(Loss)	Total IBM Stockholders' Equity	Non- Controlling Interests	Total Equity
2018							
Equity, January 1, 2018	\$54,566	\$153,126	\$(163,507)	\$(26,592)	\$17,594	\$131	\$17,725
Cumulative effect of change in accounting principle							
Revenue*		580			580		580
Stranded tax effects/other*		2,422		(2,422)			
Net income plus other comprehensive income/(loss)							
Net income		8,728			8,728		8,728
Other comprehensive income/(loss)				(476)	(476)		(476)
Total comprehensive income/(loss)					\$ 8,252		\$ 8,252
Cash dividends paid—common stock (\$6.21 per share)		(5,666)			(5,666)		(5,666)
Common stock issued under employee plans (3,998,245 shares)	585				585		585
Purchases (1,173,416 shares) and sales (424,589 shares) of treasury stock under employee plans—net	15	(117)			(103)		(103)
Other treasury shares purchased, not retired (32,949,233 shares)			(4,447)		(4,447)		(4,447)
Changes in other equity	0	0			0		0
Changes in noncontrolling interests						3	3
Equity, December 31, 2018	\$55,151	\$159,206	\$(168,071)	\$(29,490)	\$16,796	\$134	\$16,929

* Reflects the adoption of FASB guidance. Refer to note B, "Accounting Changes."

Amounts may not add due to rounding.

The accompanying notes are an integral part of the financial statements.

(\$ in millions except per share amounts)

	Common Stock and Additional Paid-in Capital	Retained Earnings	Treasury Stock	Accumulated Other Comprehensive Income/(Loss)	Total IBM Stockholders' Equity	Non- Controlling Interests	Total Equity
2019							
Equity, January 1, 2019	\$55,151	\$159,206	\$(168,071)	\$(29,490)	\$16,796	\$134	\$16,929
Net income plus other comprehensive income/(loss)							
Net income		9,431			9,431		9,431
Other comprehensive income/(loss)				893	893		893
Total comprehensive income/(loss)					\$10,324		\$10,324
Cash dividends paid—common stock (\$6.43 per share)		(5,707)			(5,707)		(5,707)
Common stock issued under employee plans (4,569,917 shares)	745				745		745
Purchases (2,000,704 shares) and sales (2,041,347 shares) of treasury stock under employee plans—net	30	(11)			19		19
Other treasury shares purchased, not retired (9,979,516 shares)			(1,331)		(1,331)		(1,331)
Changes in other equity		(5)			(5)		(5)
Changes in noncontrolling interests						10	10
Equity, December 31, 2019	\$55,895	\$162,954	\$(169,413)	\$(28,597)	\$20,841	\$144	\$20,985

Amounts may not add due to rounding.

The accompanying notes are an integral part of the financial statements.

Consolidated Statement of Equity
 International Business Machines Corporation and Subsidiary Companies

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(\$ in millions except per share amounts)

	Common Stock and Additional Paid-in Capital	Retained Earnings	Treasury Stock	Accumulated Other Comprehensive Income/(Loss)	Total IBM Stockholders' Equity	Non- Controlling Interests	Total Equity
2020							
Equity, January 1, 2020	\$55,895	\$162,954	\$(169,413)	\$(28,597)	\$20,841	\$144	\$20,985
Cumulative effect of change in accounting principle*		(66)			(66)		(66)
Net income plus other comprehensive income/(loss)							
Net income	5,590				5,590		5,590
Other comprehensive income/(loss)				(740)	(740)		(740)
Total comprehensive income/(loss)					\$ 4,850		\$ 4,850
Cash dividends paid—common stock (\$6.51 per share)		(5,797)			(5,797)		(5,797)
Common stock issued under employee plans (4,972,028 shares)	661				661		661
Purchases (2,363,966 shares) and sales (2,934,907 shares) of treasury stock under employee plans—net	36	74			110		110
Changes in noncontrolling interests						(15)	(15)
Equity, December 31, 2020	\$56,556	\$162,717	\$(169,339)	\$(29,337)	\$20,597	\$129	\$20,727

* Reflects the adoption of the FASB guidance on current expected credit losses. Refer to note B, "Accounting Changes."

Amounts may not add due to rounding.

The accompanying notes are an integral part of the financial statements.

NOTE A. SIGNIFICANT ACCOUNTING POLICIES

Basis of Presentation

The accompanying Consolidated Financial Statements and footnotes of the International Business Machines Corporation (IBM or the company) have been prepared in accordance with accounting principles generally accepted in the United States of America (GAAP).

Within the financial statements and tables presented, certain columns and rows may not add due to the use of rounded numbers for disclosure purposes. Percentages presented are calculated from the underlying whole-dollar amounts. Certain prior-year amounts have been reclassified to conform to the current year presentation. This is annotated where applicable.

On October 8, 2020, the company announced that it will separate the managed infrastructure services unit of its Global Technology Services (GTS) segment into a new public company (NewCo). The managed infrastructure services unit is comprised of outsourcing and other infrastructure modernization and management services. The separation is expected to be achieved through a U.S. federal tax-free spin-off to IBM shareholders and completed by the end of 2021. It will be subject to customary market, regulatory and other closing conditions, including final IBM Board of Directors' approval. The announcement did not have any classification impact to the company's Consolidated Financial Statements or segment reporting. The company will report the managed infrastructure services unit as discontinued operations after separation.

In the first quarter of 2020, the company realigned offerings and the related management system to reflect divestitures completed in the second half of 2019 and tighter integration of certain industry-related consulting services. These changes impacted two of the company's reportable segments, but did not impact the Consolidated Financial Statements. Refer to note D, "Segments," for additional information on the company's reportable segments. The periods presented in this Annual Report are reported on a comparable basis.

On July 9, 2019, the company completed the acquisition of all the outstanding shares of Red Hat, Inc. (Red Hat). Refer to note E, "Acquisitions & Divestitures," and note N, "Intangible Assets Including Goodwill," for additional information.

The benefit from income taxes for the year ended December 31, 2020 includes the tax impacts of an intra-entity sale of certain of the company's intellectual property, which resulted in a net benefit of \$0.9 billion in the first quarter of 2020. The impact of the enactment of the Tax Cuts and Jobs Act (U.S. tax reform) resulted in a charge to income taxes of \$0.1 billion and \$2.0 billion, for the years ended December 31, 2019 and 2018, respectively. In 2020, there was no impact from the enactment of U.S. tax reform. Refer to note G, "Taxes," for additional information.

Noncontrolling interest amounts of \$22 million, \$25 million and \$17 million, net of tax, for the years ended December 31, 2020, 2019 and 2018, respectively, are included as a reduction within other (income) and expense in the Consolidated Income Statement.

Principles of Consolidation

The Consolidated Financial Statements include the accounts of IBM and its controlled subsidiaries, which are primarily majority owned. Any noncontrolling interest in the equity of a subsidiary is reported as a component of total equity in the Consolidated Balance Sheet. Net income and losses attributable to the noncontrolling interest is reported as described above in the Consolidated Income Statement. The accounts of variable interest entities (VIEs) are included in the Consolidated Financial Statements, if required. Investments in business entities in which the company does not have control but has the ability to exercise significant influence over operating and financial policies, are accounted for using the equity method and the company's proportionate share of income or loss is recorded in other (income) and expense. The accounting policy for other investments in equity securities is described within the "Marketable Securities" section of this note. Equity investments in non-publicly traded entities lacking controlling financial interest or significant influence are primarily measured at cost, absent other indicators of fair value, net of impairment, if any. All intercompany transactions and accounts have been eliminated in consolidation.

Use of Estimates

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect amounts that are reported in the Consolidated Financial Statements and accompanying disclosures. Estimates are made for the following, among others: revenue, costs to complete service contracts, income taxes, pension assumptions, valuation of assets including goodwill and intangible assets, loss contingencies, allowance for credit losses and other matters. These estimates are based on management's best knowledge of current events, historical experience, actions that the company may undertake in the future and on various other assumptions that are believed to be reasonable under the circumstances, including in 2020, the macroeconomic impacts of the COVID-19 pandemic. Actual results may be different from these estimates.

Revenue

The company accounts for a contract with a client when it has written approval, the contract is committed, the rights of the parties, including payment terms, are identified, the contract has commercial substance and consideration is probable of collection.

Revenue is recognized when, or as, control of a promised product or service transfers to a client, in an amount that reflects the consideration to which the company expects to be entitled in exchange for transferring those products or services. If the consideration

promised in a contract includes a variable amount, the company estimates the amount to which it expects to be entitled using either the expected value or most likely amount method. The company's contracts may include terms that could cause variability in the transaction price, including, for example, rebates, volume discounts, service-level penalties, and performance bonuses or other forms of contingent revenue.

The company only includes estimated amounts in the transaction price to the extent it is probable that a significant reversal of cumulative revenue recognized will not occur when the uncertainty associated with the variable consideration is resolved. The company may not be able to reliably estimate contingent revenue in certain long-term arrangements due to uncertainties that are not expected to be resolved for a long period of time or when the company's experience with similar types of contracts is limited. The company's arrangements infrequently include contingent revenue. Changes in estimates of variable consideration are included in note C, "Revenue Recognition."

The company's standard billing terms are that payment is due upon receipt of invoice, payable within 30 days. Invoices are generally issued as control transfers and/or as services are rendered. Additionally, in determining the transaction price, the company adjusts the promised amount of consideration for the effects of the time value of money if the billing terms are not standard and the timing of payments agreed to by the parties to the contract provide the client or the company with a significant benefit of financing, in which case the contract contains a significant financing component. As a practical expedient, the company does not account for significant financing components if the period between when the company transfers the promised product or service to the client and when the client pays for that product or service will be one year or less. Most arrangements that contain a financing component are financed through the company's Global Financing business and include explicit financing terms.

The company may include subcontractor services or third-party vendor equipment or software in certain integrated services arrangements. In these types of arrangements, revenue from sales of third-party vendor products or services is recorded net of costs when the company is acting as an agent between the client and the vendor, and gross when the company is the principal for the transaction. To determine whether the company is an agent or principal, the company considers whether it obtains control of the products or services before they are transferred to the customer. In making this evaluation, several factors are considered, most notably whether the company has primary responsibility for fulfillment to the client, as well as inventory risk and pricing discretion.

The company recognizes revenue on sales to solution providers, resellers and distributors (herein referred to as resellers) when the reseller has economic substance apart from the company and the reseller is considered the principal for the transaction with the end-user client.

The company reports revenue net of any revenue-based taxes assessed by governmental authorities that are imposed on and concurrent with specific revenue-producing transactions.

In addition to the aforementioned general policies, the following are the specific revenue recognition policies for arrangements with multiple performance obligations and for each major category of revenue.

Arrangements with Multiple Performance Obligations

The company's global capabilities as a hybrid cloud platform and AI company include services, software, hardware and related financing. The company enters into revenue arrangements that may consist of any combination of these products and services based on the needs of its clients.

The company continues to develop new products and offerings and continuously reinvents its platforms and delivery methods, including the use of cloud and as-a-Service models. These are not separate businesses; they are offerings across the segments that address market opportunities in analytics, data, cloud and security. Revenue from these offerings follows the specific revenue recognition policies for arrangements with multiple performance obligations and for each major category of revenue, depending on the type of offering, which are comprised of services, hardware and/or software.

To the extent that a product or service in multiple performance obligation arrangements is subject to other specific accounting guidance, such as leasing guidance, that product or service is accounted for in accordance with such specific guidance. For all other products or services in these arrangements, the company determines if the products or services are distinct and allocates the consideration to each distinct performance obligation on a relative standalone selling price basis.

When products and services are not distinct, the company determines an appropriate measure of progress based on the nature of its overall promise for the single performance obligation.

The revenue policies in the Services, Hardware and/or Software sections below are applied to each performance obligation, as applicable.

Services

The company's primary services offerings include cloud and infrastructure services, including outsourcing, and other managed services; application management services; global process services (GPS); maintenance and support; and consulting, including the design and development of complex IT systems to a client's specifications (e.g., design and build). Many of these services can be delivered entirely or partially through cloud or as-a-Service delivery models. The company's services are provided on a time-and-material basis, as a fixed-price contract or as a fixed-price per measure of output contract and the contract terms range from less than one year to over 10 years.

In services arrangements, the company typically satisfies the performance obligation and recognizes revenue over time. In design and build arrangements, the performance obligation is satisfied over time either because the client controls the asset as it is created (e.g., when the asset is built at the customer site) or because the company's performance does not create an asset with an alternative use and the company has an enforceable right to payment plus a reasonable profit for performance completed to date. In most other services arrangements, the performance obligation is satisfied over time because the client simultaneously receives and consumes the benefits provided as the company performs the services.

In outsourcing, other managed services, application management, GPS and other cloud-based services arrangements, the company determines whether the services performed during the initial phases of the arrangement, such as setup activities, are distinct. In most cases, the arrangement is a single performance obligation comprised of a series of distinct services that are substantially the same and that have the same pattern of transfer (i.e., distinct days of service). The company applies a measure of progress (typically time-based) to any fixed consideration and allocates variable consideration to the distinct periods of service based on usage. As a result, revenue is generally recognized over the period the services are provided on a usage basis. This results in revenue recognition that corresponds with the value to the client of the services transferred to date relative to the remaining services promised.

Revenue from time-and-material contracts is recognized on an output basis as labor hours are delivered and/or direct expenses are incurred. Revenue from as-a-Service type contracts, such as Infrastructure-as-a-Service, is recognized either on a straight-line basis or on a usage basis, depending on the terms of the arrangement (such as whether the company is standing ready to perform or whether the contract has usage-based metrics). If an as-a-Service contract includes setup activities, those promises in the arrangement are evaluated to determine if they are distinct.

Revenue related to maintenance and support services and extended warranty is recognized on a straight-line basis over the period of performance because the company is standing ready to provide services.

In design and build contracts, revenue is recognized based on progress toward completion of the performance obligation using a cost-to-cost measure of progress. Revenue is recognized based on the labor costs incurred to date as a percentage of the total estimated labor costs to fulfill the contract. Due to the nature of the work performed in these arrangements, the estimation of cost at completion is complex, subject to many variables and requires significant judgment. Key factors reviewed by the company to estimate costs to complete each contract are future labor and product costs and expected productivity efficiencies. Changes in original estimates are reflected in revenue on a cumulative catch-up basis in the period in which the circumstances that gave rise to the revision become known by the company. Refer to note C, "Revenue Recognition," for the amount of revenue recognized in the reporting period on a cumulative catch-up basis (i.e., from performance obligations satisfied, or partially satisfied, in previous periods).

The company performs ongoing profitability analyses of its design and build services contracts accounted for using a cost-to-cost measure of progress in order to determine whether the latest estimates of revenues, costs and profits require updating. If at any time these estimates indicate that the contract will be unprofitable, the entire estimated loss for the remainder of the contract is recorded immediately. For other types of services contracts, any losses are recorded as incurred.

In some services contracts, the company bills the client prior to recognizing revenue from performing the services. Deferred income of \$4,994 million and \$5,106 million at December 31, 2020 and 2019, respectively, is included in the Consolidated Balance Sheet. In other services contracts, the company performs the services prior to billing the client. When the company performs services prior to billing the client in design and build contracts, the right to consideration is typically subject to milestone completion or client acceptance and the unbilled accounts receivable is classified as a contract asset. At December 31, 2020 and 2019, contract assets for services contracts of \$448 million and \$424 million, respectively, are included in prepaid expenses and other current assets in the Consolidated Balance Sheet. The remaining amount of unbilled accounts receivable of \$1,008 million and \$1,071 million at December 31, 2020 and 2019, respectively, is included in notes and accounts receivable—trade in the Consolidated Balance Sheet.

Billings usually occur in the month after the company performs the services or in accordance with specific contractual provisions.

Hardware

The company's hardware offerings include the sale or lease of system servers and storage solutions. The capabilities of these products can also be delivered through as-a-Service or cloud delivery models, such as Storage-as-a-Service. The company also offers installation

services for its more complex hardware products. Hardware offerings are often sold with distinct maintenance services, described in the Services section above.

Revenue from hardware sales is recognized when control has transferred to the customer which typically occurs when the hardware has been shipped to the client, risk of loss has transferred to the client and the company has a present right to payment for the hardware. In limited circumstances when a hardware sale includes client acceptance provisions, revenue is recognized either when client acceptance has been obtained, client acceptance provisions have lapsed, or the company has objective evidence that the criteria specified in the client acceptance provisions have been satisfied. Revenue from hardware sales-type leases is recognized at the beginning of the lease term. Revenue from rentals and operating leases is recognized on a straight-line basis over the term of the rental or lease.

Revenue from as-a-Service arrangements is recognized either on a straight-line basis or on a usage basis as described in the Services section above. Installation services are accounted for as distinct performance obligations with revenue recognized as the services are performed. Shipping and handling activities that occur after the client has obtained control of a product are accounted for as an activity to fulfill the promise to transfer the product rather than as an additional promised service and, therefore, no revenue is deferred and recognized over the shipping period.

Software

The company's software offerings include cognitive applications, which contain many of the company's strategic areas including analytics, data and security; cloud and data platforms, which contain the company's distributed middleware and data platform software, including Red Hat; transaction processing platforms, which primarily supports mission-critical systems for clients; and, operating systems software, which provides operating systems for IBM Z and Power Systems hardware. These offerings include proprietary software and open source software, and many can be delivered entirely or partially through as-a-Service or cloud delivery models, while others are delivered as on-premise software licenses.

Revenue from proprietary perpetual (one-time charge) license software is recognized at a point in time at the inception of the arrangement when control transfers to the client, if the software license is distinct from the post-contract support (PCS) offered by the company. In limited circumstances, when the software requires continuous updates to provide the intended functionality, the software license and PCS are not distinct and revenue for the single performance obligation is recognized over time as the PCS is provided. This is only applicable to certain security software perpetual licenses offered by the company.

Revenue from proprietary term license software is recognized at a point in time for the committed term of the contract (which is typically one month due to client termination rights), unless consideration depends on client usage, in which case revenue is recognized when the usage occurs. Clients may contract to convert their existing IBM term license software into perpetual license software plus PCS. When proprietary term license software is converted to perpetual license software, the consideration becomes fixed with no cancellability and, therefore, revenue for the perpetual license is recognized upon conversion, consistent with the accounting for other perpetual licenses, as described above. PCS revenue is recognized as described below.

The company also has open source software offerings. Since open source software is offered under an open source licensing model and therefore, the license is available for free, the standalone selling price is zero. As such, when the license is sold with PCS or other products and services, no consideration is allocated to the license when it is a distinct performance obligation and therefore no revenue is recognized when control of the license transfers to the client. Revenue is recognized over the PCS period. In certain cases, open source software is bundled with proprietary software and, if the open source software is not considered distinct, the software bundle (e.g., Cloud Pak) is accounted for under a proprietary software model.

Revenue from PCS is recognized over the contract term on a straight-line basis because the company is providing a service of standing ready to provide support, when-and-if needed, and is providing unspecified software upgrades on a when-and-if available basis over the contract term.

Revenue from software hosting or Software-as-a-Service arrangements is recognized either on a straight-line basis or on a usage basis as described in the Services section above. In software hosting arrangements, the rights provided to the client (e.g., ownership of a license, contract termination provisions and the feasibility of the client to operate the software) are considered in determining whether the arrangement includes a license. In arrangements that include a software license, the associated revenue is recognized in accordance with the software license recognition policy above rather than over time as a service.

Financing

Financing income attributable to sales-type leases, direct financing leases and loans is recognized on the accrual basis using the effective interest method. Operating lease income is recognized on a straight-line basis over the term of the lease.

Standalone Selling Price

The company allocates the transaction price to each performance obligation on a relative standalone selling price basis. The standalone selling price (SSP) is the price at which the company would sell a promised product or service separately to a client. In most cases, the company is able to establish SSP based on the observable prices of products or services sold separately in comparable circumstances to similar clients. The company typically establishes SSP ranges for its products and services which are reassessed on a periodic basis or when facts and circumstances change.

In certain instances, the company may not be able to establish a SSP range based on observable prices and the company estimates SSP. The company estimates SSP by considering multiple factors including, but not limited to, overall market conditions, including geographic or regional specific factors, competitive positioning, competitor actions, internal costs, profit objectives and pricing practices. Additionally, in certain circumstances, the company may estimate SSP for a product or service by applying the residual approach. This approach is most commonly used when certain perpetual software licenses are only sold bundled with one year of PCS and a price has not been established for the software. Estimating SSP is a formal process that includes review and approval by the company's management.

Services Costs

Recurring operating costs for services contracts are recognized as incurred. For fixed-price design and build contracts, the costs of external hardware and software accounted for under the cost-to-cost measure of progress are deferred and recognized based on the labor costs incurred to date (i.e., the measure of progress), as a percentage of the total estimated labor costs to fulfill the contract as control transfers over time for these performance obligations. Certain eligible, nonrecurring costs (i.e., setup costs) incurred in the initial phases of outsourcing contracts and other cloud-based services contracts, including Software-as-a-Service arrangements, are capitalized when the costs relate directly to the contract, the costs generate or enhance resources of the company that will be used in satisfying the performance obligation in the future, and the costs are expected to be recovered. These costs consist of transition and setup costs related to the installation of systems and processes and other deferred fulfillment costs, including, for example, prepaid assets used in services contracts (i.e., prepaid software or prepaid maintenance). Capitalized costs are amortized on a straight-line basis over the expected period of benefit, which includes anticipated contract renewals or extensions, consistent with the transfer to the client of the services to which the asset relates. Additionally, fixed assets associated with these contracts are capitalized and depreciated on a straight-line basis over the expected useful life of the asset. If an asset is contract specific, then the depreciation period is the shorter of the useful life of the asset or the contract term. Amounts paid to clients in excess of the fair value of acquired assets used in outsourcing arrangements are deferred and amortized on a straight-line basis as a reduction of revenue over the expected period of benefit. The company performs periodic reviews to assess the recoverability of deferred contract transition and setup costs. If the carrying amount is deemed not recoverable, an impairment loss is recognized. Refer to note C, "Revenue Recognition," for the amount of deferred costs to fulfill a contract at December 31, 2020 and 2019.

In situations in which an outsourcing contract is terminated, the terms of the contract may require the client to reimburse the company for the recovery of unbilled accounts receivable, unamortized deferred contract costs and additional costs incurred by the company to transition the services.

Software Costs

Costs that are related to the conceptual formulation and design of licensed software programs are expensed as incurred to research, development and engineering expense; costs that are incurred to produce the finished product after technological feasibility has been established are capitalized as an intangible asset. Capitalized amounts are amortized on a straight-line basis over periods ranging up to three years and are recorded in software cost within cost of sales. The company performs periodic reviews to ensure that unamortized program costs remain recoverable from future revenue. Costs to support or service licensed programs are charged to software cost within cost of sales as incurred.

The company capitalizes certain costs that are incurred to purchase or develop internal-use software. Internal-use software programs also include software used by the company to deliver Software-as-a-Service when the client does not receive a license to the software and the company has no substantive plans to market the software externally. Capitalized costs are amortized on a straight-line basis over periods ranging up to three years and are recorded in selling, general and administrative expense or cost of sales, depending on whether the software is used by the company in revenue generating transactions. Additionally, the company may capitalize certain types of implementation costs and amortize them over the term of the arrangement when the company is a customer in a cloud-computing arrangement.

Incremental Costs of Obtaining a Contract

Incremental costs of obtaining a contract (e.g., sales commissions) are capitalized and amortized on a straight-line basis over the expected customer relationship period if the company expects to recover those costs. The expected customer relationship period is determined based on the average customer relationship period, including expected renewals, for each offering type and ranges from three to six years. Expected renewal periods are only included in the expected customer relationship period if commission amounts paid upon renewal are not commensurate with amounts paid on the initial contract. Incremental costs of obtaining a contract include only those costs the company incurs to obtain a contract that it would not have incurred if the contract had not been obtained. The company has determined that certain commissions programs meet the requirements to be capitalized. Some commission programs are not subject to capitalization as the commission expense is paid and recognized as the related revenue is recognized. Additionally, as a practical expedient, the company expenses costs to obtain a contract as incurred if the amortization period would have been a year or less. These costs are included in selling, general and administrative expenses.

Product Warranties

The company offers warranties for its hardware products that generally range up to three years, with the majority being either one or three years. Any cost of standard warranties is accrued when the corresponding revenue is recognized. The company estimates its standard warranty costs for products based on historical warranty claim experience and estimates of future spending and applies this estimate to the revenue stream for products under warranty. Estimated future costs for warranties applicable to revenue recognized in the current period are charged to cost of sales. The warranty liability is reviewed quarterly to verify that it properly reflects the remaining obligation based on the anticipated expenditures over the balance of the obligation period. Adjustments are made when actual warranty claim experience differs from estimates. Costs from fixed-price support or maintenance contracts, including extended warranty contracts, are recognized as incurred.

Revenue from extended warranty contracts is initially recorded as deferred income and subsequently recognized on a straight-line basis over the delivery period because the company is providing a service of standing ready to provide services over such term.

Refer to note R, "Commitments & Contingencies," for additional information.

Shipping and Handling

Costs related to shipping and handling are recognized as incurred and included in cost in the Consolidated Income Statement.

Expense and Other Income

Selling, General and Administrative

Selling, general and administrative (SG&A) expense is charged to income as incurred, except for certain sales commissions, which are capitalized and amortized. For further information regarding capitalizing sales commissions, see "Incremental Costs of Obtaining a Contract" above. Expenses of promoting and selling products and services are classified as selling expense and, in addition to sales commissions, include such items as compensation, advertising and travel. General and administrative expense includes such items as compensation, legal costs, office supplies, non-income taxes, insurance and office rental. In addition, general and administrative expense includes other operating items such as an allowance for credit losses, workforce rebalancing charges for contractually obligated payments to employees terminated in the ongoing course of business, acquisition costs related to business combinations, amortization of certain intangible assets and environmental remediation costs.

Advertising and Promotional Expense

The company expenses advertising and promotional costs as incurred. Cooperative advertising reimbursements from vendors are recorded net of advertising and promotional expense in the period in which the related advertising and promotional expense is incurred. Advertising and promotional expense, which includes media, agency and promotional expense, was \$1,542 million, \$1,647 million and \$1,466 million in 2020, 2019 and 2018, respectively, and is recorded in SG&A expense in the Consolidated Income Statement.

Research, Development and Engineering

Research, development and engineering (RD&E) costs are expensed as incurred. Software costs that are incurred to produce the finished product after technological feasibility has been established are capitalized as an intangible asset.

Intellectual Property and Custom Development Income

The company licenses and sells the rights to certain of its intellectual property (IP) including internally developed patents, trade secrets and technological know-how. Certain IP transactions to third parties are licensing/royalty-based and others are transaction-based sales/other transfers. Income from licensing arrangements is recognized at the inception of the license term if the nature of the company's promise is to provide a right to use the company's intellectual property as it exists at that point in time (i.e., the license is functional intellectual property) and control has transferred to the client. Income is recognized over time if the nature of the company's promise is to provide a right to access the company's intellectual property throughout the license period (i.e., the license is symbolic intellectual property), such as a trademark license. Licensing arrangements include IP partnerships whereby a business partner licenses source code from the company and becomes responsible for developing, maintaining and enhancing the product. The company retains its customers and go-to-market capability and any royalty due to the partner is recognized in cost of sales. The IP partner has the rights to market the product and its derivative works under its own brand and remits royalty to the company on those sales, which are recorded as royalty-based fees. Depending on the nature of the transaction, an IP partnership would be accounted for as a divestiture if the company concludes the transaction meets the definition of a business. Income from royalty-based fee arrangements is recognized at the later of when the subsequent sale or usage occurs or the performance obligation to which some or all of the royalty has been allocated has been satisfied (or partially satisfied). The company also enters into cross-licensing arrangements of patents, and income from these arrangements is recognized when control transfers to the customer. In addition, the company earns income from certain custom development projects with strategic technology partners and specific clients. The company records the income from these projects over time as the company satisfies the performance obligation if the fee is nonrefundable and is not dependent upon the ultimate success of the project.

Other (Income) and Expense

Other (income) and expense includes interest income (other than from Global Financing external transactions), gains and losses on certain derivative instruments, gains and losses from securities and other investments, gains and losses from certain real estate transactions, foreign currency transaction gains and losses, gains and losses from the sale of financial assets, gains and losses from the sale of businesses, other than reported as discontinued operations, and amounts related to accretion of asset retirement obligations. Other (income) and expense also includes certain components of retirement-related costs, including interest costs, expected return on plan assets, amortization of prior service costs/(credits), curtailments and settlements and other net periodic pension/post-retirement benefit costs.

Business Combinations and Intangible Assets Including Goodwill

The company accounts for business combinations using the acquisition method and accordingly, the identifiable assets acquired, the liabilities assumed, and any noncontrolling interest in the acquiree are recorded at their acquisition date fair values. Goodwill represents the excess of the purchase price over the fair value of net assets, including the amount assigned to identifiable intangible assets. The primary drivers that generate goodwill are the value of synergies between the acquired entities and the company and the acquired assembled workforce, neither of which qualifies as a separately identifiable intangible asset. Goodwill recorded in an acquisition is assigned to applicable reporting units based on expected revenues or expected cash flows. Identifiable intangible assets with finite lives are amortized over their useful lives. Amortization of completed technology is recorded in cost, and amortization of all other intangible assets is recorded in SG&A expense. Acquisition-related costs, including advisory, legal, accounting, valuation and pre-close and other costs, are typically expensed in the periods in which the costs are incurred and are recorded in SG&A expense. The results of operations of acquired businesses are included in the Consolidated Financial Statements from the acquisition date.

Impairment

Long-lived assets, other than goodwill, are tested for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. The impairment test is based on undiscounted cash flows and, if impaired, the asset is written down to fair value based on either discounted cash flows or appraised values. Goodwill is tested for impairment at least annually, in the fourth quarter and whenever changes in circumstances indicate an impairment may exist. The goodwill impairment test is performed at the reporting unit level, which is generally at the level of or one level below an operating segment.

Depreciation and Amortization

Property, plant and equipment are carried at cost and depreciated over their estimated useful lives using the straight-line method. The estimated useful lives of certain depreciable assets are as follows: buildings, 30 to 50 years; building equipment, 10 to 20 years; land improvements, 20 years; production, engineering, office and other equipment, 2 to 20 years; and information technology equipment, 1.5 to 5 years. Leasehold improvements are amortized over the shorter of their estimated useful lives or the related lease term, rarely exceeding 25 years.

As noted within the "Software Costs" section of this note, capitalized software costs are amortized on a straight-line basis over periods ranging up to 3 years. Other intangible assets are amortized over periods between 1 and 20 years.

Environmental

The cost of internal environmental protection programs that are preventative in nature are expensed as incurred. When a cleanup program becomes likely, and it is probable that the company will incur cleanup costs and those costs can be reasonably estimated, the company accrues remediation costs for known environmental liabilities.

Asset Retirement Obligations

Asset retirement obligations (ARO) are legal obligations associated with the retirement of long-lived assets and the liability is initially recorded at fair value. The related asset retirement costs are capitalized by increasing the carrying amount of the related assets by the same amount as the liability. Asset retirement costs are subsequently depreciated over the useful lives of the related assets. Subsequent to initial recognition, the company records period-to-period changes in the ARO liability resulting from the passage of time in interest expense and revisions to either the timing or the amount of the original expected cash flows to the related assets.

Defined Benefit Pension and Nonpension Postretirement Benefit Plans

The funded status of the company's defined benefit pension plans and nonpension postretirement benefit plans (retirement-related benefit plans) is recognized in the Consolidated Balance Sheet. The funded status is measured as the difference between the fair value of plan assets and the benefit obligation at December 31, the measurement date. For defined benefit pension plans, the benefit obligation is the projected benefit obligation (PBO), which represents the actuarial present value of benefits expected to be paid upon retirement based on employee services already rendered and estimated future compensation levels. For the nonpension postretirement benefit plans, the benefit obligation is the accumulated postretirement benefit obligation (APBO), which represents the actuarial present value of postretirement benefits attributed to employee services already rendered. The fair value of plan assets represents the current market value of assets held in an irrevocable trust fund, held for the sole benefit of participants, which are invested by the trust fund. Overfunded plans, with the fair value of plan assets exceeding the benefit obligation, are aggregated and recorded as a prepaid pension asset equal to this excess. Underfunded plans, with the benefit obligation exceeding the fair value of plan assets, are aggregated and recorded as a retirement and nonpension postretirement benefit obligation equal to this excess.

The current portion of the retirement and nonpension post-retirement benefit obligations represents the actuarial present value of benefits payable in the next 12 months exceeding the fair value of plan assets, measured on a plan-by-plan basis. This obligation is recorded in compensation and benefits in the Consolidated Balance Sheet.

Net periodic pension and nonpension postretirement benefit cost/(income) is recorded in the Consolidated Income Statement and includes service cost, interest cost, expected return on plan assets, amortization of prior service costs/(credits) and (gains)/losses previously recognized as a component of other comprehensive income/(loss) (OCI) and amortization of the net transition asset remaining in accumulated other comprehensive income/(loss) (AOCI). The service cost component of net benefit cost is recorded in Cost, SG&A and RD&E in the Consolidated Income Statement (unless eligible for capitalization) based on the employees' respective functions. The other components of net benefit cost are presented separately from service cost within other (income) and expense in the Consolidated Income Statement.

(Gains)/losses and prior service costs/(credits) are recognized as a component of OCI in the Consolidated Statement of Comprehensive Income as they arise. Those (gains)/losses and prior service costs/(credits) are subsequently recognized as a component of net periodic cost/(income) pursuant to the recognition and amortization provisions of applicable accounting guidance. (Gains)/losses arise as a result of differences between actual experience and assumptions or as a result of changes in actuarial assumptions. Prior service costs/(credits) represent the cost of benefit changes attributable to prior service granted in plan amendments.

The measurement of benefit obligations and net periodic cost/(income) is based on estimates and assumptions approved by the company's management. These valuations reflect the terms of the plans and use participant-specific information such as compensation, age and years of service, as well as certain assumptions, including estimates of discount rates, expected return on plan assets, rate of compensation increases, interest crediting rates and mortality rates.

Defined Contribution Plans

The company's contribution for defined contribution plans is recorded when the employee renders service to the company. The charge is recorded in Cost, SG&A and RD&E in the Consolidated Income Statement based on the employees' respective functions.

Stock-Based Compensation

Stock-based compensation represents the cost related to stock-based awards granted to employees. The company measures stock-based compensation cost at the grant date, based on the estimated fair value of the award and recognizes the cost on a straight-line basis (net of estimated forfeitures) over the employee requisite service period. The company grants its employees Restricted Stock Units (RSUs), including Retention Restricted Stock Units (RRSUs); Performance Share Units (PSUs); and periodically grants stock options. RSUs are stock awards granted to employees that entitle the holder to shares of common stock as the award vests, typically over a one- to five-year period. PSUs are stock awards where the number of shares ultimately received by the employee depends on the company's performance against specified targets and typically vest over a three-year period. Over the performance period, the number of shares that will be issued is adjusted based upon the probability of achievement of performance targets. The ultimate number of shares issued and the related compensation cost recognized as expense will be based on a comparison of the final performance metrics to the specified targets. Dividend equivalents are not paid on the stock awards described above. The fair value of the awards is determined and fixed on the grant date based on the company's stock price, adjusted for the exclusion of dividend equivalents where applicable and for PSUs assumes that performance targets will be achieved. The company estimates the fair value of stock options using a Black-Scholes valuation model. Stock-based compensation cost is recorded in Cost, SG&A, and RD&E in the Consolidated Income Statement based on the employees' respective functions.

The company records deferred tax assets for awards that result in deductions on the company's income tax returns, based on the amount of compensation cost recognized and the relevant statutory tax rates. The differences between the deferred tax assets recognized for financial reporting purposes and the actual tax deduction reported on the income tax return are recorded as a benefit or expense to the provision for income taxes in the Consolidated Income Statement.

Income Taxes

Income tax expense is based on reported income before income taxes. Deferred income taxes reflect the tax effect of temporary differences between asset and liability amounts that are recognized for financial reporting purposes and the amounts that are recognized for income tax purposes. These deferred taxes are measured by applying currently enacted tax laws. U.S. tax reform introduced Global Intangible Low-Taxed Income (GILTI), which subjects a U.S. shareholder to current tax on income earned by certain foreign subsidiaries. Beginning in 2018, the company elected to include GILTI in measuring deferred taxes. Valuation allowances are recognized to reduce deferred tax assets to the amount that will more likely than not be realized. In assessing the need for a valuation allowance, management considers all available evidence for each jurisdiction including past operating results, estimates of future taxable income and the feasibility of ongoing tax planning strategies/actions. When the company changes its determination as to the amount of deferred tax assets that can be realized, the valuation allowance is adjusted with a corresponding impact to income tax expense in the period in which such determination is made.

The company recognizes additional tax liabilities when the company believes that certain positions may not be fully sustained upon review by tax authorities. Benefits from tax positions are measured at the largest amount of benefit that is greater than 50 percent likely of being realized upon settlement. The noncurrent portion of tax liabilities is included in other liabilities in the Consolidated Balance Sheet. To the extent that new information becomes available which causes the company to change its judgment regarding the adequacy of existing tax liabilities, such changes to tax liabilities will impact income tax expense in the period in which such determination is made. Interest and penalties, if any, related to accrued liabilities for potential tax assessments are included in income tax expense.

Translation of Non-U.S. Currency Amounts

Assets and liabilities of non-U.S. subsidiaries that have a local functional currency are translated to U.S. dollars at year-end exchange rates. Translation adjustments are recorded in OCI. Income and expense items are translated at weighted-average rates of exchange prevailing during the year.

Inventory, property, plant and equipment—net and other non-monetary assets and liabilities of non-U.S. subsidiaries and branches that operate in U.S. dollars are translated at the approximate exchange rates prevailing when the company acquired the assets or liabilities. All other assets and liabilities denominated in a currency other than U.S. dollars are translated at year-end exchange rates with the transaction gain or loss recognized in other (income) and expense. Income and expense items are translated at the weighted-average rates of exchange prevailing during the year. These translation gains and losses are included in net income for the period in which exchange rates change.

Derivative Financial Instruments

The company uses derivative financial instruments primarily to manage foreign currency and interest rate risk, and to a lesser extent, equity and credit risk. The company does not use derivative financial instruments for trading or speculative purposes. Derivatives that qualify for hedge accounting can be designated as either cash flow hedges, net investment hedges, or fair value hedges. The company may enter into derivative contracts that economically hedge certain of its risks, even when hedge accounting does not apply, or the company elects not to apply hedge accounting.

Derivatives are recognized in the Consolidated Balance Sheet at fair value on a gross basis as either assets or liabilities and classified as current or noncurrent based upon whether the maturity of the instrument is less than or greater than 12 months.

Changes in the fair value of derivatives designated as a cash flow hedge are recorded, net of applicable taxes, in OCI and subsequently reclassified into the same income statement line as the hedged exposure when the underlying hedged item is recognized in earnings. Effectiveness for net investment hedging derivatives is measured on a spot-to-spot basis. Changes in the fair value of highly effective net investment hedging derivatives and other non-derivative financial instruments designated as net investment hedges are recorded as foreign currency translation adjustments in AOCI. Changes in the fair value of the portion of a net investment hedging derivative excluded from the assessment of effectiveness are recorded in interest expense and cost of financing. Changes in the fair value of interest rate derivatives designated as a fair value hedge and the offsetting changes in the fair value of the underlying hedged exposure are recorded in interest expense and cost of financing. Changes in the fair value of derivatives not designated as hedges are reported in earnings primarily in other (income) and expense. See note T, "Derivative Financial Instruments," for further information.

The cash flows associated with derivatives designated as fair value and cash flow hedges are reported in cash flows from operating activities in the Consolidated Statement of Cash Flows. Cash flows from derivatives designated as net investment hedges and derivatives not designated as hedges are reported in cash flows from investing activities in the Consolidated Statement of Cash Flows. Cash flows from derivatives designated as hedges of foreign currency denominated debt directly associated with the settlement of the principal are reported in payments to settle debt in cash flows from financing activities in the Consolidated Statement of Cash Flows.

Financial Instruments

In determining the fair value of its financial instruments, the company uses a variety of methods and assumptions that are based on market conditions and risks existing at each balance sheet date. See note I, "Financial Assets & Liabilities," for further information. All methods of assessing fair value result in a general approximation of value, and such value may never actually be realized.

Fair Value Measurement

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The company classifies certain assets and liabilities based on the following fair value hierarchy:

- Level 1—Quoted prices (unadjusted) in active markets for identical assets or liabilities that can be accessed at the measurement date;
- Level 2—Inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly; and
- Level 3—Unobservable inputs for the asset or liability.

When available, the company uses unadjusted quoted market prices in active markets to measure the fair value and classifies such items as Level 1. If quoted market prices are not available, fair value is based upon internally developed models that use current market-based or independently sourced market parameters such as interest rates and currency rates. Items valued using internally generated models are classified according to the lowest level input or value driver that is significant to the valuation.

The determination of fair value considers various factors including interest rate yield curves and time value underlying the financial instruments. For derivatives and debt securities, the company uses a discounted cash flow analysis using discount rates commensurate with the duration of the instrument.

In determining the fair value of financial instruments, the company considers certain market valuation adjustments to the "base valuations" calculated using the methodologies described below for several parameters that market participants would consider in determining fair value:

- Counterparty credit risk adjustments are applied to financial instruments, taking into account the actual credit risk of a counterparty as observed in the credit default swap market to determine the true fair value of such an instrument.
- Credit risk adjustments are applied to reflect the company's own credit risk when valuing all liabilities measured at fair value. The methodology is consistent with that applied in developing counterparty credit risk adjustments, but incorporates the company's own credit risk as observed in the credit default swap market.

The company holds investments primarily in time deposits, certificates of deposit, and U.S. government debt that are designated as available-for-sale. The primary objective of the company's cash and debt investment portfolio is to maintain principal by investing in very liquid and highly rated investment grade securities.

Available-for-sale securities are measured for impairment on a recurring basis by comparing the security's fair value with its amortized cost basis. Effective January 1, 2020 with the adoption of the new standard on credit losses, if the fair value of the security falls below its amortized cost basis, the change in fair value is recognized in the period the impairment is identified when the loss is due to credit

factors. The change in fair value due to non-credit factors is recorded in other comprehensive income when the company does not intend to sell and has the ability to hold the investment. The company's standard practice is to hold all of its debt security investments classified as available-for-sale until maturity. There were no impairments for credit losses and no material non-credit impairments recognized for the year ended December 31, 2020. Prior to the adoption of the new standard, available-for-sale securities were measured for impairment using an other-than-temporary impairment model. No impairment was recorded for the years ended December 31, 2019 and 2018.

Certain nonfinancial assets such as property, plant and equipment, land, goodwill and intangible assets are subject to nonrecurring fair value measurements if they are deemed to be impaired. The impairment models used for nonfinancial assets depend on the type of asset. There were no material impairments of nonfinancial assets for the years ended December 31, 2020, 2019 and 2018.

Cash Equivalents

All highly liquid investments with maturities of three months or less at the date of purchase are considered to be cash equivalents.

Marketable Securities

The company measures equity investments at fair value with changes recognized in net income.

Debt securities included in current assets represent securities that are expected to be realized in cash within one year of the balance sheet date. Long-term debt securities and alliance equity securities are included in investments and sundry assets. Debt securities are considered available-for-sale and are reported at fair value with unrealized gains and losses, net of applicable taxes, in OCI. The realized gains and losses on available-for-sale debt securities are included in other (income) and expense in the Consolidated Income Statement. Realized gains and losses are calculated based on the specific identification method.

Inventory

Raw materials, work in process and finished goods are stated at the lower of average cost or net realizable value.

Notes and Accounts Receivable—Trade and Contract Assets

The company classifies the right to consideration in exchange for products or services transferred to a client as either a receivable or a contract asset. A receivable is a right to consideration that is unconditional as compared to a contract asset which is a right to consideration that is conditional upon factors other than the passage of time. The majority of the company's contract assets represent unbilled amounts related to design and build services contracts when the cost-to-cost method of revenue recognition is utilized, revenue recognized exceeds the amount billed to the client, and the right to consideration is subject to milestone completion or client acceptance. Contract assets are generally classified as current and are recorded on a net basis with deferred income (i.e., contract liabilities) at the contract level.

Financing Receivables

Financing receivables primarily consist of client loan and installment payment receivables (loans) and investment in sales-type and direct financing leases (collectively referred to as client financing receivables) and commercial financing receivables. Leases are accounted for in accordance with lease accounting standards. Loans, which are generally unsecured, are primarily for software and services. Commercial financing receivables are primarily for working capital financing to suppliers, distributors and resellers of IBM products and services. Loans and commercial financing receivables are recorded at amortized cost, which approximates fair value.

Transfers of Financial Assets

The company enters into arrangements to sell certain financial assets (primarily notes and accounts receivable—trade and financing receivables) to third-party financial institutions. For a transfer of financial assets to be considered a sale, the asset must be legally isolated from the company and the purchaser must have control of the asset. Determining whether all the requirements have been met includes an evaluation of legal considerations, the extent of the company's continuing involvement with the assets transferred and any other relevant consideration. When the true sale criteria are met, the company derecognizes the carrying value of the financial asset transferred and recognizes a net gain or loss on the sale. The proceeds from these arrangements are reflected as cash provided by operating activities in the Consolidated Statement of Cash Flows. If the true sale criteria are not met, the transfer is considered a secured borrowing and the financial asset remains on the Consolidated Balance Sheet with proceeds from the sale recognized as debt and recorded as cash flows from financing activities in the Consolidated Statement of Cash Flows.

Arrangements to sell notes and accounts receivable—trade are used in the normal course of business as part of the company's cash and liquidity management. Facilities primarily in the U.S., Canada and several countries in Europe enable the company to sell certain notes and accounts receivable—trade, without recourse, to third parties in order to manage credit, collection, concentration and currency risk. The gross amounts sold (the gross proceeds) under these arrangements were \$3.1 billion, \$2.1 billion and \$2.2 billion for the years ended December 31, 2020, 2019 and 2018, respectively. Within the notes and accounts receivables—trade sold and derecognized from the Consolidated Balance Sheet, \$0.5 billion, \$0.5 billion, and \$0.9 billion remained uncollected from customers at December 31, 2020, 2019 and 2018, respectively. The fees and the net gains and losses associated with the transfer of receivables were not material for any of the periods presented. Refer to note K, "Financing Receivables," for more information on transfers of financing receivables.

Allowance for Credit Losses

Effective January 1, 2020, the company adopted the new accounting standard related to current expected credit losses. The standard applies to financial assets measured at amortized cost, including loans, net investments in leases, trade accounts receivable and certain off-balance sheet commitments. As of the effective date, the company estimates its allowance for current expected credit losses based on an expected loss model, compared to prior periods which were estimated using an incurred loss model. The impact related to adopting the new standard was not material. Certain changes resulting from the new standard impacted the company's description of its significant accounting policies compared to 2019. For further information regarding the adoption of the new standard, see note B, "Accounting Changes."

Receivables are recorded concurrent with billing and shipment of a product and/or delivery of a service to customers. An allowance for uncollectible trade receivables and contract assets, if needed, is estimated based on specific customer situations, current and future expected economic conditions, past experiences of losses, as well as an assessment of potential recoverability of the balance due.

The company estimates its allowances for expected credit losses for financing receivables by considering past events, including any historical default, historical concessions and resulting troubled debt restructurings, current economic conditions, any non-freestanding mitigating credit enhancements, and certain forward-looking information, including reasonable and supportable forecasts. As of January 1, 2020, the methodologies that the company uses to calculate its financing receivables reserves, which are applied consistently to its different portfolios, are as follows:

Individually Evaluated—The company reviews all financing receivables considered at risk quarterly, and performs an analysis based upon current information available about the client, such as financial statements, news reports, published credit ratings, current market-implied credit analysis, as well as collateral net of repossession cost, prior collection history and current and future expected economic conditions. For loans that are collateral dependent, impairment is measured using the fair value of the collateral when foreclosure is probable. Using this information, the company determines the expected cash flow for the receivable and calculates an estimate of the potential loss and the probability of loss. For those accounts in which the loss is probable, the company records a specific reserve.

Collectively Evaluated—The company determines its allowances for credit losses for collectively evaluated financing receivables (unallocated) based on two portfolio segments: client financing receivables and commercial financing receivables. The company further segments the portfolio into three classes: Americas, Europe/Middle East/Africa (EMEA) and Asia Pacific.

For client financing receivables, the company uses a credit loss model to calculate allowances based on its internal loss experience and current conditions and forecasts, by class of financing receivable. The company records an unallocated reserve that is calculated by applying a reserve rate to its portfolio, excluding accounts that have been individually evaluated and specifically reserved. This reserve rate is based upon credit rating, probability of default, term and loss history. The allowance is adjusted quarterly for expected recoveries of amounts that were previously written off or are expected to be written off. Recoveries cannot exceed the aggregated amount of the previous write-off or expected write-off.

The company considers forward-looking macroeconomic variables such as gross domestic product, unemployment rates, equity prices and corporate profits when quantifying the impact of economic forecasts on its client financing receivables allowance for expected credit losses. Macroeconomic variables may vary by class of financing receivables based on historical experiences, portfolio composition and current environment. The company also considers the impact of current conditions and economic forecasts relating to specific industries, geographical areas, and client credit ratings, in addition to performing a qualitative review of credit risk factors across the portfolio. Under this approach, forecasts of these variables over two years are considered reasonable and supportable. Beyond two years, the company reverts to long-term average loss experience. Forward-looking estimates require the use of judgment, particularly in times of economic uncertainty.

The portfolio of commercial financing receivables is short term in nature and any allowance for these assets is estimated based on a combination of write-off history and current economic conditions, excluding any individually evaluated accounts.

Other Credit-Related Policies

Past Due—The company views receivables as past due when payment has not been received after 90 days, measured from the original billing date.

Non-Accrual—Non-accrual assets include those receivables (impaired loans or nonperforming leases) with specific reserves and other accounts for which it is likely that the company will be unable to collect all amounts due according to original terms of the lease or loan agreement. Interest income recognition is discontinued on these receivables. Cash collections are first applied as a reduction to principal outstanding. Any cash received in excess of principal payments outstanding is recognized as interest income. Receivables may be removed from non-accrual status, if appropriate, based upon changes in client circumstances, such as a sustained history of payments.

Write-Off—Receivable losses are charged against the allowance in the period in which the receivable is deemed uncollectible. Subsequent recoveries, if any, are credited to the allowance. Write-offs of receivables and associated reserves occur to the extent that the customer is no longer in operation and/or, there is no reasonable expectation of additional collections or repossession.

Leases

The company conducts business as both a lessee and a lessor. In its ordinary course of business, the company enters into leases as a lessee for property, plant and equipment. The company is also the lessor of certain equipment, mainly through its Global Financing segment.

When procuring goods or services, or upon entering into a contract with its clients, the company determines whether an arrangement contains a lease at its inception. As part of that evaluation, the company considers whether there is an implicitly or explicitly identified asset in the arrangement and whether the company, as the lessee, or the client, if the company is the lessor, has the right to control the use of that asset.

Accounting for Leases as a Lessee

When the company is the lessee, all leases with a term of more than 12 months are recognized as right-of-use (ROU) assets and associated lease liabilities in the Consolidated Balance Sheet. The lease liabilities are measured at the lease commencement date and determined using the present value of the lease payments not yet paid and the company's incremental borrowing rate, which approximates the rate at which the company would borrow on a secured basis in the country where the lease was executed. The interest rate implicit in the lease is generally not determinable in transactions where the company is the lessee. The ROU asset equals the lease liability adjusted for any initial direct costs (IDCs), prepaid rent and lease incentives. The company's variable lease payments generally relate to payments tied to various indexes, non-lease components and payments above a contractual minimum fixed amount.

Operating leases are included in operating right-of-use assets—net, current operating lease liabilities and operating lease liabilities in the Consolidated Balance Sheet. Finance leases are included in property, plant and equipment, short-term debt and long-term debt in the Consolidated Balance Sheet. The lease term includes options to extend or terminate the lease when it is reasonably certain that the company will exercise that option.

The company made a policy election to not recognize leases with a lease term of 12 months or less in the Consolidated Balance Sheet.

For all asset classes, the company has elected the lessee practical expedient to combine lease and non-lease components (e.g., maintenance services) and account for the combined unit as a single lease component. A significant portion of the company's lease portfolio is real estate, which are mainly accounted for as operating leases, and are primarily used for corporate offices and data centers. The average term of the real estate leases is approximately five years. The company also has equipment leases, such as IT equipment and vehicles, which have lease terms that range from two to five years. For certain of these operating and finance leases, the company applies a portfolio approach to account for the lease assets and lease liabilities.

Accounting for Leases as a Lessor

The company typically enters into leases as an alternative means of realizing value from equipment that it would otherwise sell. Assets under lease include new and used IBM equipment and certain OEM products. IBM equipment generally consists of IBM Z, Power Systems and Storage Systems products.

Lease payments due to IBM are typically fixed and paid in equal installments over the lease term. The majority of the company's leases do not contain variable payments that are dependent on an index or a rate. Variable lease payments that do not depend on an index or a rate (e.g., property taxes), that are paid directly by the company and are reimbursed by the client, are recorded as revenue, along with the related cost, in the period in which collection of these payments is probable. Payments that are made directly by the client to a third party, including certain property taxes and insurance, are not considered part of variable payments and therefore are not recorded by the company. The company has made a policy election to exclude from consideration in contracts all collections from sales and other similar taxes.

The company's payment terms for leases are typically unconditional. Therefore, in an instance when the client requests to terminate the lease prior to the end of the lease term, the client would typically be required to pay the remaining lease payments in full. At the end of the lease term, the company allows the client to either return the equipment, purchase the equipment at the then-current fair market value or at a pre-stated purchase price or renew the lease based on mutually agreed upon terms.

When lease arrangements include multiple performance obligations, the company allocates the consideration in the contract between the lease components and the non-lease components on a relative standalone selling price basis.

Sales-Type and Direct Financing Leases

For a sales-type or direct financing lease, the carrying amount of the asset is derecognized from inventory and a net investment in the lease is recorded. For a sales-type lease, the net investment in the lease is measured at commencement date as the sum of the lease

receivable and the estimated residual value of the equipment less unearned income and allowance for credit losses. Any selling profit or loss arising from a sales-type lease is recorded at lease commencement. Selling profit or loss is presented on a gross basis when the company enters into a lease to realize value from a product that it would otherwise sell in its ordinary course of business, whereas in transactions where the company enters into a lease for the purpose of generating revenue by providing financing, the selling profit or loss is presented on a net basis. Under a sales-type lease, initial direct costs are expensed at lease commencement. Over the term of the lease, the company recognizes finance income on the net investment in the lease and any variable lease payments, which are not included in the net investment in the lease.

For a direct financing lease, the net investment in the lease is measured similarly to a sales-type lease, however, the net investment in the lease is reduced by any selling profit. In a direct financing lease, the selling profit and initial direct costs are deferred at commencement and recognized over the lease term. The company rarely enters into direct financing leases.

The estimated residual value represents the estimated fair value of the equipment under lease at the end of the lease. Estimating residual value is a risk unique to financing activities, and management of this risk is dependent upon the ability to accurately project future equipment values. The company has insight into product plans and cycles for both the IBM and OEM IT products under lease. The company estimates the future fair value of leased equipment by using historical models, analyzing the current market for new and used equipment and obtaining forward-looking product information such as marketing plans and technology innovations.

The company optimizes the recovery of residual values by extending lease arrangements with, or selling leased equipment to existing clients. The company has historically managed residual value risk both through insight into its own product cycles and monitoring of OEM IT product announcements. The company periodically reassesses the realizable value of its lease residual values. Anticipated decreases in specific future residual values that are considered to be other-than-temporary are recognized immediately upon identification and are recorded as an adjustment to the residual value estimate. For sales-type and direct financing leases, this reduction lowers the recorded net investment and is recognized as a loss charged to finance income in the period in which the estimate is changed, as well as an adjustment to unearned income to reduce future-period financing income.

Operating Leases

Equipment provided to clients under an operating lease is carried at cost within property, plant and equipment in the Consolidated Balance Sheet and depreciated over the lease term using the straight-line method, generally ranging from one to four years. The depreciable basis is the original cost of the equipment less the estimated residual value of the equipment at the end of the lease term.

At commencement of an operating lease, IDCs are deferred. As lease payments are made, the company records sales revenue over the lease term. IDCs are amortized over the lease term on the same basis as lease income is recorded.

Assets under operating leases are tested for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. The impairment test is based on undiscounted cash flows, and, if impaired, the asset is written down to fair value based on either discounted cash flows or appraised values.

Common Stock

Common stock refers to the \$.20 par value per share capital stock as designated in the company's Certificate of Incorporation. Treasury stock is accounted for using the cost method. When treasury stock is reissued, the value is computed and recorded using a weighted-average basis.

Earnings Per Share of Common Stock

Earnings per share (EPS) is computed using the two-class method, which determines EPS for each class of common stock and participating securities according to dividends and dividend equivalents and their respective participation rights in undistributed earnings. Basic EPS of common stock is computed by dividing net income by the weighted-average number of common shares outstanding for the period. Diluted EPS of common stock is computed on the basis of the weighted-average number of shares of common stock plus the effect of dilutive potential common shares outstanding during the period using the treasury stock method. Dilutive potential common shares include outstanding stock awards, convertible notes and stock options.

NOTE B. ACCOUNTING CHANGES

New Standards to be Implemented

Simplifying the Accounting for Income Taxes

Standard/Description—Issuance date: December 2019. This guidance simplifies various aspects of income tax accounting by removing certain exceptions to the general principle of the guidance and clarifies and amends existing guidance to improve consistency in application.

Effective Date and Adoption Considerations—The guidance was effective January 1, 2021 and early adoption was permitted. The company adopted the guidance as of the effective date.

Effect on Financial Statements or Other Significant Matters—The guidance is not expected to have a material impact in the consolidated financial results.

Standards Implemented

Reference Rate Reform

Standard/Description—Issuance date: March 2020, with amendments in 2021. This guidance provides optional expedients and exceptions for applying GAAP to contract modifications, hedging relationships, and other transactions that reference London Interbank Offered Rate (LIBOR) or another reference rate expected to be discontinued, subject to meeting certain criteria.

Effective Date and Adoption Considerations—The guidance is effective as of March 12, 2020 through December 31, 2022.

Effect on Financial Statements or Other Significant Matters—The company made a policy election in the first quarter of 2020 to adopt the practical expedient which allows for the continuation of fair value hedge accounting for interest rate derivative contracts upon the transition from LIBOR to Secured Overnight Financing Rate (SOFR) or another reference rate alternative, without any impact to the Consolidated Income Statement. The company is continuing to evaluate the potential impact of the replacement of the LIBOR benchmark on its interest rate risk management activities; however, it is not expected to have a material impact in the consolidated financial results.

Simplifying the Test for Goodwill Impairment

Standard/Description—Issuance date: January 2017. This guidance simplifies the goodwill impairment test by removing Step 2. It also requires disclosure of any reporting units that have zero or negative carrying amounts if they have goodwill allocated to them.

Effective Date and Adoption Considerations—The guidance was effective January 1, 2020 and early adoption was permitted. The company adopted the guidance on a prospective basis as of the effective date.

Effect on Financial Statements or Other Significant Matters—The guidance did not have a material impact in the consolidated financial results.

Financial Instruments—Credit Losses

Standard/Description—Issuance date: June 2016, with amendments in 2018, 2019, and 2020. This changes the guidance for credit losses based on an expected loss model rather than an incurred loss model. It requires the consideration of all available relevant information when estimating expected credit losses, including past events, current conditions and forecasts and their implications for expected credit losses. It also expands the scope of financial instruments subject to impairment, including off-balance sheet commitments and residual value.

Effective Date and Adoption Considerations—The guidance was effective January 1, 2020 with one-year early adoption permitted. The company adopted the guidance as of the effective date, using the transition methodology whereby prior comparative periods were not retrospectively presented in the Consolidated Financial Statements.

Effect on Financial Statements or Other Significant Matters—At January 1, 2020, an increase in the allowance for credit losses of \$81 million was recorded for accounts receivable—trade and financing receivables (inclusive of its related off-balance sheet commitments). Additionally, net deferred taxes were reduced by \$14 million in the Consolidated Balance Sheet, resulting in a cumulative effect net decrease to retained earnings of \$66 million. Refer to note K, “Financing Receivables,” and note R, “Commitments & Contingencies,” for additional information.

Leases

Standard/Description—Issuance date: February 2016, with amendments in 2018 and 2019. This guidance requires lessees to recognize right-of-use (ROU) assets and lease liabilities for most leases in the Consolidated Balance Sheet. For lessors, it also eliminated the use of third-party residual value guarantee insurance in the lease classification test, and overall aligns with revenue recognition guidance. Due to changes in lease termination guidance, when equipment is returned to the company prior to the end of the lease term, the carrying amounts of lease receivables are reclassified to loan receivables. The guidance also requires qualitative and quantitative disclosures to assess the amount, timing and uncertainty of cash flows arising from leases.

Effective Date and Adoption Considerations—The company adopted the guidance on its effective date of January 1, 2019, using the transition option whereby prior comparative periods were not retrospectively presented in the Consolidated Financial Statements. The company elected the package of practical expedients not to reassess prior conclusions related to contracts containing leases, lease classification and initial direct costs and the lessee practical expedient to combine lease and non-lease components for all asset classes. The company made a policy election to not recognize ROU assets and lease liabilities for short-term leases for all asset classes.

Effect on Financial Statements or Other Significant Matters—The guidance had a material impact on the Consolidated Balance Sheet as of the effective date. As a lessee, at adoption, the company recognized operating and financing ROU assets of \$4.8 billion and \$0.2 billion, respectively, and operating and financing lease liabilities of \$5.1 billion and \$0.2 billion, respectively. The transition adjustment recognized in retained earnings on January 1, 2019 was not material. None of the other changes to the guidance had a material impact in the company’s consolidated financial results at the effective date.

Reclassification of Certain Tax Effects from AOCI

Standard/Description—Issuance date: February 2018. In accordance with its accounting policy, the company releases income tax effects from AOCI once the reason the tax effects were established cease to exist (e.g., when available-for-sale debt securities are sold or if a pension plan is liquidated). This guidance allows for the reclassification of stranded tax effects as a result of the change in tax rates from U.S. tax reform to be recorded upon adoption of the guidance rather than at the actual cessation date.

Effective Date and Adoption Considerations—The guidance was effective January 1, 2019 with early adoption permitted. The company adopted the guidance effective January 1, 2018 and elected not to reclassify prior periods.

Effect on Financial Statements or Other Significant Matters—At adoption on January 1, 2018, \$2.4 billion was reclassified from AOCI to retained earnings, primarily comprised of amounts relating to retirement-related benefit plans.

Revenue Recognition—Contracts with Customers

Standard/Description—Issuance date: May 2014, with amendments in 2015 and 2016. Revenue recognition depicts the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. The guidance also requires specific disclosures relating to revenue recognition.

Effective Date and Adoption Considerations—The company adopted the guidance on its effective date of January 1, 2018 using the modified retrospective transition method.

Effect on Financial Statements or Other Significant Matters—At adoption, \$557 million was reclassified from notes and accounts receivable—trade and deferred income-current to prepaid expenses and other current assets to establish the opening balance for net contract assets. In-scope sales commission costs previously recorded in the Consolidated Income Statement were capitalized in deferred costs in the amount of \$737 million. Deferred income of \$29 million was recorded for certain software licenses that will be recognized over time versus at point in time under previous guidance. Additionally, net deferred taxes were reduced by \$184 million in the Consolidated Balance Sheet, resulting in a cumulative effect net increase to retained earnings of \$524 million. In the fourth quarter of 2018, the company recognized an additional impact to net deferred taxes and retained earnings of \$56 million, resulting in a total net increase to retained earnings of \$580 million. The decrease to net deferred taxes was the result of the company's election to include GILTI in measuring deferred taxes. The revenue guidance did not have a material impact in the company's consolidated financial results. Refer to note C, "Revenue Recognition," for additional information.

For all other standards that the company adopted in the periods presented, there was no material impact in the consolidated financial results.

NOTE C. REVENUE RECOGNITION

During 2020, in the unprecedented macroeconomic environment that resulted from the COVID-19 pandemic, clients focused on operational stability, flexibility and cash preservation which impacted the company's revenue performance.

Disaggregation of Revenue

The following tables provide details of revenue by major products/service offerings and by geography.

Revenue by Major Products/Service Offerings

(\$ in millions)	2020	2019	2018
For the year ended December 31:			
Cloud & Data Platforms	\$11,481 **	\$ 9,499	\$ 8,603
Cognitive Applications	5,290	5,456 *	5,280 *
Transaction Processing Platforms	6,606	7,936	7,974
Total Cloud & Cognitive Software	\$23,376	\$22,891 *	\$21,857 *
Consulting	\$ 8,083	\$ 8,157 *	\$ 7,906 *
Application Management	7,133	7,646	7,852
Global Process Services	945	995	1,037
Total Global Business Services	\$16,162	\$16,798 *	\$16,795 *
Infrastructure & Cloud Services	\$19,669	\$20,736	\$22,185
Technology Support Services	6,144	6,625	6,961
Total Global Technology Services	\$25,812	\$27,361	\$29,146
Systems Hardware	\$ 5,481	\$ 5,918	\$ 6,363
Operating Systems Software	1,497	1,686	1,671
Total Systems	\$ 6,978	\$ 7,604	\$ 8,034
Global Financing +	\$ 1,123	\$ 1,400	\$ 1,590
Other	\$ 169	\$ 1,092 *	\$ 2,169 *
Total Revenue	\$73,620	\$77,147	\$79,591

* Recast to conform to 2020 presentation.

** Red Hat was acquired on July 9, 2019. Results in 2020 include a full year of Red Hat revenue.

+ Contains lease and loan/working capital financing arrangements which are not subject to the guidance on revenue from contracts with customers.

Revenue by Geography

(\$ in millions)	2020	2019	2018
For the year ended December 31:			
Americas	\$34,114	\$36,274	\$36,994
Europe/Middle East/Africa	23,644	24,443	25,491
Asia Pacific	15,863	16,430	17,106
Total	\$73,620	\$77,147	\$79,591

Remaining Performance Obligations

The remaining performance obligation (RPO) disclosure provides the aggregate amount of the transaction price yet to be recognized as of the end of the reporting period and an explanation as to when the company expects to recognize these amounts in revenue. It is intended to be a statement of overall work under contract that has not yet been performed and does not include contracts in which the customer is not committed, such as certain as-a-Service, governmental, term software license and services offerings. The customer is not considered committed when they are able to terminate for convenience without payment of a substantive penalty. The disclosure includes estimates of variable consideration, except when the variable consideration is a sales-based or usage-based royalty promised in exchange for a license of intellectual property. Additionally, as a practical expedient, the company does not include contracts that have an original duration of one year or less. RPO estimates are subject to change and are affected by several factors, including terminations, changes in the scope of contracts, periodic revalidations, adjustment for revenue that has not materialized and adjustments for currency.

At December 31, 2020, the aggregate amount of the transaction price allocated to RPO related to customer contracts that are unsatisfied or partially unsatisfied was \$124 billion. Approximately 60 percent of the amount is expected to be recognized as revenue in the subsequent two years, approximately 35 percent in the subsequent three to five years and the balance (mostly Infrastructure & Cloud Services) thereafter.

Revenue Recognized for Performance Obligations Satisfied (or Partially Satisfied) in Prior Periods

For the year ended December 31, 2020, revenue was reduced by \$29 million for performance obligations satisfied (or partially satisfied) in previous periods mainly due to changes in estimates on contracts with cost-to-cost measures of progress. Refer to note A, "Significant Accounting Policies," for additional information on these contracts and estimates of costs to complete.

Reconciliation of Contract Balances

The following table provides information about notes and accounts receivable—trade, contract assets and deferred income balances.

(\$ in millions)	2020	2019
At December 31:		
Notes and accounts receivable—trade (net of allowances of \$351 in 2020 and \$299 in 2019)	\$ 7,132	\$ 7,870
Contract assets*	497	492
Deferred income (current)	12,833	12,026
Deferred income (noncurrent)	4,301	3,851

* Included within prepaid expenses and other current assets in the Consolidated Balance Sheet.

The amount of revenue recognized during the year ended December 31, 2020 that was included within the deferred income balance at December 31, 2019 was \$10.1 billion and primarily related to services and software.

The following table provides roll forwards of the notes and accounts receivable—trade allowance for expected credit losses for the years ended December 31, 2020 and 2019.

(\$ in millions)	January 1, 2020 *	Additions/(Releases)	Write-offs	Other **	December 31, 2020
	\$316	\$76	\$ (46)	\$5	\$351
January 1, 2019	Additions/(Releases)	Write-offs	Other **	December 31, 2019	
\$309	\$98	\$(113)	\$5	\$299	

* Opening balance does not equal the allowance at December 31, 2019 due to the adoption of the guidance for current expected credit losses. Refer to note B, "Accounting Changes," for additional information.

** Primarily represents translation adjustments.

The contract assets allowance for expected credit losses was not material in the years ended December 31, 2020 and 2019.

Deferred Costs

(\$ in millions)	At December 31:	2020	2019
Capitalized costs to obtain a contract	\$ 842	\$ 609	
Deferred costs to fulfill a contract			
Deferred setup costs	1,859	1,939	
Other deferred fulfillment costs	1,855	1,820	
Total deferred costs*	\$4,556	\$4,368	

* Of the total deferred costs, \$2,107 million was current and \$2,449 million was noncurrent at December 31, 2020 and \$1,896 million was current and \$2,472 million was noncurrent at December 31, 2019.

The amount of total deferred costs amortized during the year ended December 31, 2020 was \$3,793 million and there were no material impairment losses incurred. Refer to note A, "Significant Accounting Policies," for additional information on deferred costs to fulfill a contract and capitalized costs of obtaining a contract.

NOTE D. SEGMENTS

In the first quarter of 2020, the company realigned offerings and the related management system to reflect divestitures completed in the second half of 2019 and tighter integration of certain industry-related consulting services. Accordingly, the company updated its Cloud & Cognitive Software segment, Global Business Services segment and the Other—divested businesses category in the first quarter of 2020 and recast the related historical information for consistency with the go-forward performance. Total recast revenue for full-year 2019 and 2018 was approximately \$0.3 billion and \$0.4 billion, respectively. There was no change to the Global Technology Services, Systems or Global Financing segments, and there was no impact to IBM's consolidated results.

The following table displays the segment updates:

Management System Change	Resulting Segment Implications
Divestitures of IBM's Risk Analytics and Regulatory Offerings and Sales Performance Management Offerings	- Cloud & Cognitive Software (Cognitive Applications) + Other—divested businesses
Realignment of certain industry-related consulting offerings to the Global Business Services segment	- Cloud & Cognitive Software (Cognitive Applications) + Global Business Services (Consulting)

The segments represent components of the company for which separate financial information is available that is utilized on a regular basis by the chief operating decision maker (the chief executive officer) in determining how to allocate resources and evaluate performance. The segments are determined based on several factors, including client base, homogeneity of products, technology, delivery channels and similar economic characteristics.

Segment revenue and pre-tax income include transactions between the segments that are intended to reflect an arm's-length, market-based transfer price. Systems that are used by Global Technology Services in outsourcing arrangements are primarily sourced internally from the Systems segment, and software is primarily sourced internally through the Cloud & Cognitive Software and Systems segments. For providing IT services that are used internally, Global Technology Services and Global Business Services recover cost, as well as a reasonable fee, that is intended to reflect the arm's-length value of providing the services. They enter into arm's-length loans at prices equivalent to market rates with Global Financing to facilitate the acquisition of equipment and software used in services engagements. All internal transaction prices are reviewed annually, and reset if appropriate.

The company utilizes globally integrated support organizations to realize economies of scale and efficient use of resources. As a result, a considerable amount of expense is shared by all of the segments. This shared expense includes sales coverage, certain marketing functions and support functions such as Accounting, Treasury, Procurement, Legal, Human Resources and Billing and Collections. Where practical, shared expenses are allocated based on measurable drivers of expense, e.g., headcount. When a clear and measurable driver cannot be identified, shared expenses are allocated on a financial basis that is consistent with the company's management system, e.g., advertising expense is allocated based on the gross profits of the segments. A portion of the shared expenses, which are recorded in net income, are not allocated to the segments. These expenses are associated with the elimination of internal transactions and other miscellaneous items.

The following tables reflect the results of continuing operations of the company's segments consistent with the management and measurement system utilized within the company and have been recast for the prior-year periods due to the company's January 2020 segment changes. Performance measurement is based on pre-tax income from continuing operations. These results are used, in part, by the chief operating decision maker, both in evaluating the performance of, and in allocating resources to, each of the segments.

In the fourth quarter of 2020, the company recorded a charge of \$2.0 billion in selling, general and administrative expense in the Consolidated Income Statement for severance and employee related benefits in accordance with the accounting guidance for ongoing benefit arrangements. The impact to pre-tax income from continuing operations by segment was as follows: Cloud & Cognitive Software (\$0.6 billion), Global Business Services (\$0.4 billion), Global Technology Services (\$0.9 billion), Systems (\$0.2 billion) and the impact to Global Financing was not material.

Management System Segment View

(\$ in millions)

For the year ended December 31:	Cloud & Cognitive Software	Global Business Services	Global Technology Services	Systems	Global Financing	Total Segments
2020						
External revenue	\$23,376	\$16,162	\$25,812	\$6,978	\$1,123	\$ 73,451
Internal revenue	3,169	193	1,226	824	894	6,306
Total revenue	\$26,545	\$16,355	\$27,039	\$7,802	\$2,017	\$ 79,758
Pre-tax income from continuing operations⁺	\$ 6,362	\$ 1,351	\$ 117	\$ 449	\$ 761	\$ 9,040
Revenue year-to-year change	3.2 %	(4.2)%	(5.2)%	(6.3)%	(23.4)%	(3.1)%
Pre-tax income year-to-year change	(18.5)%	(16.8)%	(92.9)%	(36.0)%	(27.8)%	(29.6)%
Pre-tax income margin	24.0 %	8.3 %	0.4 %	5.8 %	37.7 %	11.3 %
2019						
External revenue	\$22,891 *	\$16,798 *	\$27,361	\$7,604	\$1,400	\$ 76,054 *
Internal revenue	2,827	278	1,157	726	1,232	6,220
Total revenue	\$25,718 *	\$17,076 *	\$28,518	\$8,330	\$2,632	\$ 82,274 *
Pre-tax income from continuing operations	\$ 7,811 *	\$ 1,623 *	\$ 1,645	\$ 701	\$1,055	\$ 12,835 *
Revenue year-to-year change	2.7 %*	(0.3)%*	(5.0)%	(5.9)%	(17.8)%	(2.3)%*
Pre-tax income year-to-year change	(12.4)%*	1.3 %*	(7.6)%	(22.4)%	(22.5)%	(11.9)%*
Pre-tax income margin	30.4 %*	9.5 %*	5.8 %	8.4 %	40.1 %	15.6 %*
2018						
External revenue	\$21,857 *	\$16,795 *	\$29,146	\$8,034	\$1,590	\$ 77,421 *
Internal revenue	3,190	326	872	815	1,610	6,813
Total revenue	\$25,047 *	\$17,121 *	\$30,018	\$8,848	\$3,200	\$ 84,235 *
Pre-tax income from continuing operations	\$ 8,914 *	\$ 1,602 *	\$ 1,781	\$ 904	\$1,361	\$ 14,562 *
Revenue year-to-year change	2.0 %*	3.0 %*	0.5 %	(1.1)%	1.0 %	1.3 %*
Pre-tax income year-to-year change	10.0 %*	26.2 %*	(32.0)%	(19.9)%	6.5 %	1.2 %*
Pre-tax income margin	35.6 %*	9.4 %*	5.9 %	10.2 %	42.5 %	17.3 %*

⁺ Includes the impact of a \$2.0 billion pre-tax charge for structural actions in the fourth quarter of 2020.

* Recast to conform to 2020 presentation.

Reconciliations of IBM as Reported

(\$ in millions)

For the year ended December 31:	2020	2019	2018
Revenue			
Total reportable segments	\$79,758	\$82,274 *	\$84,235 *
Other—divested businesses	37	930 *	1,961 *
Other revenue	132	162	207
Elimination of internal transactions	(6,306)	(6,220)	(6,813)
Total IBM consolidated revenue	\$73,620	\$77,147	\$79,591

* Recast to conform to 2020 presentation.

(\$ in millions)

For the year ended December 31:	2020	2019	2018
Pre-tax income from continuing operations			
Total reportable segments	\$ 9,040 ⁺	\$12,835 *	\$14,562 *
Amortization of acquired intangible assets	(1,858)	(1,298)	(809)
Acquisition-related charges	(13)	(423)	(16)
Non-operating retirement-related (costs)/income	(1,123)	(615)	(1,572)
Spin-off-related charges	(28)	—	—
Elimination of internal transactions	(381)	(290)	(725)
Other—divested businesses	(9)	574 *	287 *
Unallocated corporate amounts	(990)	(617)	(385)
Total pre-tax income from continuing operations	\$ 4,637 ⁺	\$10,166	\$11,342

⁺ Includes the impact of a \$2.0 billion pre-tax charge for structural actions in the fourth quarter of 2020.

* Recast to conform to 2020 presentation.

Immaterial Items**Investment in Equity Alliances and Equity Alliances Gains/(Losses)**

The investments in equity alliances and the resulting gains and (losses) from these investments that are attributable to the segments did not have a material effect on the financial position or the financial results of the segments.

Segment Assets and Other Items

Cloud & Cognitive Software assets are mainly goodwill, acquired intangible assets and accounts receivable. Global Business Services assets are primarily goodwill and accounts receivable. Global Technology Services assets are primarily goodwill, plant, property and equipment, including the assets associated with the outsourcing business, accounts receivable and acquired intangible assets. Systems assets are primarily goodwill, manufacturing inventory, and plant, property and equipment. Global Financing assets are primarily financing receivables, cash and marketable securities, and fixed assets under operating leases.

To ensure the efficient use of the company's space and equipment, several segments may share leased or owned plant, property and equipment assets. Where assets are shared, landlord ownership of the assets is assigned to one segment and is not allocated to each user segment. This is consistent with the company's management system and is reflected accordingly in the table below. In those cases, there will not be a precise correlation between segment pre-tax income and segment assets.

Depreciation expense and capital expenditures that are reported by each segment also are consistent with the landlord ownership basis of asset assignment.

Global Financing amounts for interest income and interest expense reflect the interest income and interest expense associated with the Global Financing business, including the intercompany financing activities discussed on page 28, as well as the income from investment in cash and marketable securities.

Management System Segment View

For the year ended December 31:	Cloud & Cognitive Software	Global Business Services	Global Technology Services	Global Systems	Global Financing	Total Segments
2020						
Assets	\$58,752	\$10,290	\$21,971	\$4,620	\$25,075	\$120,708
Depreciation/amortization of intangibles**	1,168	180	2,605	343	119	4,415
Capital expenditures/investments in intangibles	548	28	2,039	249	41	2,906
Interest income	—	—	—	—	1,058	1,058
Interest expense	—	—	—	—	307	307
2019						
Assets	\$58,342 *	\$10,136 *	\$22,436	\$4,590	\$29,568	\$125,072 *
Depreciation/amortization of intangibles**	1,089 *	167 *	2,601	350	186	4,392
Capital expenditures/investments in intangibles	517 *	47 *	1,575	305	57	2,501
Interest income	—	—	—	—	1,490	1,490
Interest expense	—	—	—	—	512	512
2018						
Assets	\$28,502 *	\$ 8,443 *	\$17,624	\$4,030	\$41,320	\$ 99,920 *
Depreciation/amortization of intangibles**	1,051 *	108 *	2,359	315	229	4,063
Capital expenditures/investments in intangibles	468 *	58 *	2,569	241	274	3,610
Interest income	—	—	—	—	1,647	1,647
Interest expense	—	—	—	—	515	515

* Recast to conform to 2020 presentation.

** Segment pre-tax income from continuing operations does not include the amortization of intangible assets.

Reconciliations of IBM as Reported

(\$ in millions)	2020	2019	2018
At December 31:			
Assets			
Total reportable segments	\$120,708	\$125,072 *	\$ 99,920 *
Elimination of internal transactions	(4,685)	(4,317)	(7,143)
Other-divested businesses	218	1,906 *	2,702 *
Unallocated amounts			
Cash and marketable securities	12,486	7,308	10,393
Notes and accounts receivable	1,589	1,488 *	1,597
Deferred tax assets	9,012	4,995	5,089
Plant, other property and equipment	2,206	2,262 *	2,463 *
Operating right-of-use assets**	3,409	3,530	—
Pension assets	7,610	6,865	4,666
Other	3,417	3,077 *	3,695 *
Total IBM consolidated assets	\$155,971	\$152,186	\$123,382

* Recast to conform to 2020 presentation.

** Reflects the adoption of the FASB guidance on leases in 2019.

Major Clients

No single client represented 10 percent or more of the company's total revenue in 2020, 2019 or 2018.

Geographic Information

The following provides information for those countries that are 10 percent or more of the specific category.

Revenue*

(\$ in millions)	2020	2019	2018
For the year ended December 31:			
United States	\$26,978	\$28,395	\$29,078
Japan	8,694	8,681	8,489
Other countries	37,949	40,071	42,024
Total IBM consolidated revenue	\$73,620	\$77,147	\$79,591

* Revenues are attributed to countries based on the location of the client.

Plant and Other Property—Net

(\$ in millions)	2020	2019	2018
At December 31:			
United States	\$4,410	\$4,485	\$ 4,585
Other countries	5,533	5,294	5,774
Total	\$9,943	\$9,778	\$10,359

Operating Right-of-Use Assets—Net*

(\$ in millions)	2020	2019	2018
At December 31:			
United States	\$1,243	\$1,386	\$ —
Japan	606	659	—
Other countries	2,836	2,951	—
Total	\$4,686	\$4,996	\$ —

* Reflects the adoption of the FASB guidance on leases in 2019.

Revenue by Classes of Similar Products or Services

The following table presents external revenue for similar classes of products or services within the company's reportable segments. Client solutions often include IBM software and systems and other suppliers' products if the client solution requires it. For each of the segments that include services, Software-as-a-Service, consulting, education, training and other product-related services are included as services. For each of these segments, software includes product license charges and ongoing subscriptions.

(\$ in millions)	2020	2019	2018
For the year ended December 31:			
Cloud & Cognitive Software			
Software	\$19,107	\$18,649 *	\$17,906 *
Services	4,159	4,076 *	3,795 *
Systems	110	166	156
Global Business Services			
Services	\$15,896	\$16,527 *	\$16,439 *
Software	180	156	151
Systems	86	115	206
Global Technology Services			
Services	\$19,632	\$20,768	\$22,222
Maintenance	4,815	5,183	5,484
Systems	967	1,072	1,069
Software	399	338	371
Systems			
Servers	\$ 3,466	\$ 3,746	\$ 3,996
Storage	1,801	1,920	2,114
Software	1,359	1,528	1,499
Services	351	410	425
Global Financing			
Financing	\$ 834	\$ 1,120	\$ 1,223
Used equipment sales	289	281	366

* Recast to conform to 2020 presentation.

NOTE E. ACQUISITIONS & DIVESTITURES**Acquisitions**

The company accounts for business combinations using the acquisition method, and accordingly, the identifiable assets acquired, the liabilities assumed and any noncontrolling interest in the acquiree are recorded at their acquisition date fair values. Significant judgments and use of estimates are required when performing valuations. For example, the company uses judgments when estimating the fair value of intangible assets using a discounted cash flow model, which involves the use of significant estimates and assumptions with respect to revenue growth rates, the customer attrition rate and discount rates.

Purchase price consideration for all acquisitions was paid primarily in cash. All acquisitions, except otherwise stated, were for 100 percent of the acquired business and are reported in the Consolidated Statement of Cash Flows, net of acquired cash and cash equivalents.

2020

In 2020, the company completed seven acquisitions at an aggregate cost of \$723 million.

The following acquisitions closed in 2020. Each acquisition is expected to enhance the company's portfolio of products and services capabilities and further advance IBM's hybrid cloud and AI strategy.

Acquisition	Segment	Description of Acquired Business
First Quarter		
Stratoss Lifecycle Manager business (Stratoss) from Accanto Systems Oy	Cloud & Cognitive Software	Cloud native business designed to deliver web-scale levels of operational automation for the cloud-based networking world
Second Quarter		
Automated Security Assurance Platform business (ASAP) from Spanugo Inc.	Cloud & Cognitive Software	Cloud cybersecurity platform, will integrate into the IBM public cloud to further meet the security demands of clients in highly regulated industries
Third Quarter		
WDG Soluções Em Sistemas E Automação De Processos LTDA (WDG Automation)	Cloud & Cognitive Software	Provider of robotic process automation
Fourth Quarter		
Instana	Cloud & Cognitive Software	Application performance monitoring and observability company which helps businesses better manage applications that span the hybrid cloud landscape
TruQua Enterprises, LLC (TruQua)	Global Business Services	IT services provider and SAP development partner
Expertus Technologies Inc. (Expertus)	Global Business Services	Provider of cloud solutions for the financial services industry
7Summits LLC (7Summits)	Global Business Services	Leading Salesforce partner that delivers transformative digital experiences across industries

At December 31, 2020, the remaining cash to be remitted by the company related to certain fourth-quarter acquisitions was \$323 million. This amount has been classified as restricted cash in the Consolidated Balance Sheet, most of which is expected to be paid in the first quarter of 2021.

The following table reflects the purchase price related to these acquisitions and the resulting purchase price allocations as of December 31, 2020.

(\$ in millions)	Amortization Life (in Years)	Total Acquisitions
Current assets		\$ 35
Property, plant and equipment/noncurrent assets		7
Intangible assets		
Goodwill	N/A	575
Client relationships	5–7	84
Completed technology	2–7	73
Trademarks	1–7	11
Total assets acquired		\$784
Current liabilities		19
Noncurrent liabilities		41
Total liabilities assumed		\$ 61
Total purchase price		\$723

N/A—Not applicable

Notes to Consolidated Financial Statements

International Business Machines Corporation and Subsidiary Companies

The goodwill generated is primarily attributable to the assembled workforce of the acquired businesses and the increased synergies expected to be achieved from the integration of the acquired businesses into the company's various integrated solutions and services neither of which qualifies as an amortizable intangible asset.

The overall weighted-average useful life of the identified amortizable intangible assets acquired was 6.8 years. These identified intangible assets will be amortized on a straight-line basis over their useful lives, which approximates the pattern that the assets' economic benefits are expected to be consumed over time. Goodwill of \$362 million, \$205 million and \$8 million was assigned to the Cloud & Cognitive Software segment, Global Business Services segment and Systems segment, respectively. It is expected that none of the goodwill will be deductible for tax purposes.

The valuation of the assets acquired and liabilities assumed is subject to revision. If additional information becomes available, the company may further revise the purchase price allocation as soon as practical, but no later than one year from the acquisition date; however, material changes are not expected.

Transactions Closed in 2021—In February 2021, the company acquired Nordcloud, a consulting company providing services in cloud implementation, application transformation and managed services; Taos Mountain, LLC (Taos), a leading cloud professional and managed services provider; and Red Hat acquired StackRox, an innovator in container and Kubernetes-native security. Nordcloud and Taos will be integrated into the Global Business Services segment and StackRox will be integrated into the Cloud & Cognitive Software segment. At the date of issuance of the financial statements, the initial purchase accounting for the acquisitions of Nordcloud, Taos and StackRox was not complete.

2019

In 2019, the company completed one acquisition at an aggregate cost of \$35 billion.

Red Hat—On July 9, 2019, IBM completed the acquisition of all of the outstanding shares of Red Hat at an aggregate cost of \$35 billion. Red Hat's portfolio of open source and cloud technologies combined with IBM's innovative hybrid cloud technology and industry expertise are accelerating the delivery of the hybrid cloud platform capabilities required to address the next chapter of cloud implementations.

On the acquisition date, Red Hat shareholders received \$190 per share in cash, representing a total equity value of approximately \$34 billion. The company funded the transaction through a combination of cash on hand and proceeds from debt issuances.

The following table reflects the purchase price and the resulting purchase price allocation as of December 31, 2020. The net purchase price adjustments recorded during 2020 were primarily related to noncurrent tax assets and liabilities.

(\$ in millions)	Amortization Life (in Years)	Allocated Amount
Current assets*		\$ 3,186
Property, plant and equipment/noncurrent assets		948
Intangible assets		
Goodwill	N/A	22,985
Client relationships	10	7,215
Completed technology	9	4,571
Trademarks	20	1,686
Total assets acquired		\$40,592
Current liabilities**		1,395
Noncurrent liabilities		4,117
Total liabilities assumed		\$ 5,512
Total purchase price		\$35,080

* Includes \$2.2 billion of cash and cash equivalents.

** Includes \$485 million of short-term debt related to the convertible notes acquired from Red Hat that were recognized at their fair value on the acquisition date, which was fully settled as of October 1, 2019.

N/A-Not applicable

The goodwill generated was primarily attributable to the assembled workforce of Red Hat and the increased synergies expected to be achieved from the integration of Red Hat products into the company's various integrated solutions neither of which qualify as an amortizable intangible asset.

The overall weighted-average useful life of the identified amortizable intangible assets acquired was 10.9 years. These identified intangible assets will be amortized on a straight-line basis over their useful lives, which approximates the pattern that the assets' economic benefits are expected to be consumed over time. The following table presents the goodwill allocated to the segments as of December 31, 2020.

Segment	(\$ in billions)	Goodwill Allocated *
Cloud & Cognitive Software	\$18.4	
Global Technology Services	3.1	
Global Business Services	1.1	
Systems	0.4	
Total	\$23.0	

* It is expected that approximately six percent of the goodwill will be deductible for tax purposes.

The following table presents the supplemental consolidated financial results of the company on an unaudited pro forma basis, as if the acquisition had been consummated on January 1, 2018 through the periods shown below. The primary adjustments reflected in the pro forma results relate to: (1) the debt used to fund the acquisition, (2) changes driven by acquisition accounting, including amortization of intangible assets and the deferred revenue fair value adjustment, (3) employee retention plans, (4) elimination of intercompany transactions between IBM and Red Hat, and (5) the presentation of acquisition-related costs.

The unaudited pro forma financial information presented below does not purport to represent the actual results of operations that IBM and Red Hat would have achieved had the companies been combined during the periods presented, and was not intended to project the future results of operations that the combined company could achieve after the acquisition. Historical fiscal periods are not aligned under this presentation. The unaudited pro forma financial information did not reflect any potential cost savings, operating efficiencies, long-term debt pay down estimates, suspension of IBM's share repurchase program, financial synergies or other strategic benefits as a result of the acquisition or any restructuring costs to achieve those benefits.

(Unaudited)

(\$ in millions)	2019	2018
For the year ended December 31:		
Revenue	\$79,628	\$81,360
Net income	\$ 9,723	\$ 5,702

2018

In 2018, the company completed two acquisitions for an aggregate cost of \$49 million. One acquisition was completed by the Cloud & Cognitive Software segment and one acquisition by the Global Business Services segment. These acquisitions did not have a material impact on the Consolidated Financial Statements.

Divestitures

2020

In the fourth quarter of 2020, the company entered into a definitive agreement to sell certain remaining OEM commercial financing capabilities reported within the Global Financing segment. The financial terms related to this transaction are not material. The transaction is expected to be completed in the second half of 2021.

2019

Select IBM Software Products—On June 30, 2019, HCL Technologies Limited (HCL) acquired select standalone Cloud & Cognitive Software products from IBM for \$1,775 million, inclusive of \$150 million of contingent consideration. The transaction included commercial software, intellectual property and services offerings in addition to transition services for IT and other services. The total pre-tax gain recognized on this transaction as of December 31, 2020 was \$669 million. The total gain on sale may change in the future due to contingent consideration or changes in other transaction estimates, however, material changes are not expected.

The company received cash of \$812 million at closing and \$812 million in the second quarter of 2020. The company also received \$90 million of contingent consideration as of December 31, 2020. Any earned outstanding contingent consideration is expected to be paid to IBM within 27 months of the closing. In addition, IBM remits payment to HCL predominantly for servicing certain customer contracts until such contracts are terminated or entitlements are assumed by HCL, related to deferred revenue that existed prior to closing. IBM made cash payments to HCL of \$288 million and \$174 million during the years ended December 31, 2020 and December 31, 2019, respectively, for such contracts.

Select IBM Marketing Platform and Commerce Offerings—On April 4, 2019, IBM and Centerbridge Partners, L.P. (Centerbridge) announced a definitive agreement, in which Centerbridge would acquire select marketing platform and commerce offerings from IBM.

Notes to Consolidated Financial Statements

International Business Machines Corporation and Subsidiary Companies

The transaction included commercial software and services offerings. In addition, IBM is providing Centerbridge with IT transition services. All other contracted transition services concluded as of June 30, 2020. Upon closing, Centerbridge announced that this business would be re-branded under the name Acoustic. The closing completed for the U.S. on June 30, 2019. The company received a net cash payment of \$240 million in 2019 and expects to receive an additional \$150 million of cash within 36 months of the U.S. closing.

A subsequent closing occurred in most other countries on March 31, 2020. The closing of all remaining countries occurred as of June 30, 2020. The pre-tax gain recognized on this transaction as of December 31, 2020 was \$82 million. The pre-tax gain is subject to adjustment in the future due to changes in transaction-related estimates which are not expected to be material.

IBM Risk Analytics and Regulatory Offerings—On September 24, 2019, IBM and SS&C Technologies Holdings, Inc. (SS&C) entered into a definitive agreement in which SS&C would acquire certain Algorithmics and related assets from IBM. The transaction closed in the fourth quarter of 2019. The company recognized an immaterial pre-tax gain on the sale for the year ended December 31, 2019.

Sales Performance Management Offerings—On November 20, 2019, IBM and Varicent Parent Holdings Corporation (Varicent) entered into a definitive agreement in which Varicent would acquire certain sales performance management assets from IBM. The initial closing of certain countries was completed on December 31, 2019. The company received a net cash payment of \$230 million and recognized a pre-tax gain on the sale of \$136 million for the year ended December 31, 2019. A subsequent closing for the remaining countries occurred on March 31, 2020 and the company recognized an immaterial pre-tax gain.

The above 2019 divested businesses are reported in Other—divested businesses as described in note D, "Segments."

In addition to the above, the company completed three divestitures reported in the Global Financing segment, the Global Business Services segment and the Other—divested businesses in 2019. The financial terms related to each of these transactions were not material.

The pre-tax gains recognized on the divestitures above were recorded in other (income) and expense in the Consolidated Income Statement.

2018

The company had no divestitures in 2018.

NOTE F. RESEARCH, DEVELOPMENT & ENGINEERING

RD&E expense was \$6,333 million in 2020, \$5,989 million in 2019 and \$5,379 million in 2018.

The company incurred total expense of \$6,039 million, \$5,657 million and \$5,027 million in 2020, 2019 and 2018, respectively, for scientific research and the application of scientific advances to the development of new and improved products and their uses, as well as services and their application. Within these amounts, software-related expense was \$3,732 million, \$3,541 million and \$3,050 million in 2020, 2019 and 2018, respectively.

Expense for product-related engineering was \$295 million, \$334 million and \$352 million in 2020, 2019 and 2018, respectively.

NOTE G. TAXES

(\$ in millions)

For the year ended December 31:	2020	2019	2018
Income/(loss) from continuing operations before income taxes			
U.S. operations	\$ (1,726)	\$ (315)	\$ 627
Non-U.S. operations	6,363	10,481	10,715
Total income from continuing operations before income taxes	\$ 4,637	\$10,166	\$11,342

The income from continuing operations provision for/(benefit from) income taxes by geographic operations was as follows:

(\$ in millions)

For the year ended December 31:	2020	2019	2018
U.S. operations	\$ 2,004	\$ (408)	\$1,199
Non-U.S. operations	(2,868)	1,139	1,420
Total continuing operations provision for/(benefit from) income taxes	\$ (864)	\$ 731	\$2,619

The components of the income from continuing operations provision for/(benefit from) income taxes by taxing jurisdiction were as follows:

(\$ in millions)	2020	2019	2018
For the year ended December 31:			
U.S. federal			
Current	\$ 315	\$ 331	\$ (342)
Deferred	1,177	(839)	1,377
	\$ 1,492	\$ (508)	\$1,035
U.S. state and local			
Current	\$ 316	\$ (85)	\$ 127
Deferred	(315)	(82)	(292)
	\$ 1	\$ (167)	\$ (165)
Non-U.S.			
Current	\$ 1,827	\$1,829	\$2,135
Deferred	(4,184)	(423)	(386)
	\$ (2,357)	\$1,406	\$1,749
Total continuing operations provision for/(benefit from) income taxes	\$ (864)	\$ 731	\$2,619
Discontinued operations provision for/(benefit from) income taxes	(13)	(1)	2
Provision for social security, real estate, personal property and other taxes	3,199	3,304	3,322
Total taxes included in net income	\$ 2,322	\$4,034	\$5,943

A reconciliation of the statutory U.S. federal tax rate to the company's effective tax rate from continuing operations was as follows:

For the year ended December 31:	2020	2019	2018
Statutory rate	21 %	21 %	21 %
Enactment of U.S. tax reform	—	1	18
Tax differential on foreign income	(15)	(11)	(9)
Intra-entity IP sale	(20)	—	—
Domestic incentives	(4)	(2)	(3)
State and local	0	(1)	(1)
Other	(1)	(1)	(3)
Effective rate	(19)%	7 %	23 %

Percentages rounded for disclosure purposes.

The significant components reflected within the tax rate reconciliation labeled "Tax differential on foreign income" include the effects of foreign subsidiaries' earnings taxed at rates other than the U.S. statutory rate, foreign export incentives, U.S. taxes on foreign income and any net impacts of intercompany transactions. These items also reflect audit settlements or changes in the amount of unrecognized tax benefits associated with each of these items.

The continuing operations effective rate for 2020 was (18.6) percent compared to 7.2 percent in 2019. The decrease in the effective tax rate was primarily driven by an intra-entity sale of certain of the company's intellectual property which required the recognition of a \$3.4 billion deferred tax asset. The recognition of this non-U.S. deferred tax asset and its related GILTI impacts in the U.S. resulted in a net tax benefit of \$0.9 billion in the first quarter of 2020. In addition, a change in foreign tax law resulted in a \$0.2 billion tax benefit in the current year.

On December 22, 2017, the U.S. Tax Cuts and Jobs Act was enacted. U.S. tax reform introduced many changes, including lowering the U.S. corporate tax rate to 21 percent, changes in incentives, provisions to prevent U.S. base erosion and significant changes in the taxation of international income, including provisions which allow for the repatriation of foreign earnings without U.S. tax. The enactment of U.S. tax reform resulted in charges to tax expense of \$0.1 billion and \$2.0 billion for the years ended December 31, 2019 and 2018, respectively. In 2020, there was no impact from the enactment of U.S. tax reform. In 2018, the charge was primarily attributable to the company's election to include GILTI in measuring deferred taxes, plus refinements to the one-time U.S. transition tax and foreign tax costs on undistributed foreign earnings. The charge in 2019 was related to additional tax reform guidance issued by the U.S. Treasury in January 2019.

The effect of tax law changes on deferred tax assets and liabilities did not have a material impact on the company's 2020 effective tax rate.

Deferred Tax Assets

(\$ in millions)	2020	2019
At December 31:		
Retirement benefits	\$ 3,946	\$ 3,766
Leases	1,525	1,729
Share-based and other compensation	616	637
Domestic tax loss/credit carryforwards	1,746	1,259
Deferred income	712	600
Foreign tax loss/credit carryforwards	818	836
Bad debt, inventory and warranty reserves	361	298
Depreciation	308	253
Hedging losses	576	—
Restructuring charges	302	138 **
Accruals	483	368
Intangible assets	3,540 *	592
Capitalized research and development	1,387	722
Other	1,441	1,300
Gross deferred tax assets	17,761	12,498
Less: valuation allowance	850	608
Net deferred tax assets	\$16,911	\$ 11,890

Deferred Tax Liabilities

(\$ in millions)	2020	2019
At December 31:		
Goodwill and intangible assets	\$ 2,679	\$ 3,111
GILTI deferred taxes	4,365 *	1,908
Leases and right-of-use assets	1,908	2,216
Depreciation	709	728
Retirement benefits	1,221	1,002
Software development costs	1,007	1,075
Deferred transition costs	205	233
Undistributed foreign earnings	307	725
Other	741	940
Gross deferred tax liabilities	\$13,142	\$11,938

* The increase in the balance was primarily due to an intra-entity sale of intellectual property in the first quarter of 2020.

** Previously included in Other.

For financial reporting purposes, the company had foreign and domestic loss carryforwards, the tax effect of which was \$661 million, including a tax only capital loss in a subsidiary, as well as foreign and domestic credit carryforwards of \$1,903 million. Substantially all of these carryforwards are available for at least two years and the majority are available for 10 years or more.

The valuation allowances as of December 31, 2020, 2019 and 2018 were \$850 million, \$608 million and \$915 million, respectively. The amounts principally apply to certain foreign and domestic loss carryforwards and credits. In the opinion of management, it is more likely than not that these assets will not be realized. However, to the extent that tax benefits related to these carryforwards are realized in the future, the reduction in the valuation allowance will reduce income tax expense.

The amount of unrecognized tax benefits at December 31, 2020 increased by \$1,422 million in 2020 to \$8,568 million. A reconciliation of the beginning and ending amount of unrecognized tax benefits was as follows:

(\$ in millions)	2020	2019	2018
Balance at January 1	\$7,146	\$6,759	\$ 7,031
Additions based on tax positions related to the current year	1,690	816	394
Additions for tax positions of prior years	159	779	1,201
Reductions for tax positions of prior years (including impacts due to a lapse of statute)	(408)	(922)	(1,686)
Settlements	(19)	(286)	(181)
Balance at December 31	\$8,568	\$7,146	\$ 6,759

The additions to unrecognized tax benefits related to the current and prior years were primarily attributable to non-U.S. tax matters, including transfer pricing, as well as U.S. federal and state tax matters, credits and incentives. The settlements and reductions to unrecognized tax benefits for tax positions of prior years were primarily attributable to U.S. federal and state tax matters, non-U.S. audits and impacts due to lapse of statute of limitations.

The unrecognized tax benefits at December 31, 2020 of \$8,568 million can be reduced by \$574 million associated with timing adjustments, U.S. tax credits, potential transfer pricing adjustments and state income taxes. The net amount of \$7,994 million, if recognized, would favorably affect the company's effective tax rate. The net amounts at December 31, 2019 and 2018 were \$6,562 million and \$6,041 million, respectively.

Interest and penalties related to income tax liabilities are included in income tax expense. During the year ended December 31, 2020, the company recognized \$117 million in interest expense and penalties; in 2019, the company recognized \$13 million in interest expense and penalties; and, in 2018, the company recognized a net benefit of \$14 million in interest expense and penalties. The company had \$843 million for the payment of interest and penalties accrued at December 31, 2020, and had \$819 million accrued at December 31, 2019.

Within the next 12 months, the company believes it is reasonably possible that the total amount of unrecognized tax benefits associated with certain positions may be reduced. The potential decrease in the amount of unrecognized tax benefits is associated with the anticipated resolution of the company's U.S. income tax audit for 2015 and 2016, as well as various non-U.S. audits. The company estimates that the unrecognized tax benefits at December 31, 2020 could be reduced by \$368 million.

During the fourth quarter of 2020, the U.S. Internal Revenue Service (IRS) concluded its examination of the company's U.S. income tax returns for 2013 and 2014, which had a specific focus on certain cross-border transactions that occurred in 2013 and issued a final Revenue Agent's Report (RAR). The IRS' proposed adjustments relative to these cross-border transactions, if sustained, would result in additional taxable income of approximately \$4.5 billion. The company strongly disagrees with the IRS on these specific matters and intends to protest the proposed adjustments through the IRS Appeals Office and U.S. courts, if necessary. The company believes it has appropriately accounted for all of its uncertain tax positions. In the third quarter of 2018, the IRS commenced its audit of the company's U.S. tax returns for 2015 and 2016. The company anticipates that this audit will be completed in 2021. With respect to major U.S. state and foreign taxing jurisdictions, the company is generally no longer subject to tax examinations for years prior to 2015. The company is no longer subject to income tax examination of its U.S. federal tax return for years prior to 2013. The open years contain matters that could be subject to differing interpretations of applicable tax laws and regulations as it relates to the amount and/or timing of income, deductions and tax credits. Although the outcome of tax audits is always uncertain, the company believes that adequate amounts of tax, interest and penalties have been provided for any adjustments that are expected to result for these years.

The company is involved in a number of income tax-related matters in India challenging tax assessments issued by the India Tax Authorities. As of December 31, 2020, the company had recorded \$742 million as prepaid income taxes in India. A significant portion of this balance represents cash tax deposits paid over time to protect the company's right to appeal various income tax assessments made by the India Tax Authorities. Although the outcome of tax audits are always uncertain, the company believes that adequate amounts of tax, interest and penalties have been provided for any adjustments that are expected to result for these years.

Within consolidated retained earnings at December 31, 2020 were undistributed after-tax earnings from certain non-U.S. subsidiaries that were not indefinitely reinvested. At December 31, 2020, the company had a deferred tax liability of \$307 million for the estimated taxes associated with the repatriation of these earnings. Undistributed earnings of approximately \$980 million and other outside basis differences in foreign subsidiaries were indefinitely reinvested in foreign operations. Quantification of the deferred tax liability, if any, associated with indefinitely reinvested earnings and outside basis differences was not practicable.

NOTE H. EARNINGS PER SHARE

The following table presents the computation of basic and diluted earnings per share of common stock.

(\$ in millions except per share amounts)

For the year ended December 31:	2020	2019	2018
Weighted-average number of shares on which earnings per share calculations are based			
Basic	890,348,679	887,235,105	912,048,072
Add—incremental shares under stock-based compensation plans	4,802,940	4,199,440	2,786,316
Add—incremental shares associated with contingently issuable shares	1,412,352	1,378,831	1,481,326
Assuming dilution	896,563,971	892,813,376	916,315,714
Income from continuing operations	\$5,501	\$9,435	\$8,723
Income/(loss) from discontinued operations, net of tax*	89	(4)	5
Net income on which basic earnings per share is calculated	\$5,590	\$9,431	\$8,728
Income from continuing operations	\$5,501	\$9,435	\$8,723
Net income applicable to contingently issuable shares	(2)	0	(6)
Income from continuing operations on which diluted earnings per share is calculated	\$5,499	\$9,435	\$8,718
Income/(loss) from discontinued operations, net of tax, on which basic and diluted earnings per share is calculated*	89	(4)	5
Net income on which diluted earnings per share is calculated	\$5,588	\$9,431	\$8,722
Earnings/(loss) per share of common stock			
Assuming dilution			
Continuing operations	\$ 6.13	\$10.57	\$ 9.51
Discontinued operations	0.10	(0.01)	0.01
Total	\$ 6.23	\$10.56	\$ 9.52
Basic			
Continuing operations	\$ 6.18	\$10.63	\$ 9.56
Discontinued operations	0.10	0.00	0.01
Total	\$ 6.28	\$10.63	\$ 9.57

* Related to discontinued operations of Microelectronics, divested in 2015.

Weighted-average stock options to purchase 1,417,665 common shares in 2020, 855,679 common shares in 2019 and 576,776 common shares in 2018 were outstanding, but were not included in the computation of diluted earnings per share because the exercise price of the options was greater than the average market price of the common shares for the full year, and therefore, the effect would have been antidilutive.

NOTE I. FINANCIAL ASSETS & LIABILITIES

Fair Value Measurements

Financial Assets and Liabilities Measured at Fair Value on a Recurring Basis

The following table presents the company's financial assets and financial liabilities that are measured at fair value on a recurring basis at December 31, 2020 and 2019.

At December 31:	Fair Value Hierarchy Level	2020		2019	
		Assets ⁽⁷⁾	Liabilities ⁽⁸⁾	Assets ⁽⁷⁾	Liabilities ⁽⁸⁾
Cash equivalents⁽¹⁾					
Time deposits and certificates of deposit ⁽²⁾	2	\$7,668	N/A	\$4,392	N/A
Money market funds	1	148	N/A	427	N/A
U.S. government securities ⁽²⁾	2	500	N/A	—	N/A
Total cash equivalents		\$8,316	N/A	\$4,819	N/A
Equity investments⁽³⁾	1	2	N/A	0	N/A
Debt securities—current ⁽²⁾⁽⁴⁾	2	600	N/A	696	N/A
Debt securities—noncurrent ⁽²⁾⁽⁵⁾	2	7	N/A	65	N/A
Derivatives designated as hedging instruments					
Interest rate contracts	2	100	—	56	—
Foreign exchange contracts	2	111	580	175	635
Derivatives not designated as hedging instruments					
Foreign exchange contracts	2	13	47	10	33
Equity contracts ⁽⁶⁾	1,2	12	—	1	4
Total		\$9,161	\$627	\$5,823	\$673

⁽¹⁾ Included within cash and cash equivalents in the Consolidated Balance Sheet.

⁽²⁾ Available-for-sale debt securities with carrying values that approximate fair value.

⁽³⁾ Included within investments and sundry assets in the Consolidated Balance Sheet.

⁽⁴⁾ Primarily includes time deposits and U.S. treasury bills that are reported within marketable securities in the Consolidated Balance Sheet.

⁽⁵⁾ Primarily includes government and corporate debt securities that are reported within investments and sundry assets in the Consolidated Balance Sheet.

⁽⁶⁾ Level 1 includes immaterial amounts related to equity futures contracts.

⁽⁷⁾ The gross balances of derivative assets contained within prepaid expenses and other current assets, and investments and sundry assets in the Consolidated Balance Sheet at December 31, 2020 were \$85 million and \$151 million, respectively, and at December 31, 2019 were \$149 million and \$94 million, respectively.

⁽⁸⁾ The gross balances of derivative liabilities contained within other accrued expenses and liabilities, and other liabilities in the Consolidated Balance Sheet at December 31, 2020 were \$587 million and \$40 million, respectively, and at December 31, 2019 were \$167 million and \$506 million, respectively.

N/A – Not applicable

Financial Assets and Liabilities Not Measured at Fair Value

Short-Term Receivables and Payables

Notes and other accounts receivable and other investments are financial assets with carrying values that approximate fair value. Accounts payable, other accrued expenses and short-term debt (excluding the current portion of long-term debt and including short-term finance lease liabilities) are financial liabilities with carrying values that approximate fair value. If measured at fair value in the financial statements, these financial instruments would be classified as Level 3 in the fair value hierarchy, except for short-term debt which would be classified as Level 2.

Loans and Long-Term Receivables

Fair values are based on discounted future cash flows using current interest rates offered for similar loans to clients with similar credit ratings for the same remaining maturities. At December 31, 2020 and 2019, the difference between the carrying amount and estimated fair value for loans and long-term receivables was immaterial. If measured at fair value in the financial statements, these financial instruments would be classified as Level 3 in the fair value hierarchy.

Long-Term Debt

Fair value of publicly traded long-term debt is based on quoted market prices for the identical liability when traded as an asset in an active market. For other long-term debt (including long-term finance lease liabilities) for which a quoted market price is not available, an expected present value technique that uses rates currently available to the company for debt with similar terms and remaining maturities is used to estimate fair value. The carrying amount of long-term debt was \$54,355 million and \$54,102 million, and the estimated fair value was \$61,598 million and \$58,431 million at December 31, 2020 and 2019, respectively. If measured at fair value in the financial statements, long-term debt (including the current portion) would be classified as Level 2 in the fair value hierarchy.

NOTE J. INVENTORY

(\$ in millions)	2020	2019
At December 31:		
Finished goods	\$ 190	\$ 220
Work in process and raw materials	1,649	1,399
Total	\$1,839	\$1,619

NOTE K. FINANCING RECEIVABLES

Financing receivables primarily consist of client loan and installment payment receivables (loans) and investment in sales-type and direct financing leases (collectively referred to as client financing receivables) and commercial financing receivables. Loans are provided primarily to clients to finance the purchase of hardware, software and services. Payment terms on these financing arrangements are generally for terms up to seven years. Investment in sales-type and direct financing leases relate principally to the company's Systems products and are for terms ranging generally from two to six years. Commercial financing receivables relate primarily to working capital financing for dealers and remarketers of IBM products. Payment terms for working capital financing generally range from 30 to 90 days.

Effective January 1, 2020, the company adopted the new accounting standard related to current expected credit losses. Under this new guidance, financing receivables are presented at amortized cost. Prior to the effective date, financing receivables were measured at recorded investment, which does not include residual value. As a result, all prior periods are presented at recorded investment, while current period information is presented at amortized cost. Additionally, current period information reflects updates to the portfolio segments, and other presentation changes within the following tables, as a result of the adoption of this new guidance. Refer to note A, "Significant Accounting Policies" and note B, "Accounting Changes" for additional information.

A summary of the components of the company's financing receivables is presented as follows:

(\$ in millions)	Client Financing Receivables			
	Client Loan and Installment Payment Receivables/ (Loans)	Investment in Sales-Type and Direct Financing Leases	Commercial Financing Receivables	Total
At December 31, 2020:				
Financing receivables, gross	\$12,159	\$4,001	\$2,419	\$18,580
Unearned income	(488)	(335)	0	(823)
Residual value*	—	485	—	485
Amortized cost	\$11,671	\$4,151	\$2,419	\$18,242
Allowance for credit losses	(173)	(82)	(8)	(263)
Total financing receivables, net	\$11,498	\$4,069	\$2,411	\$17,979
Current portion	\$ 6,955	\$1,525	\$2,411	\$10,892
Noncurrent portion	\$ 4,542	\$2,544	\$ —	\$ 7,086

* Includes guaranteed and unguaranteed residual value.

(\$ in millions)	Client Financing Receivables			
	Client Loan and Installment Payment Receivables/ (Loans)	Investment in Sales-Type and Direct Financing Leases	Commercial Financing Receivables	Total
At December 31, 2019:				
Financing receivables, gross	\$13,592	\$6,077	\$3,836	\$23,504
Unearned income	(570)	(509)	(4)	(1,083)
Recorded investment	\$13,022	\$5,567	\$3,831	\$22,421
Allowance for credit losses	(138)	(72)	(11)	(221)
Unguaranteed residual value	—	652	—	652
Guaranteed residual value	—	53	—	53
Total financing receivables, net	\$12,884	\$6,199	\$3,820	\$22,904
Current portion	\$ 8,037	\$2,334	\$3,820	\$14,192
Noncurrent portion	\$ 4,847	\$3,865	\$ —	\$ 8,712

The company has a long-standing practice of taking mitigation actions, in certain circumstances, to transfer credit risk to third parties, with enhanced focus in this unprecedented environment of the COVID-19 pandemic. These actions may include credit insurance, financial guarantees, nonrecourse borrowings, transfers of receivables recorded as true sales in accordance with accounting guidance

or sales of equipment under operating lease. Sale of receivables arrangements are also utilized in the normal course of business as part of the company's cash and liquidity management.

Financing receivables pledged as collateral for borrowings were \$482 million and \$1,062 million at December 31, 2020 and 2019, respectively. These borrowings are included in note P, "Borrowings."

Transfer of Financial Assets

For the year ended December 31, 2020, the company sold \$2,562 million of client financing receivables to third parties, consisting of loan and lease receivables of \$1,410 million and \$1,152 million, respectively. More than half of the receivables sold were classified as current assets at the time of sale.

On December 24, 2020, the company entered into an agreement with a third-party investor to sell up to \$3,000 million of IBM short-term commercial financing receivables, at any one time, on a revolving basis. The company sold \$515 million of commercial financing receivables under the agreement in the fourth quarter of 2020. In addition, the company included \$383 million of commercial financing receivables classified as held for sale at December 31, 2020 in short-term financing receivables in the Consolidated Balance Sheet. The carrying value of the receivables classified as held for sale approximates fair value.

The transfers of these receivables qualified as true sales and therefore reduced financing receivables, resulting in a benefit to cash flows from operating activities. The impact to the Consolidated Income Statement, including fees and net gain or loss associated with the transfer of these receivables for the year ended December 31, 2020, was not material.

The company did not have any material sales of financing receivables or any financing receivables classified as held for sale for the years ended December 31, 2019 and 2018.

Financing Receivables by Portfolio Segment

The following tables present the amortized cost basis or recorded investment for client financing receivables at December 31, 2020 and 2019, further segmented by three classes: Americas, Europe/Middle East/Africa (EMEA) and Asia Pacific. The commercial financing receivables portfolio segment is excluded from the tables in the sections below as the receivables are short term in nature and the current estimated risk of loss and resulting impact to the company's financial results are not material.

(\$ in millions)					
At December 31, 2020:	Americas		EMEA	Asia Pacific	Total
Amortized cost	\$ 7,758		\$ 5,023	\$ 3,042	\$ 15,822
Allowance for credit losses					
Beginning balance at December 31, 2019	\$ 120	\$ 54	\$ 36	\$ 210	
Adjustment for adoption of new standard	21	15	5	41	
Beginning balance at January 1, 2020	\$ 142	\$ 69	\$ 41	\$ 252	
Write-offs	(28)	(3)	(3)	(34)	
Recoveries	0	0	2	3	
Additions/(releases)	33	5	(4)	34	
Other*	(6)	6	1	1	
Ending balance at December 31, 2020	\$ 141	\$ 77	\$ 37	\$ 255	

* Primarily represents translation adjustments.

IBM continues to monitor the evolving global impacts from the COVID-19 pandemic as well as its impact on external economic models, which have been revised with increased frequency throughout the year. The company's allowance for credit losses at December 31, 2020 reflects the qualitative process which is described further in note A, "Significant Accounting Policies." Any changes to economic models that occurred after the balance sheet date will be reflected in future periods.

(\$ in millions)	Americas	EMEA	Asia Pacific	Total
At December 31, 2019:				
Recorded investment				
Lease receivables	\$ 3,419	\$ 1,186	\$ 963	\$ 5,567
Loan receivables	6,726	3,901	2,395	13,022
Ending balance	\$10,144	\$5,087	\$3,359	\$18,590
Recorded investment, collectively evaluated for impairment	\$10,032	\$5,040	\$3,326	\$18,399
Recorded investment, individually evaluated for impairment	\$ 112	\$ 47	\$ 32	\$ 191
Allowance for credit losses				
Beginning balance at January 1, 2019				
Lease receivables	\$ 53	\$ 22	\$ 24	\$ 99
Loan receivables	105	43	32	179
Total	\$ 158	\$ 65	\$ 56	\$ 279
Write-offs	(42)	(3)	(18)	(63)
Recoveries	1	0	1	2
Additions/(releases)	5	(7)	(3)	(5)
Other*	(1)	0	(1)	(2)
Ending balance at December 31, 2019	\$ 120	\$ 54	\$ 36	\$ 210
Lease receivables	\$ 33	\$ 23	\$ 16	\$ 72
Loan receivables	\$ 88	\$ 31	\$ 20	\$ 138
Related allowance, collectively evaluated for impairment	\$ 25	\$ 11	\$ 4	\$ 39
Related allowance, individually evaluated for impairment	\$ 96	\$ 43	\$ 32	\$ 171

* Primarily represents translation adjustments.

Write-offs of lease receivables and loan receivables were \$16 million and \$47 million, respectively, for the year ended December 31, 2019. Provisions for expected credit losses recorded for lease receivables and loan receivables were a release of \$6 million and an addition of \$2 million, respectively, for the year ended December 31, 2019.

When determining the allowances, financing receivables are evaluated either on an individual or a collective basis. For the company's policy on determining allowances for credit losses, refer to note A, "Significant Accounting Policies."

Past Due Financing Receivables

The company summarizes information about the amortized cost basis or recorded investment in client financing receivables, including amortized cost or recorded investments aged over 90 days and still accruing, billed invoices aged over 90 days and still accruing, and amortized cost or recorded investment not accruing.

(\$ in millions)

	Total Amortized Cost	Amortized Cost > 90 Days ⁽¹⁾	Amortized Cost > 90 Days and Accruing ⁽¹⁾	Billed Invoices > 90 Days and Accruing	Amortized Cost Not Accruing ⁽²⁾
At December 31, 2020:					
Americas	\$ 7,758	\$295	\$200	\$12	\$ 96
EMEA	5,023	119	28	5	95
Asia Pacific	3,042	42	12	4	32
Total client financing receivables	\$15,822	\$456	\$241	\$20	\$223

⁽¹⁾ At a contract level, which includes total billed and unbilled amounts for financing receivables aged greater than 90 days.

⁽²⁾ Of the amortized cost not accruing, there was a related allowance of \$178 million. Financing income recognized on these receivables was immaterial for the year ended December 31, 2020.

(\$ in millions)

	Total Recorded Investment	Recorded Investment > 90 Days ⁽¹⁾	Recorded Investment > 90 Days and Accruing ⁽¹⁾	Billed Invoices > 90 Days and Accruing	Recorded Investment Not Accruing ⁽²⁾
At December 31, 2019:					
Americas	\$ 3,419	\$187	\$147	\$11	\$ 41
EMEA	1,186	28	13	2	17
Asia Pacific	963	19	7	1	11
Total lease receivables	\$ 5,567	\$234	\$168	\$14	\$ 69
Americas	\$ 6,726	\$127	\$ 71	\$11	\$ 72
EMEA	3,901	77	8	3	72
Asia Pacific	2,395	26	6	2	21
Total loan receivables	\$13,022	\$231	\$ 85	\$15	\$166
Total	\$18,590	\$465	\$253	\$29	\$235

⁽¹⁾ At a contract level, which includes total billed and unbilled amounts for financing receivables aged greater than 90 days.

⁽²⁾ Of the recorded investment not accruing, \$191 million was individually evaluated for impairment with a related allowance of \$171 million. Financing income on these receivables was immaterial for the year ended December 31, 2019.

Credit Quality Indicators

The company's credit quality indicators, which are based on rating agency data, publicly available information and information provided by customers, are reviewed periodically based on the relative level of risk. The resulting indicators are a numerical rating system that maps to Moody's Investors Service credit ratings as shown below. The company uses information provided by Moody's, where available, as one of many inputs in its determination of customer credit ratings. The credit quality of the customer is evaluated based on these indicators and is assigned the same risk rating whether the receivable is a lease or a loan.

The following tables present the amortized cost basis or recorded investment for client financing receivables by credit quality indicator, at December 31, 2020 and 2019, respectively. Receivables with a credit quality indicator ranging from Aaa to Baa3 are considered investment grade. All others are considered non-investment grade. Effective January 1, 2020, under the new guidance for current expected credit losses, the company discloses its credit quality by year of origination. Additionally, under the new guidance, the amortized cost is presented on a gross basis, whereas under the prior guidance, the company presented the recorded investment net of the allowance for credit losses. At December 31, 2020, the credit quality indicators reflect mitigating credit enhancement actions taken by customers which reduces the risk to IBM.

(\$ in millions)

	Americas		EMEA		Asia Pacific	
	Aaa - Baa3	Ba1 - D	Aaa - Baa3	Ba1 - D	Aaa - Baa3	Ba1 - D
At December 31, 2020:						
Vintage year:						
2020	\$2,818	\$1,449	\$1,513	\$1,427	\$ 958	\$351
2019	988	623	668	519	564	123
2018	829	360	329	245	419	167
2017	285	154	70	128	205	52
2016	90	52	33	46	114	33
2015 and prior	28	81	22	22	38	18
Total	\$5,038	\$2,720	\$2,635	\$2,387	\$2,298	\$743

(\$ in millions)

At December 31, 2019:	Lease Receivables			Loan Receivables		
	Americas	EMEA	Asia Pacific	Americas	EMEA	Asia Pacific
Credit rating						
Aaa—Aa3	\$ 465	\$ 54	\$ 43	\$1,028	\$ 193	\$ 189
A1—A3	750	181	454	1,186	395	892
Baa1—Baa3	955	409	147	1,882	1,527	619
Ba1—Ba2	746	326	154	1,513	921	388
Ba3—B1	215	140	101	471	564	205
B2—B3	242	50	47	522	253	72
Caa—D	13	2	2	36	18	10
Total	\$3,385	\$1,162	\$947	\$6,638	\$3,871	\$2,376

Troubled Debt Restructurings

The company did not have any significant troubled debt restructurings for the years ended December 31, 2020 and 2019.

NOTE L. PROPERTY, PLANT & EQUIPMENT

(\$ in millions)

At December 31:	2020	2019
Land and land improvements	\$ 381	\$ 365
Buildings and building and leasehold improvements	9,416	9,364
Information technology equipment	19,419	18,054
Production, engineering, office and other equipment	3,695	3,721
Plant and other property—gross	32,911	31,504
Less: Accumulated depreciation	22,968	21,726
Plant and other property—net	9,943	9,778
Rental machines	265	523
Less: Accumulated depreciation	168	292
Rental machines—net	97	232
Total—net	\$10,040	\$10,010

NOTE M. LEASES

Accounting for Leases as a Lessee

The following tables presents the various components of lease costs:

(\$ in millions)

For the year ended December 31:	2020	2019
Finance lease cost	\$ 91	\$ 30
Operating lease cost	1,581	1,645
Short-term lease cost	38	38
Variable lease cost	480	534
Sublease income	(31)	(24)
Total lease cost	\$2,158	\$2,223

The company had no sale and leaseback transactions for the year ended December 31, 2020. The company recorded net gains on sale and leaseback transactions of \$41 million for the year ended December 31, 2019.

Rental expense, including amounts charged to inventory and fixed assets, and excluding amounts previously reserved, was \$1,944 million for the year ended December 31, 2018.

The following table presents supplemental information relating to the cash flows arising from lease transactions. Cash payments related to variable lease costs and short-term leases are not included in the measurement of operating and finance lease liabilities, and, as such, are excluded from the amounts below.

(\$ in millions)	2020	2019
For the year ended December 31:		
Cash paid for amounts included in the measurement of lease liabilities		
Operating cash outflows from finance leases	\$ 10	\$ 8
Financing cash outflows from finance leases	85	22
Operating cash outflows from operating leases	1,566	1,541
ROU assets obtained in exchange for new finance lease liabilities	176	209 *
ROU assets obtained in exchange for new operating lease liabilities	1,130	6,481 *

* Includes opening balance additions as a result of the adoption of the new lease guidance effective January 1, 2019. The post adoption addition of leases for the year ended December 31, 2019 was \$1,679 million for operating leases and immaterial for finance leases.

The following table presents the weighted-average lease term and discount rate for finance and operating leases.

At December 31:	2020	2019
Finance leases		
Weighted-average remaining lease term	3.9 yrs.	4.8 yrs.
Weighted-average discount rate	1.28 %	1.62 %
Operating leases		
Weighted-average remaining lease term	5.0 yrs.	5.4 yrs.
Weighted-average discount rate	3.06 %	3.03 %

The following table presents a maturity analysis of expected undiscounted cash flows for operating and finance leases on an annual basis for the next five years and thereafter.

(\$ in millions)	2021	2022	2023	2024	2025	Thereafter	Imputed Interest *	Total **
Finance leases	\$ 106	\$ 90	\$ 62	\$ 33	\$ 16	\$ 36	\$ (47)	\$ 296
Operating leases	1,468	1,186	885	683	405	638	(334)	4,930

* Imputed interest represents the difference between undiscounted cash flows and discounted cash flows.

** The company entered into lease agreements for certain facilities and equipment with payments totaling approximately \$376 million that have not yet commenced as of December 31, 2020, and therefore are not included in this table.

The following table presents the total amount of finance leases recognized in the Consolidated Balance Sheet:

(\$ in millions)	2020	2019
At December 31:		
ROU Assets—Property, plant and equipment	\$282	\$187
Lease Liabilities		
Short-term debt	97	52
Long-term debt	199	151

Accounting for Leases as a Lessor

The following table presents amounts included in the Consolidated Income Statement related to lessor activity:

(\$ in millions)	2020	2019
For the year ended December 31:		
Lease income—sales-type and direct financing leases		
Sales-type lease selling price	\$1,357	\$1,509
Less: Carrying value of underlying assets*	439	591
Gross profit	917	918
Interest income on lease receivables	249	303
Total sales-type and direct financing lease income	1,166	1,221
Lease income—operating leases	260	324
Variable lease income	115	56
Total lease income	\$1,541	\$1,601

* Excludes unguaranteed residual value.

Notes to Consolidated Financial Statements
 International Business Machines Corporation and Subsidiary Companies

Sales-Type and Direct Financing Leases

At December 31, 2020 and 2019, the unguaranteed residual values of sales-type and direct financing leases were \$469 million and \$652 million, respectively. For further information on the company's net investment in leases, including guaranteed and unguaranteed residual values, refer to note K, "Financing Receivables."

For the years ended December 31, 2020 and 2019, impairment of residual values was immaterial.

The following table presents a maturity analysis of the lease payments due to IBM on sales-type and direct financing leases over the next five years and thereafter, as well as a reconciliation of the undiscounted cash flows to the financing receivables recognized in the Consolidated Balance Sheet at December 31, 2020:

(\$ in millions)	Total
2021	\$1,766
2022	1,233
2023	645
2024	275
2025	74
Thereafter	7
Total undiscounted cash flows	\$4,001
Present value of lease payments (recognized as financing receivables)	3,666 *
Difference between undiscounted cash flows and discounted cash flows	\$ 335

* The present value of the lease payments will not equal the financing receivables balances in the Consolidated Balance Sheet due to certain items, including IDCs, allowance for credit losses and residual values, which are included in the financing receivable balance, but are not included in the future lease payments.

Operating Leases

The following table presents a maturity analysis of the undiscounted lease payments due to IBM on operating leases over the next five years and thereafter, at December 31, 2020:

(\$ in millions)	Total
2021	\$50
2022	15
2023	2
2024	0
2025	—
Thereafter	—
Total undiscounted cash flows	\$67

There were no material impairment losses incurred for equipment provided to clients under an operating lease for the years ended December 31, 2020 and 2019.

At December 31, 2020 and 2019, the unguaranteed residual values of operating leases were \$48 million and \$81 million, respectively.

NOTE N. INTANGIBLE ASSETS INCLUDING GOODWILL

Intangible Assets

The following table presents the company's intangible asset balances by major asset class:

(\$ in millions)	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount *
At December 31, 2020:			
Intangible asset class			
Capitalized software	\$ 1,777	\$ (814)	\$ 963
Client relationships	8,838	(2,056)	6,783
Completed technology	5,957	(1,671)	4,286
Patents/trademarks	2,246	(499)	1,747
Other**	56	(39)	16
Total	\$18,874	\$(5,079)	\$13,796

* Includes an increase in net intangible asset balance of \$279 million due to foreign currency translation.

** Other intangibles are primarily acquired proprietary and nonproprietary business processes, methodologies and systems.

(\$ in millions)	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount *
At December 31, 2019:			
Intangible asset class			
Capitalized software	\$ 1,749	\$ (743)	\$ 1,006
Client relationships	8,921	(1,433)	7,488
Completed technology	6,261	(1,400)	4,861
Patents/trademarks	2,301	(445)	1,856
Other**	56	(31)	24
Total	\$19,287	\$ (4,052)	\$15,235

* Includes a decrease in net intangible asset balance of \$42 million due to foreign currency translation.

** Other intangibles are primarily acquired proprietary and nonproprietary business processes, methodologies and systems.

There was no impairment of intangible assets recorded in 2020 and 2019. The net carrying amount of intangible assets decreased \$1,439 million during the year ended December 31, 2020, primarily due to intangible asset amortization, partially offset by additions of capitalized software. The aggregate intangible amortization expense was \$2,468 million and \$1,850 million for the years ended December 31, 2020 and 2019, respectively. The increase in intangible amortization expense during 2020 was primarily due to an increase in the gross carrying amount of intangible assets from the Red Hat acquisition which closed in the third quarter of 2019. In addition, in 2020 and 2019, respectively, the company retired \$1,483 million and \$946 million of fully amortized intangible assets, impacting both the gross carrying amount and accumulated amortization by this amount.

The future amortization expense relating to intangible assets currently recorded in the Consolidated Balance Sheet is estimated to be the following at December 31, 2020:

(\$ in millions)	Capitalized Software	Acquired Intangibles	Total
2021	\$544	\$1,809	\$ 2,353
2022	305	1,746	2,051
2023	114	1,432	1,546
2024	0	1,382	1,383
2025	—	1,364	1,364
Thereafter	—	5,099	5,099

Goodwill

The changes in the goodwill balances by reportable segment, for the years ended December 31, 2020 and 2019, are as follows:

(\$ in millions)	Foreign Currency Translation and Other Adjustments **					Balance at December 31, 2020
Segment	Balance at January 1, 2020	Goodwill Additions	Purchase Price Adjustments	Divestitures	Adjustments **	Balance at December 31, 2020
Cloud & Cognitive Software	\$43,037	\$362	\$(139)	\$ —	\$675	\$43,934
Global Business Services	5,775	205	—	—	165	6,145
Global Technology Services	7,141	—	—	—	104	7,245
Systems	2,270	8	—	—	15	2,293
Total	\$58,222	\$575	\$(139)	\$ —	\$960	\$59,617

(\$ in millions)	Foreign Currency Translation and Other Adjustments **					Balance at December 31, 2019
Segment	Balance at January 1, 2019	Goodwill Additions	Purchase Price Adjustments	Divestitures	Adjustments **	Balance at December 31, 2019
Cloud & Cognitive Software*	\$24,463	\$18,399	\$ 133	\$ —	\$ 41	\$43,037
Global Business Services	4,711	1,059	1	(1)	5	5,775
Global Technology Services	3,988	3,119	—	—	34	7,141
Systems	1,847	525	(110)	—	7	2,270
Other—divested businesses*	1,256	—	—	(1,256)	—	—
Total	\$36,265	\$23,102	\$ 24	\$ (1,257)	\$ 87	\$58,222

* Recast to conform to 2020 presentation.

** Primarily driven by foreign currency translation.

There were no goodwill impairment losses recorded during 2020 or 2019 and the company has no accumulated impairment losses.

Notes to Consolidated Financial Statements

International Business Machines Corporation and Subsidiary Companies

Purchase price adjustments recorded in 2020 and 2019 were related to acquisitions that were still subject to the measurement period that ends at the earlier of 12 months from the acquisition date or when information becomes available. During 2020, net purchase price adjustments recorded to noncurrent tax assets and liabilities were related to the Red Hat acquisition. Net purchase price adjustments recorded in 2019 were not material.

NOTE O. INVESTMENTS & SUNDRY ASSETS

(\$ in millions)	2020	2019
At December 31:		
Derivatives—noncurrent	\$ 151	\$ 94
Alliance investments		
Equity method	172	184
Non-equity method	54	38
Long-term deposits	239	242
Other receivables	423	276
Employee benefit-related	238	253
Prepaid income taxes	777	664
Other assets	227	321
Total	\$2,282	\$2,074

NOTE P. BORROWINGS**Short-Term Debt**

(\$ in millions)	2020	2019
At December 31:		
Commercial paper	\$ —	\$ 304
Short-term loans	130	971
Long-term debt—current maturities	7,053	7,522
Total	\$7,183	\$8,797

The weighted-average interest rate for commercial paper at December 31, 2019 was 1.6 percent. The weighted-average interest rate for short-term loans was 5.7 percent and 6.1 percent at December 31, 2020 and 2019, respectively.

Long-Term Debt
Pre-Swap Borrowing

(\$ in millions)

At December 31:	Maturities	2020	2019
U.S. dollar debt (weighted-average interest rate at December 31, 2020):*			
2.3%	2020	\$ —	\$ 4,326
1.3%	2021	5,499	8,498
2.6%	2022	6,233	6,289
3.3%	2023	2,395	2,388
3.3%	2024	5,029	5,045
6.8%	2025	631	636
3.3%	2026	4,370	4,350
3.0%	2027	2,219	969
6.5%	2028	313	313
3.5%	2029	3,250	3,250
2.0%	2030	1,350	—
5.9%	2032	600	600
8.0%	2038	83	83
4.5%	2039	2,745	2,745
2.9%	2040	650	—
4.0%	2042	1,107	1,107
7.0%	2045	27	27
4.7%	2046	650	650
4.3%	2049	3,000	3,000
3.0%	2050	750	—
7.1%	2096	316	316
		\$41,218	\$44,594
Other currencies (weighted-average interest rate at December 31, 2020, in parentheses):*			
Euro (1.1%)	2021-2040	\$18,355	\$14,306
Pound sterling (2.6%)	2021-2022	411	1,390
Japanese yen (0.3%)	2022-2026	1,409	1,339
Other (3.7%)	2021-2024	324	375
		\$61,718	\$62,003
Finance lease obligations (1.5%)	2021-2030	296	204
		\$62,013	\$62,207
Less: net unamortized discount		875	881
Less: net unamortized debt issuance costs		156	142
Add: fair value adjustment**		426	440
		\$61,408	\$61,624
Less: current maturities		7,053	7,522
Total		\$54,355	\$54,102

* Includes notes, debentures, bank loans and secured borrowings.

** The portion of the company's fixed-rate debt obligations that is hedged is reflected in the Consolidated Balance Sheet as an amount equal to the sum of the debt's carrying value and a fair value adjustment representing changes in the fair value of the hedged debt obligations attributable to movements in benchmark interest rates.

The company's indenture governing its debt securities and its various credit facilities each contain significant covenants which obligate the company to promptly pay principal and interest, limit the aggregate amount of secured indebtedness and sale and leaseback transactions to 10 percent of the company's consolidated net tangible assets, and restrict the company's ability to merge or consolidate unless certain conditions are met. The credit facilities also include a covenant on the company's consolidated net interest expense ratio, which cannot be less than 2.20 to 1.0, as well as a cross default provision with respect to other defaulted indebtedness of at least \$500 million.

The company is in compliance with all of its debt covenants and provides periodic certifications to its lenders. The failure to comply with its debt covenants could constitute an event of default with respect to the debt to which such provisions apply. If certain events of default were to occur, the principal and interest on the debt to which such event of default applied would become immediately due and payable.

In the first half of 2019, the company issued an aggregate of \$20 billion of U.S. dollar fixed- and floating-rate notes and \$5.7 billion of Euro fixed-rate notes. The proceeds were primarily used for the acquisition of Red Hat. For additional information on this transaction, refer to note E, "Acquisitions & Divestitures." In the first half of 2020, the company issued an aggregate of \$4.1 billion of Euro fixed-rate notes and \$4.0 billion of U.S. dollar fixed-rate notes. The proceeds from the Euro issuance were primarily used to early redeem outstanding fixed-rate notes which were due in 2021 in the aggregate amount of \$2.9 billion. The company incurred a loss of \$49

million in the first quarter of 2020 upon redemption, which was recorded in other (income) and expense in the Consolidated Income Statement.

Post-Swap Borrowing (Long-Term Debt, Including Current Portion)

(\$ in millions)

	2020		2019	
	Amount	Weighted-Average Interest Rate	Amount	Weighted-Average Interest Rate
For the year ended December 31:				
Fixed-rate debt	\$53,442	2.7 %	\$52,169	2.9 %
Floating-rate debt*	7,966	1.1 %	9,455	2.2 %
Total	\$61,408		\$61,624	

* Includes \$2,975 million in 2020 and 2019 of notional interest-rate swaps that effectively convert fixed-rate long-term debt into floating-rate debt. Refer to note T, "Derivative Financial Instruments," for additional information.

Pre-swap annual contractual obligations of long-term debt outstanding at December 31, 2020, are as follows:

(\$ in millions)

	Total
2021	\$ 7,053
2022	7,345
2023	5,807
2024	6,506
2025	4,282
Thereafter	31,020
Total	\$62,013

Interest on Debt

(\$ in millions)

For the year ended December 31:	2020	2019	2018
Cost of financing	\$ 451	\$ 608	\$ 757
Interest expense	1,288	1,344	723
Interest capitalized	6	5	3
Total interest paid and accrued	\$1,745	\$1,957	\$1,482

Refer to the related discussion in note D, "Segments," for total interest expense of the Global Financing segment. Refer to note T, "Derivative Financial Instruments," for a discussion of the use of foreign currency denominated debt designated as a hedge of net investment, as well as a discussion of the use of currency and interest-rate swaps in the company's debt risk management program.

Lines of Credit

On July 2, 2020, the company and IBM Credit LLC entered into a new \$2.5 billion 364-day Credit Agreement to replace the existing \$2.5 billion 364-day Credit Agreement, and also extended the maturity date of the existing \$2.5 billion Three-Year Credit Agreement. The new maturity dates for the 364-day and Three-Year Credit Agreements are July 1, 2021 and July 20, 2023, respectively. The company also amended its \$10.25 billion Five-Year Credit Agreement to include an option exercisable in 2021 to extend the current maturity date of July 20, 2024 by an additional two years. Each of the facility sizes remained unchanged. The total expense recorded by the company related to the Five-Year Credit Agreement was \$8 million in 2020, \$7 million in 2019 and \$7 million in 2018. The total expense recorded by the company related to the 364-day and Three-Year Credit Agreements was \$4 million in 2020, \$2 million in 2019 and \$2 million in 2018. The Five-Year Credit Agreement permits the company and its subsidiary borrowers to borrow up to \$10.25 billion on a revolving basis. Borrowings of the subsidiary borrowers will be unconditionally backed by the company. The company may also, upon the agreement of either existing lenders, or of additional banks not currently party to the Five-Year Credit Agreement, increase the commitments under the Credit Agreement up to an additional \$1.75 billion. The 364-day Credit Agreement and the Three-Year Credit Agreement allow the company and IBM Credit (each a Borrower) to borrow up to an aggregate of \$5 billion on a revolving basis. Neither Borrower is a guarantor or co-obligor of the other Borrower under the 364-day and Three-Year Credit Agreements. Subject to certain conditions stated in the Five-Year, 364-day and Three-Year Credit Agreements (the Credit Agreements), the Borrowers may borrow, prepay and re-borrow amounts under the Credit Agreements at any time during the term of such agreements. Funds borrowed may be used for the general corporate purposes of the Borrowers.

Interest rates on borrowings under the Credit Agreements will be based on prevailing market interest rates, as further described in the Credit Agreements. The Credit Agreements contain customary representations and warranties, covenants, events of default, and indemnification provisions. The company believes that circumstances that might give rise to breach of these covenants or an event of default, as specified in the Credit Agreements, are remote. The company also has other committed lines of credit in some of the geographies

which are not significant in the aggregate. Interest rates and other terms of borrowing under these lines of credit vary from country to country, depending on local market conditions.

As of December 31, 2020, there were no borrowings by the company, or its subsidiaries, under these credit facilities.

NOTE Q. OTHER LIABILITIES

(\$ in millions)

At December 31:	2020	2019
Income tax reserves	\$ 5,274	\$ 5,118
Excess 401(k) Plus Plan	1,635	1,521
Disability benefits	452	478
Derivative liabilities	40	506
Workforce reductions	956	725
Deferred taxes	5,472	5,230
Other taxes payable	253	42
Environmental accruals	246	254
Warranty accruals	33	45
Asset retirement obligations	117	94
Acquisition related	60	9
Divestiture related	62	65
Other	297	439
Total	\$14,897	\$14,526

In response to changing business needs, the company periodically takes workforce reduction actions to improve productivity, cost competitiveness and to rebalance skills. The noncurrent contractually obligated future payments associated with these activities are reflected in the workforce reductions caption in the previous table. The noncurrent liabilities are workforce accruals primarily related to terminated employees who are no longer working for the company who were granted annual payments to supplement their incomes in certain countries. Depending on the individual country's legal requirements, these required payments will continue until the former employee begins receiving pension benefits or passes away. The total amounts accrued for workforce reductions, including amounts classified as other accrued expenses and liabilities in the Consolidated Balance Sheet were \$3,151 million and \$950 million at December 31, 2020 and 2019, respectively. The increase in the total amount accrued as of December 31, 2020 relates primarily to the workforce reduction action in the fourth quarter of 2020 for which the company recorded a charge of \$2,036 million in selling, general and administrative expense in the Consolidated Income Statement for severance and employee related benefits in accordance with the accounting guidance for ongoing benefit arrangements.

The company employs extensive internal environmental protection programs that primarily are preventive in nature. The company also participates in environmental assessments and cleanups at a number of locations, including operating facilities, previously owned facilities and Superfund sites. The company's maximum exposure for all environmental liabilities cannot be estimated and no amounts have been recorded for non-ARO environmental liabilities that are not probable or estimable. The total amounts accrued for non-ARO environmental liabilities, including amounts classified as current in the Consolidated Balance Sheet, that do not reflect actual or anticipated insurance recoveries, were \$266 million and \$270 million at December 31, 2020 and 2019, respectively. Estimated environmental costs are not expected to materially affect the consolidated financial position or consolidated results of the company's operations in future periods. However, estimates of future costs are subject to change due to protracted cleanup periods and changing environmental remediation regulations.

As of December 31, 2020, the company was unable to estimate the range of settlement dates and the related probabilities for certain asbestos remediation AROs. These conditional AROs are primarily related to the encapsulated structural fireproofing that is not subject to abatement unless the buildings are demolished and non-encapsulated asbestos that the company would remediate only if it performed major renovations of certain existing buildings. Because these conditional obligations have indeterminate settlement dates, the company could not develop a reasonable estimate of their fair values. The company will continue to assess its ability to estimate fair values at each future reporting date. The related liability will be recognized once sufficient additional information becomes available. The total amounts accrued for ARO liabilities, including amounts classified as current in the Consolidated Balance Sheet, were \$154 million and \$150 million at December 31, 2020 and 2019, respectively.

NOTE R. COMMITMENTS & CONTINGENCIES

Commitments

The company's extended lines of credit to third-party entities include unused amounts of \$2.1 billion and \$1.8 billion at December 31, 2020 and 2019, respectively. A portion of these amounts was available to the company's business partners to support their working capital needs. In addition, the company has committed to provide future financing to its clients in connection with client purchase agreements for \$5.2 billion and \$6.3 billion at December 31, 2020 and 2019, respectively. Effective January 1, 2020, the company adopted the new standard on current expected credit losses, which resulted in the recognition of a related allowance for non-cancellable off-balance sheet commitments. Refer to note B, "Accounting Changes," for additional information. The allowance for these commitments is recorded in other liabilities in the Consolidated Balance Sheet and was not material at December 31, 2020. The company collectively evaluates the allowance for these arrangements using a provision methodology consistent with the portfolio of the commitments. Refer to note A, "Significant Accounting Policies," for additional information.

The company has applied the guidance requiring a guarantor to disclose certain types of guarantees, even if the likelihood of requiring the guarantor's performance is remote. The following is a description of arrangements in which the company is the guarantor.

The company is a party to a variety of agreements pursuant to which it may be obligated to indemnify the other party with respect to certain matters. Typically, these obligations arise in the context of contracts entered into by the company, under which the company customarily agrees to hold the party harmless against losses arising from a breach of representations and covenants related to such matters as title to the assets sold, certain intellectual property rights, specified environmental matters, third-party performance of nonfinancial contractual obligations and certain income taxes. In each of these circumstances, payment by the company is conditioned on the other party making a claim pursuant to the procedures specified in the particular contract, the procedures of which typically allow the company to challenge the other party's claims. While indemnification provisions typically do not include a contractual maximum on the company's payment, the company's obligations under these agreements may be limited in terms of time and/or nature of claim, and in some instances, the company may have recourse against third parties for certain payments made by the company.

It is not possible to predict the maximum potential amount of future payments under these or similar agreements due to the conditional nature of the company's obligations and the unique facts and circumstances involved in each particular agreement. Historically, payments made by the company under these agreements have not had a material effect on the company's business, financial condition or results of operations.

In addition, the company guarantees certain loans and financial commitments. The maximum potential future payment under these financial guarantees and the fair value of these guarantees recognized in the Consolidated Balance Sheet at December 31, 2020 and 2019 was not material.

Changes in the company's warranty liability for standard warranties, which are included in other accrued expenses and liabilities and other liabilities in the Consolidated Balance Sheet, and for extended warranty contracts, which are included in deferred income in the Consolidated Balance Sheet, are presented in the following tables.

Standard Warranty Liability

(\$ in millions)	2020	2019
Balance at January 1	\$ 113	\$ 118
Current period accruals	83	111
Accrual adjustments to reflect experience	(16)	(1)
Charges incurred	(96)	(115)
Balance at December 31	\$ 83	\$ 113

Extended Warranty Liability (Deferred Income)

(\$ in millions)	2020	2019
Balance at January 1	\$ 477	\$ 533
Revenue deferred for new extended warranty contracts	166	198
Amortization of deferred revenue	(224)	(253)
Other*	6	(2)
Balance at December 31	\$ 425	\$ 477
Current portion	\$ 204	\$ 227
Noncurrent portion	\$ 221	\$ 250

* Other consists primarily of foreign currency translation adjustments.

Contingencies

As a company with a substantial employee population and with clients in more than 175 countries, IBM is involved, either as plaintiff or defendant, in a variety of ongoing claims, demands, suits, investigations, tax matters and proceedings that arise from time to time in the ordinary course of its business. The company is a leader in the information technology industry and, as such, has been and will continue to be subject to claims challenging its IP rights and associated products and offerings, including claims of copyright and patent infringement and violations of trade secrets and other IP rights. In addition, the company enforces its own IP against infringement, through license negotiations, lawsuits or otherwise. Further, given the rapidly evolving external landscape of cybersecurity, privacy and data protection laws, regulations and threat actors, the company or its clients could become subject to actions or proceedings in various jurisdictions. Also, as is typical for companies of IBM's scope and scale, the company is party to actions and proceedings in various jurisdictions involving a wide range of labor and employment issues (including matters related to contested employment decisions, country-specific labor and employment laws, and the company's pension, retirement and other benefit plans), as well as actions with respect to contracts, product liability, securities, foreign operations, competition law and environmental matters. These actions may be commenced by a number of different parties, including competitors, clients, current or former employees, government and regulatory agencies, stockholders and representatives of the locations in which the company does business. Some of the actions to which the company is party may involve particularly complex technical issues, and some actions may raise novel questions under the laws of the various jurisdictions in which these matters arise.

The company records a provision with respect to a claim, suit, investigation or proceeding when it is probable that a liability has been incurred and the amount of the loss can be reasonably estimated. Any recorded liabilities, including any changes to such liabilities for the years ended December 31, 2020, 2019 and 2018 were not material to the Consolidated Financial Statements.

In accordance with the relevant accounting guidance, the company provides disclosures of matters for which the likelihood of material loss is at least reasonably possible. In addition, the company also discloses matters based on its consideration of other matters and qualitative factors, including the experience of other companies in the industry, and investor, customer and employee relations considerations.

With respect to certain of the claims, suits, investigations and proceedings discussed herein, the company believes at this time that the likelihood of any material loss is remote, given, for example, the procedural status, court rulings, and/or the strength of the company's defenses in those matters. With respect to the remaining claims, suits, investigations and proceedings discussed in this note, except as specifically discussed herein, the company is unable to provide estimates of reasonably possible losses or range of losses, including losses in excess of amounts accrued, if any, for the following reasons. Claims, suits, investigations and proceedings are inherently uncertain, and it is not possible to predict the ultimate outcome of these matters. It is the company's experience that damage amounts claimed in litigation against it are unreliable and unrelated to possible outcomes, and as such are not meaningful indicators of the company's potential liability. Further, the company is unable to provide such an estimate due to a number of other factors with respect to these claims, suits, investigations and proceedings, including considerations of the procedural status of the matter in question, the presence of complex or novel legal theories, and/or the ongoing discovery and development of information important to the matters. The company reviews claims, suits, investigations and proceedings at least quarterly, and decisions are made with respect to recording or adjusting provisions and disclosing reasonably possible losses or range of losses (individually or in the aggregate), to reflect the impact and status of settlement discussions, discovery, procedural and substantive rulings, reviews by counsel and other information pertinent to a particular matter.

Whether any losses, damages or remedies finally determined in any claim, suit, investigation or proceeding could reasonably have a material effect on the company's business, financial condition, results of operations or cash flows will depend on a number of variables, including: the timing and amount of such losses or damages; the structure and type of any such remedies; the significance of the impact any such losses, damages or remedies may have in the Consolidated Financial Statements; and the unique facts and circumstances of the particular matter that may give rise to additional factors. While the company will continue to defend itself vigorously, it is possible that the company's business, financial condition, results of operations or cash flows could be affected in any particular period by the resolution of one or more of these matters.

The following is a summary of the more significant legal matters involving the company.

The company is a defendant in an action filed on March 6, 2003 in state court in Salt Lake City, Utah by the SCO Group (SCO v. IBM). The company removed the case to Federal Court in Utah. Plaintiff is an alleged successor in interest to some of AT&T's UNIX IP rights, and alleges copyright infringement, unfair competition, interference with contract and breach of contract with regard to the company's distribution of AIX and Dynix and contribution of code to Linux and the company has asserted counterclaims. On September 14, 2007, plaintiff filed for bankruptcy protection, and all proceedings in this case were stayed. The court in another suit, the SCO Group, Inc. v. Novell, Inc., held a trial in March 2010. The jury found that Novell is the owner of UNIX and UnixWare copyrights; the judge subsequently ruled that SCO is obligated to recognize Novell's waiver of SCO's claims against IBM and Sequent for breach of UNIX license agreements. On August 30, 2011, the Tenth Circuit Court of Appeals affirmed the district court's ruling and denied SCO's appeal of this matter. In June 2013, the Federal Court in Utah granted SCO's motion to reopen the SCO v. IBM case. In February 2016, the

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Federal Court ruled in favor of IBM on all of SCO's remaining claims, and SCO appealed. On October 30, 2017, the Tenth Circuit Court of Appeals affirmed the dismissal of all but one of SCO's remaining claims, which was remanded to the Federal Court in Utah.

On March 9, 2017, the Commonwealth of Pennsylvania's Department of Labor and Industry sued IBM in Pennsylvania state court regarding a 2006 contract for the development of a custom software system to manage the Commonwealth's unemployment insurance benefits programs. The matter is pending in a Pennsylvania court.

In December 2017, CIS General Insurance Limited (CISGIL) sued IBM UK regarding a contract entered into by IBM UK and CISGIL in 2015 to implement and operate an IT insurance platform. The contract was terminated by IBM UK in July 2017 for non-payment by CISGIL. CISGIL alleges wrongful termination, breach of contract and breach of warranty. The matter is pending in the London High Court with trial beginning in January 2020.

In May 2015, a putative class action was commenced in the United States District Court for the Southern District of New York related to the company's October 2014 announcement that it was divesting its global commercial semiconductor technology business, alleging violations of the Employee Retirement Income Security Act (ERISA). Management's Retirement Plans Committee and three current or former IBM executives are named as defendants. On September 29, 2017, the Court granted the defendants' motion to dismiss the first amended complaint. On December 10, 2018, the Second Circuit Court of Appeals reversed the District Court order. On January 14, 2020, the Supreme Court of the United States vacated the decision and remanded the case to the Second Circuit. On June 22, 2020, the Second Circuit reinstated its prior decision and remanded the case to the District Court. In February 2021, the parties reached an agreement to settle the matter subject to court approval.

The company is party to, or otherwise involved in, proceedings brought by U.S. federal or state environmental agencies under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), known as "Superfund," or laws similar to CERCLA. Such statutes require potentially responsible parties to participate in remediation activities regardless of fault or ownership of sites. The company is also conducting environmental investigations, assessments or remediations at or in the vicinity of several current or former operating sites globally pursuant to permits, administrative orders or agreements with country, state or local environmental agencies, and is involved in lawsuits and claims concerning certain current or former operating sites.

The company is also subject to ongoing tax examinations and governmental assessments in various jurisdictions. Along with many other U.S. companies doing business in Brazil, the company is involved in various challenges with Brazilian tax authorities regarding non-income tax assessments and non-income tax litigation matters. The total potential amount related to all these matters for all applicable years is approximately \$750 million. The company believes it will prevail on these matters and that this amount is not a meaningful indicator of liability.

NOTE S. EQUITY ACTIVITY

The authorized capital stock of IBM consists of 4,687,500,000 shares of common stock with a \$.20 per share par value, of which 892,653,424 shares were outstanding at December 31, 2020, and 150,000,000 shares of preferred stock with a \$.01 per share par value, none of which were outstanding at December 31, 2020.

Stock Repurchases

The Board of Directors authorizes the company to repurchase IBM common stock. The company suspended its share repurchase program effective with the close of the Red Hat acquisition on July 9, 2019 in order to focus on reducing debt related to the acquisition. The company repurchased 9,979,516 common shares at a cost of \$1,331 million, and 32,949,233 common shares at a cost of \$4,447 million in 2019 and 2018, respectively. These amounts reflect transactions executed through December 31 of each year. Actual cash disbursements for repurchased shares may differ due to varying settlement dates for these transactions. At December 31, 2020, \$2,008 million of Board common stock repurchase authorization was available.

Other Stock Transactions

The company issued the following shares of common stock as part of its stock-based compensation plans and employees stock purchase plan: 4,972,028 shares in 2020, 4,569,917 shares in 2019, and 3,998,245 shares in 2018. The company issued 2,934,907 treasury shares in 2020, 2,041,347 treasury shares in 2019 and 424,589 treasury shares in 2018, as a result of restricted stock unit releases and exercises of stock options by employees of certain acquired businesses and by non-U.S. employees. Also, as part of the company's stock-based compensation plans, 2,363,966 common shares at a cost of \$302 million, 2,000,704 common shares at a cost of \$272 million, and 1,173,416 common shares at a cost of \$171 million in 2020, 2019 and 2018, respectively, were remitted by employees to the company in order to satisfy minimum statutory tax withholding requirements. These amounts are included in the treasury stock balance in the Consolidated Balance Sheet and the Consolidated Statement of Equity.

Reclassifications and Taxes Related to Items of Other Comprehensive Income

(\$ in millions)

	Before Tax Amount	Tax (Expense)/ Benefit	Net of Tax Amount
For the year ended December 31, 2020:			
Other comprehensive income/(loss)			
Foreign currency translation adjustments	\$ (1,500)	\$ 535	\$ (965)
Net changes related to available-for-sale securities			
Unrealized gains/(losses) arising during the period	\$ (1)	\$ 0	\$ 0
Reclassification of (gains)/losses to other (income) and expense	—	—	—
Total net changes related to available-for-sale securities	\$ (1)	\$ 0	\$ 0
Unrealized gains/(losses) on cash flow hedges			
Unrealized gains/(losses) arising during the period	\$ (349)	\$ 89	\$ (261)
Reclassification of (gains)/losses to:			
Cost of services	(23)	6	(18)
Cost of sales	(2)	1	(2)
Cost of financing	27	(7)	20
SG&A expense	0	0	0
Other (income) and expense	(101)	25	(75)
Interest expense	78	(20)	58
Total unrealized gains/(losses) on cash flow hedges	\$ (370)	\$ 94	\$ (277)
Retirement-related benefit plans⁽¹⁾			
Prior service costs/(credits)	\$ (37)	\$ 7	\$ (29)
Net (losses)/gains arising during the period	(1,678)	295	(1,383)
Curtailments and settlements	52	(14)	38
Amortization of prior service (credits)/costs	13	(1)	12
Amortization of net (gains)/losses	2,314	(451)	1,863
Total retirement-related benefit plans	\$ 664	\$(163)	\$ 501
Other comprehensive income/(loss)	\$ (1,206)	\$ 466	\$ (740)

⁽¹⁾ These AOCI components are included in the computation of net periodic pension cost. Refer to note V, "Retirement-Related Benefits," for additional information.

(\$ in millions)

	Before Tax Amount	Tax (Expense)/ Benefit	Net of Tax Amount
For the year ended December 31, 2019:			
Other comprehensive income/(loss)			
Foreign currency translation adjustments	\$ (39)	\$ 29	\$ (10)
Net changes related to available-for-sale securities			
Unrealized gains/(losses) arising during the period	\$ 1	\$ 0	\$ 1
Reclassification of (gains)/losses to other (income) and expense	—	—	—
Total net changes related to available-for-sale securities	\$ 1	\$ 0	\$ 1
Unrealized gains/(losses) on cash flow hedges			
Unrealized gains/(losses) arising during the period	\$ (689)	\$ 167	\$ (522)
Reclassification of (gains)/losses to:			
Cost of services	(68)	17	(50)
Cost of sales	(51)	15	(37)
Cost of financing	89	(22)	67
SG&A expense	(53)	14	(39)
Other (income) and expense	(39)	10	(29)
Interest expense	197	(50)	148
Total unrealized gains/(losses) on cash flow hedges	\$ (614)	\$ 151	\$ (463)
Retirement-related benefit plans⁽¹⁾			
Prior service costs/(credits)	\$ (73)	\$ 10	\$ (63)
Net (losses)/gains arising during the period	(120)	52	(68)
Curtailments and settlements	41	(12)	29
Amortization of prior service (credits)/costs	(9)	5	(4)
Amortization of net (gains)/losses	1,843	(371)	1,471
Total retirement-related benefit plans	\$1,681	\$(316)	\$1,365
Other comprehensive income/(loss)	\$1,029	\$(136)	\$ 893

⁽¹⁾ These AOCI components are included in the computation of net periodic pension cost. Refer to note V, "Retirement-Related Benefits," for additional information.

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(\$ in millions)	Before Tax Amount	Tax (Expense)/ Benefit	Net of Tax Amount
For the year ended December 31, 2018:			
Other comprehensive income/(loss)			
Foreign currency translation adjustments	\$ (730)	\$(172)	\$ (902)
Net changes related to available-for-sale securities			
Unrealized gains/(losses) arising during the period	\$ (2)	\$ 1	\$ (1)
Reclassification of (gains)/losses to other (income) and expense	—	—	—
Total net changes related to available-for-sale securities	\$ (2)	\$ 1	\$ (1)
Unrealized gains/(losses) on cash flow hedges			
Unrealized gains/(losses) arising during the period	\$ (136)	\$ 43	\$ (93)
Reclassification of (gains)/losses to:			
Cost of services	(30)	8	(22)
Cost of sales	(8)	3	(5)
Cost of financing	75	(19)	56
SG&A expense	0	0	0
Other (income) and expense	341	(86)	255
Interest expense	71	(18)	53
Total unrealized gains/(losses) on cash flow hedges	\$ 313	\$ (69)	\$ 244
Retirement-related benefit plans⁽¹⁾			
Prior service costs/(credits)	\$ (182)	\$ 31	\$ (151)
Net (losses)/gains arising during the period	(2,517)	576	(1,941)
Curtailments and settlements	11	(2)	9
Amortization of prior service (credits)/costs	(73)	5	(68)
Amortization of net (gains)/losses	2,966	(632)	2,334
Total retirement-related benefit plans	\$ 204	\$ (21)	\$ 184
Other comprehensive income/(loss)	\$ (215)	\$ (262)	\$ (476)

⁽¹⁾ These AOCI components are included in the computation of net periodic pension cost. Refer to note V, "Retirement-Related Benefits," for additional information.

Accumulated Other Comprehensive Income/(Loss) (net of tax)

(\$ in millions)	Net Unrealized Gains/(Losses) on Cash Flow Hedges	Foreign Currency Translation Adjustments *	Net Change Retirement- Related Benefit Plans	Net Unrealized Gains/(Losses) on Available- For-Sale Securities	Accumulated Other Comprehensive Income/(Loss)
December 31, 2017	\$ 35	\$(2,834)	\$(23,796)	\$ 3	\$(26,592)
Cumulative effect of a change in accounting principle**	5	46	(2,471)	(2)	(2,422)
Other comprehensive income before reclassifications	(93)	(902)	(2,092)	(1)	(3,089)
Amount reclassified from accumulated other comprehensive income	337	—	2,276	—	2,612
Total change for the period	244	(902)	184	(1)	(476)
December 31, 2018	284	(3,690)	(26,083)	0	(29,490)
Other comprehensive income before reclassifications	(522)	(10)	(131)	1	(663)
Amount reclassified from accumulated other comprehensive income	59	—	1,496	—	1,556
Total change for the period	(463)	(10)	1,365	1	893
December 31, 2019	(179)	(3,700)	(24,718)	0	(28,597)
Other comprehensive income before reclassifications	(261)	(965)	(1,412)	0	(2,638)
Amount reclassified from accumulated other comprehensive income	(16)	—	1,914	—	1,898
Total change for the period	\$(277)	\$ (965)	\$ 501	\$ 0	\$ (740)
December 31, 2020	\$(456)	\$ (4,665)	\$ (24,216)	\$ 0	\$ (29,337)

* Foreign currency translation adjustments are presented gross except for any associated hedges which are presented net of tax.

** Reflects the adoption of FASB guidance. Refer to note B, "Accounting Changes."

NOTE T. DERIVATIVE FINANCIAL INSTRUMENTS

The company operates in multiple functional currencies and is a significant lender and borrower in the global markets. In the normal course of business, the company is exposed to the impact of interest rate changes and foreign currency fluctuations, and to a lesser extent equity and commodity price changes and client credit risk. The company limits these risks by following established risk management policies and procedures, including the use of derivatives, and, where cost effective, financing with debt in the currencies in which assets are denominated. For interest rate exposures, derivatives are used to better align rate movements between the interest rates associated with the company's lease and other financial assets and the interest rates associated with its financing debt. Derivatives are also used to manage the related cost of debt. For foreign currency exposures, derivatives are used to better manage the cash flow volatility arising from foreign exchange rate fluctuations.

In the Consolidated Balance Sheet, the company does not offset derivative assets against liabilities in master netting arrangements nor does it offset receivables or payables recognized upon payment or receipt of cash collateral against the fair values of the related derivative instruments. No amount was recognized for the right to reclaim or the obligation to return cash collateral at December 31, 2020 and \$26 million was recognized in other accounts receivable for the right to reclaim cash collateral at December 31, 2019. The company restricts the use of cash collateral received to rehypothecation, and therefore reports it in restricted cash in the Consolidated Balance Sheet. No amount was rehypothecated at December 31, 2020 and 2019. Additionally, if derivative exposures covered by a qualifying master netting agreement had been netted in the Consolidated Balance Sheet at December 31, 2020 and 2019, the total derivative asset and liability positions each would have been reduced by \$213 million and \$194 million, respectively.

In its hedging programs, the company may use forward contracts, futures contracts, interest-rate swaps, cross-currency swaps, equity swaps, and options depending upon the underlying exposure. The company is not a party to leveraged derivative instruments.

A brief description of the major hedging programs, categorized by underlying risk, follows.

Interest Rate Risk

Fixed and Variable Rate Borrowings

The company issues debt in the global capital markets to fund its operations and financing business. Access to cost-effective financing can result in interest rate mismatches with the underlying assets. To manage these mismatches and to reduce overall interest cost, the company may use interest-rate swaps to convert specific fixed-rate debt issuances into variable-rate debt (i.e., fair value hedges) and to convert specific variable-rate debt issuances into fixed-rate debt (i.e., cash flow hedges). At December 31, 2020 and 2019, the total notional amount of the company's interest-rate swaps was \$3.0 billion at both periods. The weighted-average remaining maturity of these instruments at December 31, 2020 and 2019 was approximately 1.2 years and 2.2 years, respectively. These interest-rate contracts were accounted for as fair value hedges. The company did not have any cash flow hedges relating to this program outstanding at December 31, 2020 and 2019.

Forecasted Debt Issuance

The company is exposed to interest rate volatility on future debt issuances. To manage this risk, the company may use instruments such as forward starting interest-rate swaps to lock in the rate on the interest payments related to the forecasted debt issuances. In the second quarter of 2019, the company issued an aggregate of \$20 billion of indebtedness (refer to note P, "Borrowings," for additional information). Following the receipt of the net proceeds from this debt offering, the company terminated \$5.5 billion of forward starting interest-rate swaps. There were no instruments outstanding at December 31, 2020 and 2019.

In connection with cash flow hedges of forecasted interest payments related to the company's borrowings, the company recorded net losses of \$174 million and net losses of \$192 million (before taxes) at December 31, 2020 and 2019, respectively, in AOCI. The company estimates that \$18 million (before taxes) of the deferred net losses on derivatives in AOCI at December 31, 2020 will be reclassified to net income within the next 12 months, providing an offsetting economic impact against the underlying interest payments.

Foreign Exchange Risk

Long-Term Investments in Foreign Subsidiaries (Net Investment)

A large portion of the company's foreign currency denominated debt portfolio is designated as a hedge of net investment in foreign subsidiaries to reduce the volatility in stockholders' equity caused by changes in foreign currency exchange rates in the functional currency of major foreign subsidiaries with respect to the U.S. dollar. At December 31, 2020 and 2019, the carrying value of debt designated as hedging instruments was \$16.4 billion and \$7.3 billion, respectively. The \$9.0 billion increase is part of the company's risk management strategy and is primarily the result of the designation of new issuances in the first quarter of 2020 and previously hedged Euro-denominated debt. The company also uses cross-currency swaps and foreign exchange forward contracts for this risk management purpose. At December 31, 2020 and 2019, the total notional amount of derivative instruments designated as net investment hedges was \$7.2 billion and \$7.9 billion, respectively. At December 31, 2020 and 2019, the weighted-average remaining maturity of these instruments was approximately 0.3 years and 0.1 years, respectively.

Anticipated Royalties and Cost Transactions

The company's operations generate significant nonfunctional currency, third-party vendor payments and intercompany payments for royalties and goods and services among the company's non-U.S. subsidiaries and with the company. In anticipation of these foreign currency cash flows and in view of the volatility of the currency markets, the company selectively employs foreign exchange forward contracts to manage its currency risk. These forward contracts are accounted for as cash flow hedges. The maximum remaining length of time over which the company has hedged its exposure to the variability in future cash flows is approximately four years. At December 31, 2020 and 2019, the total notional amount of forward contracts designated as cash flow hedges of forecasted royalty and cost transactions was \$8.0 billion and \$9.7 billion, respectively. At December 31, 2020 and 2019, the weighted-average remaining maturity of these instruments was approximately 0.7 years and 0.8 years, respectively.

At December 31, 2020 and 2019, in connection with cash flow hedges of anticipated royalties and cost transactions, the company recorded net losses of \$192 million and net gains of \$145 million (before taxes), respectively, in AOCI. The company estimates that \$285 million (before taxes) of deferred net losses on derivatives in AOCI at December 31, 2020 will be reclassified to net income within the next 12 months, providing an offsetting economic impact against the underlying anticipated transactions.

Foreign Currency Denominated Borrowings

The company is exposed to exchange rate volatility on foreign currency denominated debt. To manage this risk, the company employs cross-currency swaps to convert fixed-rate foreign currency denominated debt to fixed-rate debt denominated in the functional currency of the borrowing entity. These swaps are accounted for as cash flow hedges. At December 31, 2020, the maximum length of time remaining over which the company has hedged its exposure was approximately seven years. At December 31, 2020 and 2019, the total notional amount of cross-currency swaps designated as cash flow hedges of foreign currency denominated debt was \$1.5 billion and \$8.2 billion, respectively. The primary driver of the \$6.7 billion decrease in cross-currency swaps is part of the company's risk management strategy to use the previously hedged foreign currency denominated debt as a hedge of net investment in foreign subsidiaries.

At December 31, 2020 and 2019, in connection with cash flow hedges of foreign currency denominated borrowings, the company recorded net losses of \$236 million and net losses of \$185 million (before taxes), respectively, in AOCI. The company estimates that \$23 million (before taxes) of deferred net losses on derivatives in AOCI at December 31, 2020 will be reclassified to net income within the next 12 months, providing an offsetting economic impact against the underlying exposure.

Subsidiary Cash and Foreign Currency Asset/Liability Management

The company uses its Global Treasury Centers to manage the cash of its subsidiaries. These centers principally use currency swaps to convert cash flows in a cost-effective manner. In addition, the company uses foreign exchange forward contracts to economically hedge, on a net basis, the foreign currency exposure of a portion of the company's nonfunctional currency assets and liabilities. The terms of these forward and swap contracts are generally less than one year. The changes in the fair values of these contracts and of the underlying hedged exposures are generally offsetting and are recorded in other (income) and expense in the Consolidated Income Statement. At December 31, 2020 and 2019, the total notional amount of derivative instruments in economic hedges of foreign currency exposure was \$6.8 billion and \$7.1 billion, respectively.

Equity Risk Management

The company is exposed to market price changes in certain broad market indices and in the company's own stock primarily related to certain obligations to employees. Changes in the overall value of these employee compensation obligations are recorded in SG&A expense in the Consolidated Income Statement. Although not designated as accounting hedges, the company utilizes derivatives, including equity swaps and futures, to economically hedge the exposures related to its employee compensation obligations. The derivatives are linked to the total return on certain broad market indices or the total return on the company's common stock, and are recorded at fair value with gains or losses also reported in SG&A expense in the Consolidated Income Statement. At December 31, 2020 and 2019, the total notional amount of derivative instruments in economic hedges of these compensation obligations was \$1.3 billion at both periods.

Cumulative Basis Adjustments for Fair Value Hedges

At December 31, 2020 and 2019, the following amounts were recorded in the Consolidated Balance Sheet related to cumulative basis adjustments for fair value hedges:

(\$ in millions)	2020	2019
At December 31:		
Short-term debt:		
Carrying amount of the hedged item	\$ (1,302)	\$ —
Cumulative hedging adjustments included in the carrying amount—assets/(liabilities)	(2)	—
Long-term debt:		
Carrying amount of the hedged item	(2,097)	(3,411)
Cumulative hedging adjustments included in the carrying amount—assets/(liabilities)*	(424)	(440)

* Includes (\$353) million and (\$404) million of hedging adjustments on discontinued hedging relationships at December 31, 2020 and 2019, respectively.

The Effect of Derivative Instruments in the Consolidated Income Statement

The total amounts of income and expense line items presented in the Consolidated Income Statement in which the effects of fair value hedges, cash flow hedges, net investment hedges and derivatives not designated as hedging instruments are recorded and the total effect of hedge activity on these income and expense line items are as follows:

(\$ in millions)

For the year ended December 31:	Total			Gains/(Losses) of Total Hedge Activity		
	2020	2019	2018	2020	2019	2018
Cost of services	\$30,404	\$32,491	\$33,687	\$ 23	\$ 68	\$ 30
Cost of sales	6,934	7,263	7,835	2	51	8
Cost of financing	708	904	1,132	12	(42)	(6)
SG&A expense	23,082	20,604	19,366	141	267	(116)
Other (income) and expense	861	(968)	1,152	101	(15)	(434)
Interest expense	1,288	1,344	723	35	(93)	(6)

(\$ in millions)

For the year ended December 31:	Line Item	Gain/(Loss) Recognized in Consolidated Income Statement						
		Consolidated Income Statement			Recognized on Derivatives		Attributable to Risk Being Hedged ⁽²⁾	
		2020	2019	2018	2020	2019	2018	
Derivative instruments in fair value hedges ⁽¹⁾								
Interest rate contracts								
Cost of financing		\$ 20	\$ 44	\$ (61)	\$ 4	\$ (32)	\$ 97	
Interest expense		58	98	(58)	11	(71)	92	
Derivative instruments not designated as hedging instruments								
Other (income) and expense								
Foreign exchange contracts		1	(53)	(93)	N/A	N/A	N/A	
Equity contracts		142	214	(116)	N/A	N/A	N/A	
Total		\$220	\$302	\$(327)	\$ 14	\$(103)	\$189	

(\$ in millions)

For the year ended December 31:	Gain/(Loss) Recognized in Consolidated Income Statement and Other Comprehensive Income											
	Recognized in OCI			Consolidated Income Statement			Reclassified from AOCI			Amounts Excluded from Effectiveness Testing ⁽³⁾		
	2020	2019	2018	Line Item	2020	2019	2018	2020	2019	2018	2020	2019
Derivative instruments in cash flow hedges												
Interest rate contracts												
Cost of financing	\$ —	\$(168)	\$ (35)	Cost of financing	\$ (5)	\$ (3)	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —
Interest expense				Interest expense	(13)	(8)	—	—	—	—	—	—
Foreign exchange contracts	(349)	(521)	(101)	Cost of services	23	68	30	—	—	—	—	—
				Cost of sales	2	51	8	—	—	—	—	—
				Cost of financing	(23)	(86)	(75)	—	—	—	—	—
				SG&A expense	0	53	0	—	—	—	—	—
				Other (income) and expense	101	39	(341)	—	—	—	—	—
				Interest expense	(65)	(190)	(71)	—	—	—	—	—
Instruments in net investment hedges ⁽⁴⁾												
Foreign exchange contracts												
Cost of financing	(2,127)	(95)	686	Cost of financing	—	—	—	16	35	33		
Interest expense				Interest expense	—	—	—	45	77	31		
Total	\$ (2,477)	\$(784)	\$ 549		\$ 21	\$ (75)	\$(449)	\$ 60	\$ 112	\$ 64		

⁽¹⁾ The amount includes changes in clean fair values of the derivative instruments in fair value hedging relationships and the periodic accrual for coupon payments required under these derivative contracts.

⁽²⁾ The amount includes basis adjustments to the carrying value of the hedged item recorded during the period and amortization of basis adjustments recorded on de-designated hedging relationships during the period.

⁽³⁾ The company's policy is to recognize all fair value changes in amounts excluded from effectiveness testing in net income each period.

⁽⁴⁾ Instruments in net investment hedges include derivative and non-derivative instruments with the amounts recognized in OCI providing an offset to the translation of foreign subsidiaries.

N/A—Not applicable

For the years ending December 31, 2020, 2019 and 2018, there were no material gains or losses excluded from the assessment of hedge effectiveness (for fair value or cash flow hedges), or associated with an underlying exposure that did not or was not expected to occur (for cash flow hedges); nor are there any anticipated in the normal course of business.

NOTE U. STOCK-BASED COMPENSATION

The following table presents total stock-based compensation cost included in income from continuing operations.

(\$ in millions)	2020	2019	2018
For the year ended December 31:			
Cost	\$ 153	\$ 100	\$ 82
SG&A expense	586	453	361
RD&E expense	198	126	67
Pre-tax stock-based compensation cost	937	679	510
Income tax benefits	(213)	(155)	(116)
Net stock-based compensation cost	\$ 724	\$ 524	\$ 393

Red Hat was acquired on July 9, 2019. The 2020 results include a full year of compensation expense for issuances and conversions of stock-based compensation for Red Hat compared to six months in 2019.

The company's total unrecognized compensation cost related to non-vested awards at December 31, 2020 was \$1.4 billion and is expected to be recognized over a weighted-average period of approximately 2.2 years.

Capitalized stock-based compensation cost was not material at December 31, 2020, 2019 and 2018.

Incentive Awards

Stock-based incentive awards are provided to employees under the terms of the company's long-term performance plans (the Plans). The Plans are administered by the Executive Compensation and Management Resources Committee of the Board of Directors. Awards available under the Plans principally include restricted stock units, performance share units, stock options or any combination thereof.

There were 293 million shares originally authorized to be awarded under the company's existing Plans and 66 million shares granted under previous plans that, if and when those awards were cancelled, could be reissued under the existing Plans. At December 31, 2020, 103 million unused shares were available to be granted.

Stock Awards

Stock awards are made in the form of Restricted Stock Units (RSUs), including Retention Restricted Stock Units (RRSUs), or Performance Share Units (PSUs).

The following table summarizes RSU and PSU activity under the Plans during the years ended December 31, 2020, 2019 and 2018.

	RSUs		PSUs	
	Weighted-Average Grant Price	Number of Units	Weighted-Average Grant Price	Number of Units
Balance at January 1, 2018	\$141	8,555,263	\$144	2,649,313
Awards granted	121	4,806,790	130	909,140
Awards released	148	(2,579,962)	152	(666,244)
Awards canceled/forfeited/performance adjusted	139	(979,387)	147	(472,514)*
Balance at December 31, 2018	\$130	9,802,704	\$136	2,419,695 **
Awards granted	119	5,650,861	117	1,395,534
Awards released	136	(3,145,016)	140	(846,672)
Awards canceled/forfeited/performance adjusted	128	(981,921)	131	(112,107)*
Balance at December 31, 2019	\$123	11,326,628	\$126	2,856,450 **
Awards granted	115	10,651,955	117	1,582,666
Awards released	126	(3,781,240)	137	(630,974)
Awards canceled/forfeited/performance adjusted	121	(1,300,639)	125	(256,642)*
Balance at December 31, 2020	\$117	16,896,704	\$120	3,551,500 **

* Includes adjustments of (70,089), (8,544) and (328,120) PSUs for 2020, 2019 and 2018, respectively, because final performance metrics were above or below specified targets.

** Represents the number of shares expected to be issued based on achievement of grant date performance targets. The actual number of shares issued will depend on final performance against specified targets over the vesting period.

The total fair value of RSUs and PSUs granted and vested during the years ended December 31, 2020, 2019 and 2018 were as follows:

(\$ in millions)	2020	2019	2018
For the year ended December 31:			
RSUs			
Granted	\$1,220	\$674	\$583
Vested	478	428	381
PSUs			
Granted	\$ 186	\$164	\$118
Vested	86	118	101

In connection with vesting and release of RSUs and PSUs, the tax benefits realized by the company for the years ended December 31, 2020, 2019 and 2018 were \$139 million, \$131 million and \$117 million, respectively.

Stock Options

In 2016, the company made one grant of 1.5 million premium-priced stock options. As of December 31, 2020, these options were vested with a weighted-average exercise price of \$140 per share and had a remaining weighted-average contractual life of approximately 5.1 years. The options are exercisable within a range of \$129 to \$154. These vested options had no intrinsic value as of December 31, 2020.

The company has not granted options since 2016. No material stock options were exercised, forfeited or canceled during the years ended December 31, 2020, 2019 and 2018.

The company settles employee stock option exercises primarily with newly issued common shares and, occasionally, with treasury shares. Total treasury shares held at December 31, 2020 and 2019 were approximately 1,350 million and 1,351 million shares, respectively.

Acquisitions

In connection with the acquisition of Red Hat in July 2019, the company issued and assumed 6.4 million stock awards with a fair value of \$845 million. A share conversion ratio of 1.35 was applied to convert Red Hat's outstanding equity awards for Red Hat's common stock into IBM stock awards. At December 31, 2020, there were 2.1 million of these stock awards outstanding with a weighted-average grant price of \$140 per share.

In connection with various other acquisition transactions, there was an additional 0.1 million stock options outstanding at December 31, 2020, as a result of the company's conversion of stock-based awards previously granted by acquired entities. The weighted-average exercise price of these awards was \$44 per share.

IBM Employees Stock Purchase Plan

The company maintains a non-compensatory Employees Stock Purchase Plan (ESPP). The ESPP enables eligible participants to purchase shares of IBM common stock at a 5 percent discount off the average market price on the day of purchase through payroll deductions of up to 10 percent of eligible compensation. Eligible compensation includes any compensation received by the employee during the year. The ESPP provides for semi-annual offering periods during which shares may be purchased and continues as long as shares remain available under the ESPP, unless terminated earlier at the discretion of the Board of Directors. Individual ESPP participants are restricted from purchasing more than \$25,000 of common stock in one calendar year or 1,000 shares in an offering period.

Employees purchased approximately one million shares under the ESPP during each year ended December 31, 2020, 2019 and 2018. Cash dividends declared and paid by the company on its common stock also include cash dividends on the company stock purchased through the ESPP. Dividends are paid on full and fractional shares and can be reinvested. The company stock purchased through the ESPP is considered outstanding and is included in the weighted-average outstanding shares for purposes of computing basic and diluted earnings per share.

Approximately 17.8 million shares were available for purchase under the ESPP at December 31, 2020.

NOTE V. RETIREMENT-RELATED BENEFITS

Description of Plans

IBM sponsors the following retirement-related plans/benefits:

Plan		Eligibility	Funding	Benefit Calculation	Other
U.S. Defined Benefit (DB) Pension Plans	Qualified Personal Pension Plan (PPP)	U.S. regular, full-time and part-time employees hired prior to January 1, 2005	Company contributes to irrevocable trust fund, held for sole benefit of participants and beneficiaries	Vary based on the participant: Five-year, final pay formula based on salary, years of service, mortality and other participant-specific factors	Benefit accruals ceased December 31, 2007
	Excess Personal Pension Plan (PPP)		Unfunded, provides benefits in excess of IRS limitations for qualified plans	Cash balance formula based on percentage of employees' annual salary, as well as an interest crediting rate	
	Supplemental Executive Retention Plan (Retention Plan)	Eligible U.S. executives	Unfunded	Based on average earnings, years of service and age at termination of employment	
U.S. Defined Contribution (DC) Plans ⁽¹⁾	401(k) Plus	U.S. regular, full-time and part-time employees	All contributions are made in cash and invested in accordance with participants' investment elections	Dollar-for-dollar match, generally 5 or 6 percent of eligible compensation and automatic matching of 1, 2 or 4 percent of eligible compensation, depending on date of hire	Employees generally receive contributions after one year of service
	Excess 401(k) Plus	U.S. employees whose eligible compensation is expected to exceed IRS compensation limit for qualified plans	Unfunded, non-qualified amounts deferred are record-keeping (notional) accounts and are not held in trust for the participants, but may be invested in accordance with participants' investment elections (under the 401(k) Plus Plan options)	Company match and automatic contributions (at the same rate under 401(k) Plus Plan) on eligible compensation deferred and on compensation earned in excess of the IRC pay limit. The percentage varies depending on eligibility and years of service	Employees generally receive contributions after one year of service. Amounts deferred into the Plan, including company contributions, are recorded as liabilities
U.S. Nonpension Postretirement Benefit Plan	Nonpension Postretirement Plan	Medical and dental benefits for eligible U.S. retirees and eligible dependents, as well as life insurance for eligible U.S. retirees	Company contributes to irrevocable trust fund, held for the sole benefit of participants and beneficiaries	Varies based on plan design formulas and eligibility requirements	Since January 1, 2004, new hires are not eligible for these benefits
Non-U.S. Plans	DB or DC	Eligible regular employees in certain non-U.S. subsidiaries or branches	Company deposits funds under various fiduciary-type arrangements, purchases annuities under group contracts or provides reserves for these plans	Based either on years of service and the employee's compensation (generally during a fixed number of years immediately before retirement) or on annual credits	In certain countries, benefit accruals have ceased and/or have been closed to new hires as of various dates
	Nonpension Postretirement Plan	Medical and dental benefits for eligible non-U.S. retirees and eligible dependents, as well as life insurance for certain eligible non-U.S. retirees	Primarily unfunded except for a few select countries where the company contributes to irrevocable trust funds held for the sole benefit of participants and beneficiaries	Varies based on plan design formulas and eligibility requirements by country	Most non-U.S. retirees are covered by local government sponsored and administered programs

⁽¹⁾ Matching and automatic contributions are made once at the end of the year for employees that are employed as of December 15 of the plan year. Contributions may be made for certain types of separations that occur prior to December 15.

Plan Financial Information

Summary of Financial Information

The following table presents a summary of the total retirement-related benefits net periodic (income)/cost recorded in the Consolidated Income Statement.

(\$ in millions)

For the year ended December 31:	U.S. Plans			Non-U.S. Plans			Total		
	2020	2019	2018	2020	2019	2018	2020	2019	2018
Defined benefit pension plans	\$167	\$(153)	\$ 542	\$1,178	\$ 955	\$ 1,284	\$1,345	\$ 803	\$ 1,827
Retention Plan	11	11	17	—	—	—	11	11	17
Total defined benefit pension plans (income)/cost	\$178	\$(142)	\$ 559	\$1,178	\$ 955	\$ 1,284	\$1,355	\$ 813	\$ 1,843
IBM 401(k) Plus Plan and non-U.S. plans	\$585	\$ 588	\$ 588	\$ 447	\$ 427	\$ 412	\$1,032	\$1,015	\$1,000
Excess 401(k)	27	26	24	—	—	—	27	26	24
Total defined contribution plans cost	\$612	\$ 613	\$ 612	\$ 447	\$ 427	\$ 412	\$1,058	\$1,040	\$1,024
Nonpension postretirement benefit plans cost	\$145	\$ 154	\$ 147	\$ 58	\$ 65	\$ 51	\$ 203	\$ 219	\$ 198
Total retirement-related benefits net periodic cost	\$934	\$ 624	\$ 1,319	\$ 1,683	\$1,448	\$ 1,747	\$2,617	\$2,072	\$3,066

The following table presents a summary of the total PBO for defined benefit pension plans, APBO for nonpension postretirement benefit plans, fair value of plan assets and the associated funded status recorded in the Consolidated Balance Sheet.

(\$ in millions)

At December 31:	Benefit Obligations		Fair Value of Plan Assets		Funded Status*	
	2020	2019	2020	2019	2020	2019
U.S. Plans						
Overfunded plans						
Qualified PPP	\$50,375	\$ 48,471	\$54,386	\$51,784	\$ 4,011	\$ 3,313
Underfunded plans						
Excess PPP	\$ 1,556	\$ 1,473	\$ —	\$ —	\$ (1,556)	\$ (1,473)
Retention Plan	306	288	—	—	(306)	(288)
Nonpension postretirement benefit plan	3,791	3,857	15	3	(3,776)	(3,854)
Total underfunded U.S. plans	\$ 5,653	\$ 5,618	\$ 15	\$ 3	\$ (5,638)	\$ (5,615)
Non-U.S. Plans						
Overfunded plans						
Qualified defined benefit pension plans**	\$20,649	\$ 18,371	\$24,246	\$21,921	\$ 3,597	\$ 3,550
Nonpension postretirement benefit plans	21	19	22	21	1	2
Total overfunded non-U.S. plans	\$20,670	\$ 18,390	\$24,269	\$21,942	\$ 3,599	\$ 3,552
Underfunded plans						
Qualified defined benefit pension plans**	\$25,160	\$ 23,222	\$19,586	\$18,398	\$ (5,574)	\$ (4,824)
Nonqualified defined benefit pension plans	7,180	6,731	—	—	(7,180)	(6,731)
Nonpension postretirement benefit plans	755	828	31	44	(723)	(785)
Total underfunded non-U.S. plans	\$33,095	\$ 30,782	\$19,617	\$18,442	\$ (13,478)	\$ (12,340)
Total overfunded plans	\$71,044	\$ 66,861	\$78,654	\$73,726	\$ 7,610	\$ 6,865
Total underfunded plans	\$38,747	\$ 36,399	\$19,632	\$18,445	\$ (19,116)	\$ (17,955)

* Funded status is recognized in the Consolidated Balance Statement as follows: Asset amounts as prepaid pension assets; (Liability) amounts as compensation and benefits (current liability) and retirement and nonpension postretirement benefit obligations (noncurrent liability).

** Non-U.S. qualified plans represent plans funded outside of the U.S. Non-U.S. nonqualified plans are unfunded.

At December 31, 2020, the company's qualified defined benefit pension plans worldwide were 102 percent funded compared to the benefit obligations, with the U.S. Qualified PPP 108 percent funded. Overall, including nonqualified plans, the company's defined benefit pension plans worldwide were 93 percent funded.

Defined Benefit Pension and Nonpension Postretirement Benefit Plan Financial Information

The following tables through page 132 represent financial information for the company's retirement-related benefit plans, excluding defined contribution plans. The defined benefit pension plans under U.S. Plans consist of the Qualified PPP, the Excess PPP and the Retention Plan. The defined benefit pension plans and the nonpension postretirement benefit plans under non-U.S. Plans consist of all plans sponsored by the company's subsidiaries. The nonpension postretirement benefit plan under U.S. Plan consists of only the U.S. Nonpension Postretirement Benefit Plan.

The following tables present the components of net periodic (income)/cost of the retirement-related benefit plans recognized in the Consolidated Income Statement, excluding defined contribution plans.

(\$ in millions)

For the year ended December 31:	Defined Benefit Pension Plans					
	U.S. Plans			Non-U.S. Plans		
	2020	2019	2018	2020	2019	2018
Service cost	\$ —	\$ —	\$ —	\$ 392	\$ 370	\$ 413
Interest cost ⁽¹⁾	1,501	1,882	1,719	563	847	830
Expected return on plan assets ⁽¹⁾	(2,169)	(2,599)	(2,701)	(1,275)	(1,588)	(1,342)
Amortization of transition assets ⁽¹⁾	—	—	—	—	0	0
Amortization of prior service costs/(credits) ⁽¹⁾	16	16	16	(8)	(23)	(83)
Recognized actuarial losses ⁽¹⁾	829	559	1,525	1,406	1,249	1,401
Curtailments and settlements ⁽¹⁾	—	—	—	52	41	11
Multi-employer plans	—	—	—	29	32	38
Other costs/(credits)	—	—	—	18	28	16
Total net periodic (income)/cost	\$ 178	\$ (142)	\$ 559	\$ 1,178	\$ 955	\$ 1,284

(\$ in millions)

For the year ended December 31:	Nonpension Postretirement Benefit Plans					
	U.S. Plan			Non-U.S. Plans		
	2020	2019	2018	2020	2019	2018
Service cost	\$ 9	\$ 10	\$ 13	\$ 5	\$ 5	\$ 5
Interest cost ⁽¹⁾	103	145	132	36	55	45
Expected return on plan assets ⁽¹⁾	—	—	0	(4)	(5)	(6)
Amortization of transition assets ⁽¹⁾	—	—	—	0	—	0
Amortization of prior service costs/(credits) ⁽¹⁾	4	(2)	(7)	0	0	0
Recognized actuarial losses ⁽¹⁾	29	1	10	21	10	6
Curtailments and settlements ⁽¹⁾	—	—	—	0	0	0
Other costs/(credits)	—	—	—	0	—	—
Total net periodic cost	\$145	\$154	\$147	\$58	\$65	\$51

⁽¹⁾ These components of net periodic pension costs are included in other (income) and expense in the Consolidated Income Statement.

For the U.S. Qualified PPP, beginning in 2019, substantially all participants are considered inactive. The amortization period of unrecognized actuarial losses was changed to the average remaining life expectancy of inactive plan participants, which was 18 years as of December 31, 2018. Beginning in 2019, there was a reduction to amortization expense of approximately \$900 million annually. There was no impact to the funded status, retiree benefit payments or funding requirements.

The following table presents the changes in benefit obligations and plan assets of the company's retirement-related benefit plans, excluding DC plans.

(\$ in millions)

	Defined Benefit Pension Plans				Nonpension Postretirement Benefit Plans			
	U.S. Plans		Non-U.S. Plans		U.S. Plan		Non-U.S. Plans	
	2020	2019	2020	2019	2020	2019	2020	2019
Change in benefit obligation								
Benefit obligation at January 1	\$50,232	\$47,812	\$48,324	\$45,770	\$ 3,857	\$ 3,912	\$ 848	\$ 705
Service cost	—	—	392	370	9	10	5	5
Interest cost	1,501	1,882	563	847	103	145	36	55
Plan participants' contributions	—	—	23	23	56	57	—	—
Acquisitions/divestitures, net	1	—	50	(32)	—	—	0	0
Actuarial losses/(gains)	4,071	4,040	2,766	3,467	135	148	(3)	141
Benefits paid from trust	(3,445)	(3,378)	(1,946)	(1,902)	(369)	(389)	(4)	(6)
Direct benefit payments	(123)	(124)	(420)	(403)	0	(6)	(24)	(27)
Foreign exchange impact	—	—	3,283	134	—	—	(82)	(1)
Amendments/curtailments/ settlements/other	0	—	(47)	50	—	(21)	(1)	(23)
Benefit obligation at December 31	\$52,237	\$50,232	\$52,989	\$48,324	\$ 3,791	\$ 3,857	\$ 775	\$ 848
Change in plan assets								
Fair value of plan assets at January 1	\$51,784	\$48,213	\$40,319	\$36,758	\$ 3	\$ 29	\$ 65	\$ 65
Actual return on plan assets	6,046	6,949	2,571	4,896	0	1	4	7
Employer contributions	—	—	182	243	325	304	—	—
Acquisitions/divestitures, net	1	—	97	(25)	—	—	—	—
Plan participants' contributions	—	—	23	23	56	57	—	—
Benefits paid from trust	(3,445)	(3,378)	(1,946)	(1,902)	(369)	(389)	(4)	(6)
Foreign exchange impact	—	—	2,599	333	—	—	(10)	(1)
Amendments/curtailments/ settlements/other	—	—	(13)	(7)	0	—	0	0
Fair value of plan assets at December 31	\$54,386	\$51,784	\$43,832	\$40,319	\$ 15	\$ 3	\$ 53	\$ 65
Funded status at December 31	\$ 2,149	\$ 1,551	\$ (9,157)	\$ (8,005)	\$ (3,776)	\$ (3,854)	\$ (722)	\$ (783)
Accumulated benefit obligation*	\$52,237	\$50,232	\$52,513	\$47,645	N/A	N/A	N/A	N/A

* Represents the benefit obligation assuming no future participant compensation increases.

N/A—Not applicable

The following table presents the net funded status recognized in the Consolidated Balance Sheet.

(\$ in millions)

At December 31:	Defined Benefit Pension Plans				Nonpension Postretirement Benefit Plans			
	U.S. Plans		Non-U.S. Plans		U.S. Plan		Non-U.S. Plans	
	2020	2019	2020	2019	2020	2019	2020	2019
Prepaid pension assets	\$ 4,011	\$ 3,313	\$ 3,597	\$ 3,550	\$ 0	\$ 0	\$ 1	\$ 2
Current liabilities—compensation and benefits	(122)	(120)	(366)	(313)	(346)	(346)	(34)	(33)
Noncurrent liabilities—retirement and nonpension postretirement benefit obligations	(1,740)	(1,641)	(12,388)	(11,242)	(3,430)	(3,507)	(690)	(752)
Funded status—net	\$ 2,149	\$ 1,551	\$ (9,157)	\$ (8,005)	\$ (3,776)	\$ (3,854)	\$ (722)	\$ (783)

The following table presents the pre-tax net loss, prior service costs/(credits) and transition (assets)/liabilities recognized in OCI and the changes in the pre-tax net loss, prior service costs/(credits) and transition (assets)/liabilities recognized in AOCI for the retirement-related benefit plans.

(\$ in millions)	Defined Benefit Pension Plans				Nonpension Postretirement Benefit Plans			
	U.S. Plans		Non-U.S. Plans		U.S. Plan		Non-U.S. Plans	
	2020	2019	2020	2019	2020	2019	2020	2019
Net loss at January 1	\$16,608	\$17,476	\$17,272	\$18,452	\$551	\$405	\$287	\$172
Current period loss/(gain)	194	(309)	1,338	109	135	147	(2)	125
Curtailments and settlements	—	—	(52)	(41)	—	—	0	0
Amortization of net loss included in net periodic (income)/cost	(829)	(559)	(1,406)	(1,249)	(29)	(1)	(21)	(10)
Net loss at December 31	\$15,972	\$16,608	\$17,151	\$17,272	\$656	\$551	\$264	\$287
Prior service costs/(credits) at January 1	\$ 41	\$ 57	\$ 297	\$ 172	\$ 34	\$ 52	\$ (4)	\$ 4
Current period prior service costs/(credits)	—	—	37	102	—	(21)	—	(8)
Curtailments, settlements and other	—	—	0	—	—	—	—	—
Amortization of prior service (costs)/credits included in net periodic (income)/cost	(16)	(16)	8	23	(4)	2	0	0
Prior service costs/(credits) at December 31	\$ 24	\$ 41	\$ 342	\$ 297	\$ 30	\$ 34	\$ (4)	\$ (4)
Transition (assets)/liabilities at January 1	\$ —	\$ —	\$ 0	\$ 0	\$ —	\$ —	\$ 0	\$ 0
Amortization of transition assets/(liabilities) included in net periodic (income)/cost	—	—	0	0	—	—	0	—
Transition (assets)/liabilities at December 31	\$ —	\$ —	\$ 0	\$ 0	\$ —	\$ —	\$ 0	\$ 0
Total loss recognized in accumulated other comprehensive income/(loss)*	\$15,997	\$16,648	\$17,493	\$17,569	\$687	\$585	\$260	\$283

* Refer to note S, "Equity Activity" for the total change in AOCI, and the Consolidated Statement of Comprehensive Income for the components of net periodic (income)/cost, including the related tax effects, recognized in OCI for the retirement-related benefit plans.

On October 26, 2018, the High Court in London in the case of Lloyds Pension Group Trustees Limited v Lloyds Bank PLC, confirmed that the UK defined benefit pension plans are required to equalize pension benefits to take into account unequal guaranteed minimum pension benefits accrued during the period 1990-1997. As a result of this court decision, IBM recorded an increase of \$125 million to the PBO for the IBM UK defined benefit plan, which represents approximately 1 percent of the UK PBO. This amount was recorded as prior service cost in OCI for the year ended December 31, 2018. In 2020, the High Court issued a follow-on judgment to the 2018 ruling which did not have a material impact to the PBO as of December 31, 2020.

Assumptions Used to Determine Plan Financial Information

Underlying both the measurement of benefit obligations and net periodic (income)/cost are actuarial valuations. These valuations use participant-specific information such as salary, age and years of service, as well as certain assumptions, the most significant of which include estimates of discount rates, expected return on plan assets, rate of compensation increases, interest crediting rates and mortality rates. The company evaluates these assumptions, at a minimum, annually, and makes changes as necessary.

The following tables present the assumptions used to measure the net periodic (income)/cost and the year-end benefit obligations for retirement-related benefit plans.

	Defined Benefit Pension Plans					
	U.S. Plans			Non-U.S. Plans		
	2020	2019	2018	2020	2019	2018
Weighted-average assumptions used to measure net periodic (income)/cost for the year ended December 31						
Discount rate	3.10 %	4.10 %	3.40 %	1.19 %	1.85 %	1.76 %
Expected long-term returns on plan assets	4.50 %	5.25 %	5.25 %	3.37 %	4.38 %	3.62 %
Rate of compensation increase	N/A	N/A	N/A	2.60 %	2.18 %	2.41 %
Interest crediting rate	2.70 %	3.60 %	2.30 %	0.28 %	0.30 %	0.30 %

Weighted-average assumptions used to measure benefit obligations at December 31

	2020	2019	2018	2020	2019	2018
Discount rate	2.20 %	3.10 %	4.10 %	0.86 %	1.19 %	1.85 %
Rate of compensation increase	N/A	N/A	N/A	2.50 %	2.60 %	2.18 %
Interest crediting rate	1.10 %	2.70 %	3.60 %	0.26 %	0.28 %	0.30 %

N/A—Not applicable

	Nonpension Postretirement Benefit Plans					
	U.S. Plan			Non-U.S. Plans		
	2020	2019	2018	2020	2019	2018
Weighted-average assumptions used to measure net periodic cost for the year ended December 31						
Discount rate	2.80 %	3.90 %	3.30 %	4.98 %	7.48 %	7.28 %
Expected long-term returns on plan assets	N/A	N/A	N/A	7.51 %	8.64 %	8.91 %
Interest crediting rate	2.70 %	3.60 %	2.30 %	N/A	N/A	N/A
Weighted-average assumptions used to measure benefit obligations at December 31						
Discount rate	1.80 %	2.80 %	3.90 %	4.46 %	4.98 %	7.48 %
Interest crediting rate	1.10 %	2.70 %	3.60 %	N/A	N/A	N/A

N/A—Not applicable

Item	Description of Assumptions
Discount Rate	<p>Changes in discount rate assumptions impact net periodic (income)/cost and the PBO.</p> <p>For the U.S. and certain non-U.S. countries, a portfolio of high-quality corporate bonds is used to construct a yield curve. Cash flows from the company's expected benefit obligation payments are matched to the yield curve to derive the discount rates.</p> <p>In other non-U.S. countries where the markets for high-quality long-term bonds are not as well developed, a portfolio of long-term government bonds is used as a base, and a credit spread is added to simulate corporate bond yields at these maturities in the jurisdiction of each plan. This is the benchmark for developing the respective discount rates.</p>
Expected Long-Term Returns on Plan Assets	<p>Represents the expected long-term returns on plan assets based on the calculated market-related value of plan assets and considers long-term expectations for future returns and the investment policies and strategies discussed on pages 134 to 135. These rates of return are developed and tested for reasonableness against historical returns by the company.</p> <p>The use of expected returns may result in pension income that is greater or less than the actual return of those plan assets in a given year. Over time, however, the expected long-term returns are designed to approximate the actual long-term returns, and therefore result in a pattern of income or loss recognition that more closely matches the pattern of the services provided by the employees.</p> <p>The difference between actual and expected returns is recognized as a component of net loss or gain in AOCI, which is amortized as a component of net periodic (income)/cost over the service lives or life expectancy of the plan participants, depending on the plan, provided such amounts exceed certain thresholds provided by accounting standards. The market-related value of plan assets recognizes changes in the fair value of plan assets systematically over a five-year period in the expected return on plan assets line in net periodic (income)/cost.</p> <p>The projected long-term rate of return on plan assets for 2021 is 3.75 percent for U.S. and 2.86 percent for non-U.S. DB Plans.</p>
Rate of Compensation Increases and Mortality Assumptions	<p>Compensation rate increases are determined based on the company's long-term plans for such increases. These rate increases are not applicable to the U.S. DB pension plans as benefit accruals ceased December 31, 2007.</p> <p>Mortality assumptions are based on life expectancy and death rates for different types of participants and are periodically updated based on actual experience.</p>
Interest Crediting Rate	<p>Benefits for certain participants in the PPP are calculated using a cash balance formula. An assumption underlying this formula is an interest crediting rate, which impacts both net periodic (income)/cost and the PBO. This provides the basis for projecting the expected interest rate that plan participants will earn on the benefits that they are expected to receive in the following year and is based on the average from August to October of the one-year U.S. Treasury Constant Maturity yield plus one percent.</p>
Healthcare Cost Trend Rate	<p>For nonpension postretirement benefit plans, the company reviews external data and its own historical trends for healthcare costs to determine the healthcare cost trend rates. The healthcare cost trend rate has an insignificant effect on plan costs or the benefit obligation due to the terms of the plan which limit the company's obligation to the participants.</p> <p>The company's U.S. healthcare cost trend rate assumption for 2021 is 6.25 percent. The company assumes that trend rate will decrease to 5.0 percent over the next six years.</p>

Plan Assets

Retirement-related benefit plan assets are recognized and measured at fair value. Because of the inherent uncertainty of valuations, these fair value measurements may not necessarily reflect the amounts the company could realize in current market transactions.

Investment Policies and Strategies

The investment objectives of the Qualified PPP portfolio are designed to generate returns that will enable the plan to meet its future obligations. The precise amount for which these obligations will be settled depends on future events, including the retirement dates and life expectancy of the plans' participants. The obligations are estimated using actuarial assumptions, based on the current economic environment and other pertinent factors described above. The Qualified PPP portfolio's investment strategy balances the requirement to generate returns, using potentially higher yielding assets such as equity securities, with the need to control risk in the portfolio with less volatile assets, such as fixed-income securities. Risks include, among others, inflation, volatility in equity values and changes in interest rates that could cause the plan to become underfunded, thereby increasing its dependence on contributions from the company. To mitigate any potential concentration risk, careful consideration is given to balancing the portfolio among industry sectors, companies and geographies, taking into account interest rate sensitivity, dependence on economic growth, currency and other

factors that affect investment returns. There were no significant changes to investment strategy made in 2020 and none are planned for 2021. The Qualified PPP portfolio's target allocation is 12 percent equity securities, 80 percent fixed-income securities, 3 percent real estate and 5 percent other investments.

The assets are managed by professional investment firms and investment professionals who are employees of the company. They are bound by investment mandates determined by the company's management and are measured against specific benchmarks. Among these managers, consideration is given, but not limited to, balancing security concentration, issuer concentration, investment style and reliance on particular active and passive investment strategies.

Market liquidity risks are tightly controlled, with \$3,870 million of the Qualified PPP portfolio as of December 31, 2020 invested in private market assets consisting of private equities and private real estate investments, which are less liquid than publicly traded securities. In addition, the Qualified PPP portfolio had \$1,203 million in commitments for future investments in private markets to be made over a number of years. These commitments are expected to be funded from plan assets.

Derivatives are used as an effective means to achieve investment objectives and/or as a component of the plan's risk management strategy. The primary reasons for the use of derivatives are fixed income management, including duration, interest rate management and credit exposure, cash equitization and to manage currency strategies.

Outside the U.S., the investment objectives are similar to those described previously, subject to local regulations. The weighted-average target allocation for the non-U.S. plans is 16 percent equity securities, 70 percent fixed-income securities, 3 percent real estate and 11 percent other investments, which is consistent with the allocation decisions made by the company's management. In some countries, a higher percentage allocation to fixed income is required to manage solvency and funding risks. In others, the responsibility for managing the investments typically lies with a board that may include up to 50 percent of members elected by employees and retirees. This can result in slight differences compared with the strategies previously described. The percentage of non-U.S. plans investment in assets that are less liquid is consistent with the U.S. plan. The use of derivatives is also consistent with the U.S. plan and mainly for currency hedging, interest rate risk management, credit exposure and alternative investment strategies.

The company's nonpension postretirement benefit plans are underfunded or unfunded. For some plans, the company maintains a nominal, highly liquid trust fund balance to ensure timely benefit payments.

Defined Benefit Pension Plan Assets

The following table presents the company's defined benefit pension plans' asset classes and their associated fair value at December 31, 2020. The U.S. Plan consists of the Qualified PPP and the non-U.S. Plans consist of all plans sponsored by the company's subsidiaries.

(\$ in millions)	U.S. Plan				Non-U.S. Plans			
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Equity								
Equity securities ⁽¹⁾	\$2,714	\$ 0	\$ —	\$ 2,714	\$474	\$ 0	\$ —	\$ 474
Equity mutual funds ⁽²⁾	105	—	—	105	0	—	—	0
Fixed income								
Government and related ⁽³⁾	—	21,375	—	21,375	—	9,760	2	9,762
Corporate bonds ⁽⁴⁾	—	18,217	542	18,759	—	3,725	—	3,725
Mortgage and asset-backed securities	—	612	—	612	—	3	—	3
Fixed income mutual funds ⁽⁵⁾	470	—	—	470	—	—	—	—
Insurance contracts ⁽⁶⁾	—	—	—	—	—	6,675	—	6,675
Cash and short-term investments ⁽⁷⁾	76	1,001	—	1,077	352	651	—	1,002
Real estate	—	—	—	—	—	—	298	298
Derivatives ⁽⁸⁾	(3)	18	—	15	69	521	—	590
Other mutual funds ⁽⁹⁾	—	—	—	—	29	—	—	29
Subtotal	3,363	41,222	542	45,128	923	21,335	300	22,559
Investments measured at net asset value using the NAV practical expedient⁽¹⁰⁾								
Other ⁽¹¹⁾	—	—	—	(321)	—	—	—	(39)
Fair value of plan assets	\$3,363	\$41,222	\$542	\$54,386	\$923	\$21,335	\$300	\$43,832

⁽¹⁾ Represents U.S. and international securities. The U.S. Plan includes IBM common stock of \$6 million, representing 0.010 percent of the U.S. Plan assets. Non-U.S. Plans include IBM common stock of \$1 million, representing 0.003 percent of the non-U.S. Plans assets.

⁽²⁾ Invests in predominantly equity securities.

⁽³⁾ Includes debt issued by national, state and local governments and agencies.

⁽⁴⁾ Non-U.S. Plans include IBM corporate bonds of \$5 million, representing 0.012 percent of the non-U.S. Plans assets.

⁽⁵⁾ Invests predominantly in fixed-income securities.

⁽⁶⁾ Primarily represents insurance policy contracts (Buy-In) in certain non-U.S. plans.

⁽⁷⁾ Includes cash, cash equivalents and short-term marketable securities.

⁽⁸⁾ Includes interest-rate derivatives, forwards, exchange-traded and other over-the-counter derivatives.

⁽⁹⁾ Invests in both equity and fixed-income securities.

⁽¹⁰⁾ Investments measured at fair value using the net asset value (NAV) per share (or its equivalent) as a practical expedient, including commingled funds, hedge funds, private equity and real estate partnerships.

⁽¹¹⁾ Represents net unsettled transactions, relating primarily to purchases and sales of plan assets.

The U.S. nonpension postretirement benefit plan assets of \$15 million were invested primarily in cash equivalents, categorized as Level 1 in the fair value hierarchy. The non-U.S. nonpension postretirement benefit plan assets of \$53 million, primarily in Brazil, and, to a lesser extent, in Mexico and South Africa, were invested primarily in government and related fixed-income securities and corporate bonds, categorized as Level 2 in the fair value hierarchy.

The following table presents the company's defined benefit pension plans' asset classes and their associated fair value at December 31, 2019. The U.S. Plan consists of the Qualified PPP and the non-U.S. Plans consist of all plans sponsored by the company's subsidiaries.

(\$ in millions)	U.S. Plan				Non-U.S. Plans			
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Equity								
Equity securities ⁽¹⁾	\$1,943	\$ —	\$ —	\$ 1,943	\$2,209	\$ 0	\$ —	\$ 2,209
Equity mutual funds ⁽²⁾	85	—	—	85	—	—	—	—
Fixed income								
Government and related ⁽³⁾	—	21,134	—	21,134	—	10,288	2	10,290
Corporate bonds ⁽⁴⁾	—	16,666	518	17,185	—	2,124	—	2,124
Mortgage and asset-backed securities	—	630	—	630	—	19	—	19
Fixed income mutual funds ⁽⁵⁾	386	—	—	386	—	—	—	—
Insurance contracts	—	—	—	—	—	1,862	—	1,862
Cash and short-term investments ⁽⁶⁾	54	848	—	903	204	644	—	849
Real estate	—	—	—	—	—	—	328	328
Derivatives ⁽⁷⁾	0	6	—	6	18	969	—	987
Other mutual funds ⁽⁸⁾	—	—	—	—	25	0	—	25
Subtotal	2,469	39,284	518	42,271	2,456	15,907	330	18,693
Investments measured at net asset value using the NAV practical expedient⁽⁹⁾								
Other ⁽¹⁰⁾	—	—	—	(6)	—	—	—	(26)
Fair value of plan assets	\$2,469	\$39,284	\$518	\$51,784	\$2,456	\$15,907	\$330	\$40,319

⁽¹⁾ Represents U.S. and international securities. The U.S. Plan includes IBM common stock of \$2 million, representing 0.004 percent of the U.S. Plan assets. Non-U.S. Plans include IBM common stock of \$10 million, representing 0.02 percent of the non-U.S. Plans assets.

⁽²⁾ Invests in predominantly equity securities.

⁽³⁾ Includes debt issued by national, state and local governments and agencies.

⁽⁴⁾ The U.S. Plan includes IBM corporate bonds of \$37 million, representing 0.07 percent of the U.S. Plan assets. Non-U.S. Plans include IBM corporate bonds of \$8 million, representing 0.02 percent of the non-U.S. Plans assets.

⁽⁵⁾ Invests in predominantly fixed-income securities.

⁽⁶⁾ Includes cash and cash equivalents and short-term marketable securities.

⁽⁷⁾ Includes interest-rate derivatives, forwards, exchange-traded and other over-the-counter derivatives.

⁽⁸⁾ Invests in both equity and fixed-income securities.

⁽⁹⁾ Investments measured at fair value using the net asset value (NAV) per share (or its equivalent) as a practical expedient, including commingled funds, hedge funds, private equity and real estate partnerships.

⁽¹⁰⁾ Represents net unsettled transactions, relating primarily to purchases and sales of plan assets.

The U.S. nonpension postretirement benefit plan assets of \$3 million were invested in cash equivalents, categorized as Level 1 in the fair value hierarchy. The non-U.S. nonpension postretirement benefit plan assets of \$65 million, primarily in Brazil, and, to a lesser extent, in Mexico and South Africa, were invested primarily in government and related fixed-income securities and corporate bonds, categorized as Level 2 in the fair value hierarchy.

The following tables present the reconciliation of the beginning and ending balances of Level 3 assets for the years ended December 31, 2020 and 2019 for the U.S. Plan.

(\$ in millions)	Total *
Balance at January 1, 2020	\$518
Return on assets held at end of year	29
Return on assets sold during the year	0
Purchases, sales and settlements, net	(5)
Transfers, net	0
Balance at December 31, 2020	\$542

* Corporate bonds.

(\$ in millions)	Corporate Bonds	Mortgage and Asset-Backed Securities	Total
Balance at January 1, 2019	\$359	\$ 4	\$363
Return on assets held at end of year	40	—	40
Return on assets sold during the year	1	0	1
Purchases, sales and settlements, net	105	0	105
Transfers, net	13	(4)	9
Balance at December 31, 2019	\$518	\$ —	\$518

The following tables present the reconciliation of the beginning and ending balances of Level 3 assets for the years ended December 31, 2020 and 2019 for the non-U.S. Plans.

(\$ in millions)	Government and Related	Private Real Estate	Total
Balance at January 1, 2020	\$ 2	\$328	\$330
Return on assets held at end of year	0	(29)	(29)
Return on assets sold during the year	—	2	2
Purchases, sales and settlements, net	—	(14)	(14)
Transfers, net	—	4	4
Foreign exchange impact	0	7	7
Balance at December 31, 2020	\$ 2	\$298	\$300

(\$ in millions)	Government and Related	Private Real Estate	Total
Balance at January 1, 2019	\$ 2	\$339	\$341
Return on assets held at end of year	0	(11)	(11)
Return on assets sold during the year	0	4	4
Purchases, sales and settlements, net	(1)	(17)	(18)
Transfers, net	—	—	—
Foreign exchange impact	0	13	13
Balance at December 31, 2019	\$ 2	\$328	\$330

Valuation Techniques

The following is a description of the valuation techniques used to measure plan assets at fair value. There were no changes in valuation techniques during 2020 and 2019.

Equity securities are valued at the closing price reported on the stock exchange on which the individual securities are traded. IBM common stock is valued at the closing price reported on the New York Stock Exchange. Mutual funds are typically valued based on quoted market prices. These assets are generally classified as Level 1.

The fair value of fixed-income securities is typically estimated using pricing models, quoted prices of securities with similar characteristics or discounted cash flows and are generally classified as Level 2. If available, they are valued using the closing price reported on the major market on which the individual securities are traded.

Cash includes money market accounts that are valued at their cost plus interest on a daily basis, which approximates fair value. Short-term investments represent securities with original maturities of one year or less. These assets are classified as Level 1 or Level 2.

Real estate valuations require significant judgment due to the absence of quoted market prices, the inherent lack of liquidity and the long-term nature of such assets. These assets are initially valued at cost and are reviewed periodically utilizing available and relevant market data, including appraisals, to determine if the carrying value of these assets should be adjusted. These assets are classified as Level 3.

Exchange-traded derivatives are valued at the closing price reported on the exchange on which the individual securities are traded, while forward contracts are valued using a mid-close price. Over-the-counter derivatives are typically valued using pricing models. The models require a variety of inputs, including, for example, yield curves, credit curves, measures of volatility and foreign exchange rates. These assets are classified as Level 1 or Level 2 depending on availability of quoted market prices.

Certain investments are measured at fair value using the net asset value (NAV) per share (or its equivalent) as a practical expedient. These investments, which include commingled funds, hedge funds, private equity and real estate partnerships, are typically valued using the NAV provided by the administrator of the fund and reviewed by the company. The NAV is based on the value of the underlying assets owned by the fund, minus liabilities and divided by the number of shares or units outstanding.

Contributions and Direct Benefit Payments

It is the company's general practice to fund amounts for pensions sufficient to meet the minimum requirements set forth in applicable employee benefits laws and local tax laws. From time to time, the company contributes additional amounts as it deems appropriate.

The following table presents the contributions made to the non-U.S. DB plans, nonpension postretirement benefit plans, multi-employer plans, DC plans and direct payments for 2020 and 2019. The cash contributions to the multi-employer plans represent the annual cost included in the net periodic (income)/cost recognized in the Consolidated Income Statement. The company's participation in multi-employer plans has no material impact on the company's financial statements.

(\$ in millions)	2020	2019
For the years ended December 31:		
Non-U.S. DB plans	\$ 182	\$ 243
Nonpension postretirement benefit plans	325	304
Multi-employer plans	29	32
DC plans	1,058	1,040
Direct benefit payments	567	559
Total	\$2,161	\$2,177

In 2020 and 2019, \$452 million and \$455 million, respectively, of contributions to the non-U.S. DB plans and nonpension postretirement benefit plans were made in U.S. Treasury securities. Additionally, in 2020 and 2019, contributions of \$288 million and \$180 million, respectively, were made to the Active Medical Trust in U.S. Treasury securities. Contributions made with U.S. Treasury securities are considered a non-cash transaction.

Defined Benefit Pension Plans

In 2021, the company is not legally required to make any contributions to the U.S. defined benefit pension plans. However, depending on market conditions, or other factors, the company may elect to make discretionary contributions to the Qualified PPP during the year.

In 2021, the company estimates contributions to its non-U.S. defined benefit and multi-employer plans to be approximately \$300 million, the largest of which will be contributed to defined benefit pension plans in Spain and Japan. This amount generally represents legally mandated minimum contributions.

Financial market performance in 2021 could increase the legally mandated minimum contribution in certain countries which require monthly or daily remeasurement of the funded status. The company could also elect to contribute more than the legally mandated amount based on market conditions or other factors.

Expected Benefit Payments

Defined Benefit Pension Plan Expected Payments

The following table presents the total expected benefit payments to defined benefit pension plan participants. These payments have been estimated based on the same assumptions used to measure the plans' PBO at December 31, 2020 and include benefits attributable to estimated future compensation increases, where applicable.

(\$ in millions)	Qualified U.S. Plan Payments	Nonqualified U.S. Plans Payments	Qualified Non-U.S. Plans Payments	Nonqualified Non-U.S. Plans Payments	Total Expected Benefit Payments
2021	\$ 3,522	\$123	\$ 2,093	\$ 364	\$ 6,102
2022	3,490	122	2,124	354	6,091
2023	3,451	121	2,140	361	6,073
2024	3,393	120	2,160	368	6,040
2025	3,333	118	2,189	373	6,012
2026-2030	15,062	545	10,529	1,943	28,078

Notes to Consolidated Financial Statements

International Business Machines Corporation and Subsidiary Companies

The 2021 expected benefit payments to defined benefit pension plan participants not covered by the respective plan assets (underfunded plans) represent a component of compensation and benefits, within current liabilities, in the Consolidated Balance Sheet.

Nonpension Postretirement Benefit Plan Expected Payments

The following table presents the total expected benefit payments to nonpension postretirement benefit plan participants. These payments have been estimated based on the same assumptions used to measure the plans' APBO at December 31, 2020.

(\$ in millions)	U.S. Plan Payments	Qualified Non-U.S. Plans Payments	Nonqualified Non-U.S. Plans Payments	Total Expected Benefit Payments
2021	\$ 364	\$ 16	\$ 25	\$ 405
2022	377	17	26	419
2023	380	18	25	423
2024	363	19	26	408
2025	339	20	25	385
2026-2030	1,296	119	123	1,538

The 2021 expected benefit payments to nonpension postretirement benefit plan participants not covered by the respective plan assets represent a component of compensation and benefits, within current liabilities, in the Consolidated Balance Sheet.

Other Plan Information

The following table presents information for defined benefit pension plans with accumulated benefit obligations (ABO) in excess of plan assets. For a more detailed presentation of the funded status of the company's defined benefit pension plans, see the table on page 131.

(\$ in millions)	2020		2019	
At December 31:	Benefit Obligation	Plan Assets	Benefit Obligation	Plan Assets
Plans with PBO in excess of plan assets	\$34,202	\$19,586	\$31,714	\$18,398
Plans with ABO in excess of plan assets	33,051	18,956	30,882	18,127
Plans with plan assets in excess of PBO	71,024	78,632	66,842	73,705

The following table presents information for the nonpension postretirement benefit plan with APBO in excess of plan assets. For a more detailed presentation of the funded status of the company's nonpension postretirement benefit plans, see the table on page 131.

(\$ in millions)	2020		2019	
At December 31:	Benefit Obligation	Plan Assets	Benefit Obligation	Plan Assets
Plans with APBO in excess of plan assets	\$4,545	\$45	\$4,685	\$47
Plans with plan assets in excess of APBO	21	22	19	21

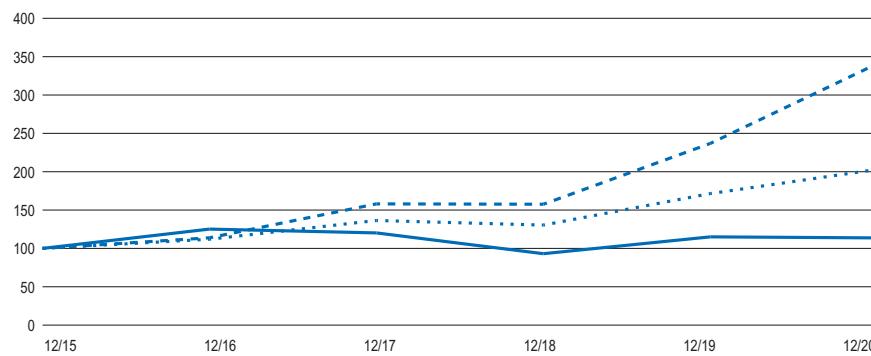
NOTE W. SUBSEQUENT EVENTS

On January 26, 2021, the company announced that the Board of Directors approved a quarterly dividend of \$1.63 per common share. The dividend is payable March 10, 2021 to shareholders of record on February 10, 2021.

COMPARISON OF FIVE-YEAR CUMULATIVE TOTAL RETURN FOR IBM, S&P 500 STOCK INDEX AND S&P INFORMATION TECHNOLOGY INDEX

The following graph compares the five-year cumulative total returns for IBM common stock with the comparable cumulative returns of certain Standard & Poor's (S&P) indices. Due to the fact that IBM is a company included in the S&P 500 Stock Index, the SEC's rules require the use of that index for the required five-year graph. Under those rules, the second index used for comparison may be a published industry or line-of-business index. The S&P Information Technology Index is such an index. IBM is also included in this index.

The graph assumes \$100 invested on December 31 (of the initial year shown in the graph) in IBM common stock and \$100 invested on the same date in each of the S&P indices. The comparisons assume that all dividends are reinvested.



(U.S. Dollar)	2015	2016	2017	2018	2019	2020
International Business Machines	\$100.00	\$125.19	\$120.20	\$ 93.11	\$115.06	\$113.69
S & P 500	100.00	111.96	136.40	130.42	171.49	203.04
S & P Information Technology	100.00	113.85	158.06	157.60	236.86	340.83

Stockholder Information

International Business Machines Corporation and Subsidiary Companies

IBM Stockholder Services

Stockholders with questions about their accounts should contact:

Computershare Trust Company, N.A., P.O. Box 505005, Louisville, Kentucky 40233-5005, (888) IBM-6700.

Investors residing outside the United States, Canada and Puerto Rico should call (781) 575-2727.

Stockholders can also reach Computershare Trust Company, N.A. via e-mail at: ibm@computershare.com

Hearing-impaired stockholders with access to a telecommunications device (TDD) can communicate directly with Computershare Trust Company, N.A., by calling (800) 490-1493. Stockholders residing outside the United States, Canada and Puerto Rico should call (781) 575-2694.

IBM on the Internet

Topics featured in this Annual Report can be found online at www.ibm.com. Financial results, news on IBM products, services and other activities can also be found at that website.

IBM files reports with the Securities and Exchange Commission (SEC), including the annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and any other filings required by the SEC.

IBM's website (www.ibm.com/investor) contains a significant amount of information about IBM, including the company's annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and all amendments to those reports filed or furnished pursuant to Sections 13(a) and 15(d) of the Securities Exchange Act of 1934 as soon as reasonably practicable after such material is electronically filed with or furnished to the SEC. These materials are available free of charge on or through IBM's website.

The SEC maintains a website (www.sec.gov) that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC.

Computershare Investment Plan (CIP)

(formerly IBM Investor Services Program)

The Computershare Investment Plan brochure outlines a number of services provided for IBM stockholders and potential IBM investors, including the reinvestment of dividends, direct purchase and the deposit of IBM stock certificates for safekeeping. The brochure is available at www.computershare.com/ibmcip or by calling (888) IBM-6700. Investors residing outside the United States, Canada and Puerto Rico should call (781) 575-2727.

Investors with other requests may write to: IBM Stockholder Relations, New Orchard Road, M/D 325, Armonk, New York 10504.

IBM Stock

IBM common stock is listed on the New York Stock Exchange and the Chicago Stock Exchange under the symbol "IBM".

Stockholder Communications

Stockholders can get quarterly financial results and voting results from the Annual Meeting by calling (914) 499-7777, by sending an e-mail to infoibm@us.ibm.com, or by writing to IBM Stockholder Relations, New Orchard Road, M/D 325, Armonk, New York 10504.

Annual Meeting

The IBM Annual Meeting of Stockholders will be held on Tuesday, April 27, 2021, at 10 a.m. (ET).

Literature for IBM Stockholders

The literature mentioned below on IBM is available without charge from:

Computershare Trust Company, N.A., P.O. Box 505005, Louisville, Kentucky 40233-5005 (888) IBM-6700.

Investors residing outside the United States, Canada and Puerto Rico should call (781) 575-2727.

The company's annual report on Form 10-K and the quarterly reports on Form 10-Q provide additional information on IBM's business. The 10-K report is released by the end of February; 10-Q reports are released by early May, August and November.

An audio recording of the 2020 Annual Report will be available for sight-impaired stockholders in June 2021.

The IBM Corporate Responsibility Report highlights IBM's values and its integrated approach to corporate responsibility, including its innovative strategies to transform communities through global citizenship. Highlights from the Corporate Responsibility Report are available online at www.ibm.org/responsibility/2019.

General Information

Stockholders of record can receive account information and answers to frequently asked questions regarding stockholder accounts online at www.ibm.com/investor. Stockholders of record can also consent to receive future IBM Annual Reports and Proxy Statements online through this site.

For answers to general questions about IBM from within the continental United States, call (800) IBM-4YOU. From outside the United States, Canada and Puerto Rico, call (914) 499-1900.

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