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Financing modes, risk, efficiency and profitability in Islamic banks: Modeling for the GCC countries

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Abstract

The aim of this research is to develop a conceptual model that includes variables related to financing modes, risk-taking, efficiency, and Islamic bank profitability in GCC Countries. The results indicate that the total effect of financing modes on banks' profitability is high and statistically significant. The results show that a higher- level of participation in Mudharabah and Musharakah financing will generate high credit risk. Murabahah financing increases, directly and indirectly, the profitability and improve simultaneously the capitalization ratio and the cost efficiency for Islamic banks in the GCC countries. The contribution of our research is on two levels. On the one hand, our study is an addition to the literature that examined the determinants of Islamic banks performance. The conceptual model added risktaking and cost efficiency as intervening variables in the profit-financing modes relationship. On the other hand, this research uses path analysis method, called second-generation approach, to test the model.

1. Introduction

Over the last few decades, there has been rapid growth in the Islamic banking industry. In Islamic banks, unlike conventional banks, the use of interest instrument is prohibited. Islamic banks instead use other instruments permitted by Islamic law and consistent with Sharia principles. Academic researchers have been trying to get a better understanding of this new form of banking (Abdeldayem & Darwish, 2018) and several researchers have shown that by offering financial services in accordance with the rules of sharia, Islamic banks can promote and accelerate the economic development of a society(Abedifar et al., 2013; El-Hawary et al., 2004; Gheeraert, 2014; Hassan & Aliyu, 2018; Pesendorfer & Lehner, 2016). Given this, the improvement of performance of Islamic banks would be largely beneficial for both bankers and the economy.

It is widely recognized in the literature that the main source of income for Islamic banks is from financing modes(Alzoubi, 2018; Bukhari & Qudous, 2012; M. M. Khan et al., 2008). The financing modes provided by Islamic banks are divided into two broad categories. The first is based on the principle of equity and participation in profit and loss (i.e. profit-loss sharing) and includes two types of investment contracts which are Musharakah and Murharabah. The second category is based on the principle of cost plus, or profit-margin participation and are represented mainly by contracts like Murabahah, Ijarah, Salam, and Istisna. These forms can also be considered debtbased financing.

On the other hand, several authors have shown that the generation of profits by Islamic banks not only comes from amounts and compositions of financing modes, but also from bank management behavior (Alzoubi, 2018; Sutrisno, 2016). These researchers suggest that bank management behavior is a key factor in determining the performance-financing modes relationship. Management behavior of an Islamic bank can be measured through various indicators such as; risk-taking strategy or cost management strategy (Reddy, 2011; Williams, 2004). An advanced analysis of previous studies on the topic shows that these indicators of management behavior are themselves affected by the financing modes provided by Islamic banks (Zeitun, 2012).

However, the major failure of previous research is that they only constitute partial studies, looking separately at the relationships between Islamic bank performance, financing modes, and bank management behavior. Hence, a potential drawback is present because the excluded management behavior variables may be correlated with both bank performance and financing modes. Research that simultaneously integrates all these variables into an integrated model does not, to the best of our knowledge, exist(Tan et al., 2017; Yao et al., 2018).

Therefore, the aim of this research is to develop a conceptual model that simultaneously includes the variables related to financing modes, risk-taking, cost management, and Islamic bank

performance. Our conceptual model allows us to examine the set of causal relationships in a unified framework that may exist between these variables.

The contribution of our research is on three levels. First, our study is a compliment and addition to the literature that examines the determinants of Islamic banks performance. There are no previous studies that primarily conceptualize the relationships between financing modes of Islamic banks, their risk-taking, cost management and performance all together (Hassan & Aliyu, 2018; Sutrisno, 2016). Second, in our research we go beyond regression models, using path analysis method. This technique, called second-generation approach, is used to estimate simultaneously several causal relations. The path analysis technique allows examining the direct and indirect effects of each of the independent variables. Third, the sample of our empirical study represents the Islamic banks in the GCC countries. The results of this study will be useful for these banks to optimally allocate their financing amounts to different modes and improve both management behavior and profitability.

The rest of the paper is organized in the following manner. Section 2 discusses the existing literature on Islamic banks performance and develops the hypotheses. Section 3 discusses the data, methodology and the estimation method. Section 4presents the discussion of empirical results. Section 5 summarizes and concludes.

2. Review of literature and hypotheses development

There has been much research done on the factors that determine the profitability of Islamic banks (Alzoubi, 2018; Bucevska & Hadzi Misheva, 2017; Husain et al., 2015). In this paper, we will focus on theoretical and empirical studies that examine the role of financing modes and management behavior to explain Islamic banks profitability.

We begin this section by providing some background on financing modes in Islamic banks since they differ from conventional banks. Please see Appendix I for a more detailed discussion of Islamic bank financing modes. Generally, the first objective of a firm is to maximize profits, and the main income of banks, including Islamic banks, comes from financing. The fundamental principle of Islamic finance is that money itself is without intrinsic value. In Islam, interest is considered as Riba and is forbidden, meaning that making money from money is prohibited. The philosophy of Islamic finance is based instead on trading. Hence, money must be used in a helpful productive manner that generates prosperity and wealth for everyone through legitimate and justifiable trade and investment in assets. Islamic banks generate revenue through sharing the profits related to trade by one of two general modes, profit-loss sharing (PLS) or a mode based on profit-margin.

Financing based on the PLS paradigm is classified into two equity-financing practices, Mudharabah and Musharakah. In a Mudharabah contract, capital is provided by the bank to an entrepreneur and any profits generated are shared on a basis agreed to in advance. In a Musharakah contract, which is a kind of joint venture, all parties to the agreement contribute

capital. Profits are again shared on a basis agreed to in advance. Neither of these forms guarantee any fixed earnings for the Islamic bank.

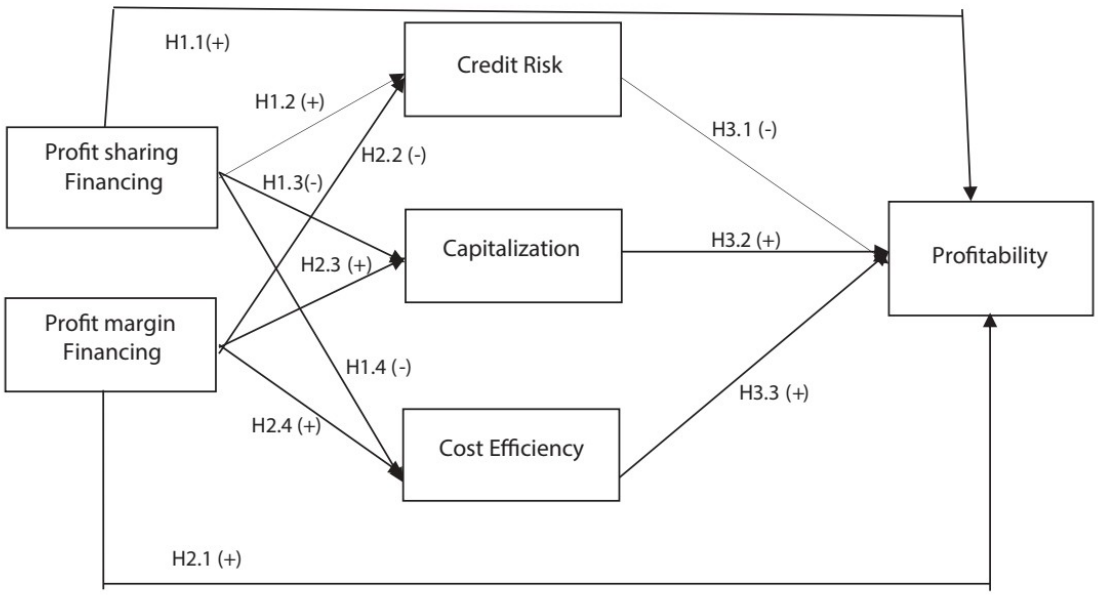
Financing based on the profit-margin mode can be classified into several categories; Murabahah, Ijarah, Salam and Istisna. While these forms still involve the Islamic bank in the trading process, they generally provide a more fixed revenue flow. The methods in this group are similar to forms of lease and purchase, purchase for resale at a pre-determined price and advance payment for future goods.

Several authors have shown that the generation of profits by Islamic banks depends mostly on the financing modes provided (Bukhari & Qudous, 2012) and bank management behavior that can be measured through various indicators, mainly risk-taking strategy and cost management strategy (cost efficiency). Again, theoretical and empirical literature prove also that management behavior indicators could be themselves explained by the financing modes provided by Islamic banks. In this context, our study tries to develop a conceptual model of Islamic banks performance (profitability) that allows to examine, in a unified framework, the set of the causal relationships that may exist between these variables.

The developed conceptual model includes simultaneously all the variables related to financing modes, risk-taking, cost management, and Islamic bank performance (profitability).

Figure 1 shows the theoretical framework of our research model. The objective of this conceptual model is to examine whether financing modes have an impact on the risk, efficiency, and profitability of Islamic banks. This path model stipulates that financing modes represent the exogenous (independent) variables. Endogenous variables include intervening variables (credit risk, capitalization and cost efficiency) and the dependent variable (profitability).

Figure 1. Conceptual model: Causal relationships between Financing Strategies, Risk, Efficiency and Bank Profitability.



In the following sections, we review the literature and develop the hypotheses presented in Figure 1. Subsection 2.1 reviews the literature related to profit-loss financing, subsection 2.2 profitmargin financing, subsection 2.3 risk-taking and profitability and subsection 2.4we review efficiency and profitability literature.

2.1. Financing based on profit-loss sharing and Islamic bank profitability

In one of the earliest conceptual studies on the profitability of Islamic banks, Nienhaus (1983) suggested that Islamic banks use market interest rates as a basis for calculating their profit-loss sharing ratios. Further, the author recommends that the profit-loss sharing ratio is equivalent to the interest rate used by conventional banks. This study confirms the proposition that Islamic banks will increase the charges to customers, and thus increase their total income.

In fact, several previous studies have shown that financing based on profit-loss sharing (Mudharabah and Musharakah) improve the profitability of Islamic banks (Asutay & Izhar, 2007). Muda et al. (2013) show that the adoption of profit-loss sharing agreements in Islamic banking models can create value for their shareholders. Indeed, the authors found that Islamic banks are, on average, highly profitable. Husain et al. (2015) found that several internal factors, especially the financing mode decisions, significantly and positively affect Islamic bank profitability in Malaysia.

Yanikkaya et al. (2018)analyze the dynamics of profitability of Islamic and conventional banks in Islamic Cooperation countries and the United Kingdom, during the period from 2007 to 2013. Their results indicate that the usage of the profit-loss sharing financing promotes more risksharing as compared to financing based on profit-margin Murabahah contracts and could contribute to the amplification of Islamic banks profitability. More precisely, during a strong

economy, Islamic bank profitability will increase since only a small percentage of the profit-loss sharing funding will default. This all leads to our first hypothesis:

H1.1: Financing based on profit and loss sharing (Mudharabah and Musharakah) has a positive impact on the profitability of Islamic banks.

2.1.1. Financing based on profit-loss sharing and Islamic bank risk-taking

For banking firms, risk-taking is examined regarding two perspectives(Abdeldayem & Darwish, 2018; Mohamad et al., 2013): (1) The overall economic perspective indicating that risk is measured by the quality of the bank asset portfolio and represents the credit risk level; and (2) The financial perspective, in which risk is assessed from shareholders' view and can be measured by the bank capitalization degree.

Theoretically, inherent risk for profit-loss sharing financing is associated with moral hazard and asymmetric information, all of which are related to the integrity of customer, or mudharib. Credit risks are losses for the bank because debtors (entrepreneurs) have not returned the amount invested to the bank in a predetermined time period. According to Shajari and Shajari (2010), higher credit risk provides a lower quality of financing and more nonperforming assets. In these conditions, nonperforming assets increase with the amount of profit-loss sharing financing provided by Islamic banks.

Using a sample that includes 28 Islamic banks from 14 countries, Ariffin et al. (2009)finds that credit risk is very high under the profit-loss sharing Mudharabah and Musharakah types of financing. On the basis of a sample covering 19 Islamic banks from several countries in the Middle East region, Abdeldayem and Darwish (2018) showed that credit risk is the most important risk for profit-loss sharing financing.

Likewise, Abusharbeh (2014) studied the effect of the financing modes on credit risk and profitability of Islamic banks in Indonesia during the period 2008–2013. The results show that profit-loss sharing financing, Musharakah and Mudharabah, has a positive and significant effect on the credit risk of Islamic banks as measured by non-performing loans. According to the author, these results indicate that Indonesian Islamic banks should be increasingly cautious if they want to opt for such a form of financinginorder to reduceriskandimprovetheir profitability.Thisleadstooursecondhypothesisthat:

H1.2: Financing based on profit-loss sharing (Mudharabah and Musharakah) has a positive impact on the credit risk of Islamic banks.

C3apital adequacy is an essential concept, not only in conventional banking, but also in Islamic banking because of financing activity. Unlike for current accounts, Islamic banks do not have to provide liquidity insurance to Investment Account Holders (IAHs). In cases where the bank plays the double function of capital provider (through the allocation of unrestricted PSIA) and entrepreneur, it does not support the losses on assets financed by these accounts, unless it participates in the project through a Musharakah and Mudharabah contract. This suggests that a

bank seeking to maximize shareholder value will try to excessively boost leverage by increasing the volume of PSIA. As pointed out by Shrieves and Dahl (1992), this situation allows conventional banks to transfer risk from shareholders to depositors. It is possible to transpose this case to Islamic banks, which can be more exposed to moral hazard in the context of asymmetric information. Subsequently, an agency problem could arise between shareholders and Islamic bank managers on the one hand, and IAHs on the other. In fact, along with an increase of PSIA share in total liabilities, shareholders' wealth will be less threatened by a risk of loss on assets value. When assets become riskier, it will be more profitable for the bank to increase the share of PSIA and reducing simultaneously its capital ratio in order to maximize returns on equity, at the detriment of its solvency level. Thus, providing more profit-sharing financing (Mudharabah and Musharakah) may lead to excessive risk-taking via higher leverage and a decrease in capitalization ratio. Thus, we propose to test the following hypothesis:

H1.3: Financing based on profit-loss sharing (Mudharabah and Musharakah) has a negative impact on the capitalization ratio of Islamic banks.

2.1.2. Financing based on profit-loss sharing and Islamic bank efficiency

Despite the diverse literature for bank efficiency, there are a few studies focused on the effect of Islamic banks financing modes on their cost-efficiency. In equity-based financing (Mudharabah and Musharakah), the entrepreneur who is given the responsibility to manage the capital should manage it accordingly in order to avoid credit and market risk. To implement this financing mode, Islamic banks need to hold more capital, and it is widely believed theoretically that bank funding from capital sources is more expensive than debt funding (Diamond & Rajan, 2001). However, due to the asymmetric information problem, the entrepreneur does not provide sufficient information to the financier (bank) on actual and future income of the project. The focus of Islamic banking on the profitability of investments increases the potential that bank financial resources will be directed to the most productive investments, and hence increases the profitability of the profitloss sharing financing. But this management process generally increases the bank operating expenses, which decreases its cost-efficiency.

According to Othman et al. (2015), the level of inefficiency increases when Islamic banks provide more equity-based financing (Mudharabah and Musharakah) compared to debt-based financing (Murabahah). Indeed, equity financing mode will cost the Islamic banks more because funding from capital sources are more expensive. In these conditions, we formulate the following hypothesis:

H1.4: Financing based on profit-loss sharing (Mudharabah and Musharakah) has a negative impact on the efficiency of Islamic banks.

2.2. Financing based on profit-margin and Islamic bank profitability

Financing with this mode has many types, such as Murabahah, Ijara, Istisna and Salam financing. But, Murabahah has been becoming the most popular among Islamic

banks(Abusharbeh, 2014; Bahrini, 2017; Hafnida et al., 2015). We will focus primarily on that form.

Murabahah financing is defined as a transaction between two parties. The bank is authorized to buy goods and resell them to the customer at a pre-determined price. This price includes the original amount given to the entrepreneur plus a mark-up. Therefore, Murabahah, is a type of sale that is considered a form of debt financing (deferred payments). In this context, Haron et al. (1997) established that Murabahah financing is less risky and more profitable for Islamic banking when compared with the alternative modes of financing based on equity (Mudharabah and Musharakah).

In addition, the results of Peter (1999) study showed that Murabahah financing and the degree of credit risk that is acceptable by the bank has a vital effect on the level of Islamic bank profitability. More precisely, Islamic banks' profits are generally higher when using Murabahah financing based on the degree of risks in their investment projects (assets).

Again, Abusharbeh (2014) study indicates that using Murabahah financing improves the profitability of Indonesian banks. Indeed, compared to profit-loss sharing financing (Mudharabah and Musharakah), Murabahah financing has a relatively low degree of credit risks, which generates high profits for Islamic banks. In another study of Indonesian Islamic banks Sutrisno (2016) showed that Murabahah financing has a positive impact on financial performance (profitability). But that Musharakah and Mudharabah financing did not have any influence on the profitability of Islamic banks. These results confirm those of (Haron et al., 1997; Samad & Hassan, 2006) for the Malaysian case.

According to Yanikkaya, Gumus, and Pabuccu (2018), Murabahah practice is short-term financing and therefore less risky and able to produce profit compared to long-term financing (Mudharabah and Musharakah). Consequently, any increased amount of Murabahah financing will improve profitability in the short-term. Therefore, we make the following hypothesis:

H2.1: Financing based on profit margin (Murabahah) has a positive impact on the profitability of Islamic banks.

2.2.1. Financing based on profit-margin and Islamic bank risk-taking

Farooq and Ahmed (2013)suggested that credit risk for Islamic banks is quite low in the case of debt-based financing (Murabahah) compared with equity-based financing (Mudharabah and Musharakah). The authors revealed that credit risk appears to be the lowest in Murabahah financing. Therefore, higher levels of Murabahah financing are expected to generate a lower degree of credit risks. Accordingly, this argument formulates the hypothesis as follows:

H2.2: Financing based on profit margin (Murabahah) has a negative impact on the credit risk of Islamic banks.

Several studies have shown that financing based on profit margin (Murabahah) can affect the level of the Islamic bank's capital. On a theoretical level, Islamic banks can benefit from

applying profit margin (Murabahah) to Investment Account Holders (IAHs). Therefore; they can take on more leverage (lower capital) and generate higher profits to satisfy shareholders at the expense of IAHs who bear any potential losses. This allows reducing the agency costs between bank managers and shareholders (Berger & Di Patti, 2006).

However, on a practical level, Islamic banks cannot always channel losses to IAHs because eventually, they will no longer invest with Islamic banks. IAHs could withdraw their money causing liquidity and solvency problems. One solution is that Islamic banks maintain profit smoothing reserves to remunerate IAH accounts and avoid any possible withdrawals, especially when competing with conventional banks. Therefore, Islamic banks need to maintain a higher capital ratio than conventional banks to avoid any possible solvency problems. Higher capital ratios force bank owners to absorb losses using their own resources as a response to a "more skin in the game" policy instead of seeking a bailout through public funds, thus supporting the moral hazard hypothesis cited above.

Empirically, several studies have examined the impact of Islamic banks modes financing on their financial risk measured by the capitalization ratio (Farooq and Ahmed (2017). These results indicate that profit margin financing (Murabahah) reduces economic and financial risk for Islamic banks. More precisely, the increase of the amount of financing by Murabahah provided by Islamic banks is associated with the decrease of their capitalization ratio. This means that higher level of Murabahah financing has relatively low degree of risks compared with other financing strategies (Mudharabah and Musharakah). These results are consistent with several previous studies (Beck et al., 2013; Hassan & Lewis, 2007).

In these conditions, the hypothesis to be tested in this research is the following:

H2.3: Financing based on profit margin (Murabahah) has a positive impact on the capitalization degree of Islamic banks.

2.2.2. Financing based on profit-margin and Islamic bank efficiency

Theoretically, Murabahah is considered short-term financing. It represents a simple sale contract that fixes the price of certain assets plus a specified margin as profit. In these conditions, several empirical studies argue that, for Islamic banks, Murabahah financing is less risky compared to profit-loss sharing (Farooq & Ahmed, 2013). According to the authors, risk management costs would be relatively low compared to those for profit-loss sharing financing.

More recently, Bahrini (2017) showed empirically that a lack of professionalism and expertise for Islamic banking has resulted in the absence of qualified staff. This has prompted Islamic banks to resort to the next best alternative, recruiting staff from conventional banks. With their background in conventional banks and the use of interest, these staff are adopting the Murabahah principle in which Islamic banks play the role of a creditor rather than a business partner (profitloss sharing principle). This bank management behavior represents the main cause of the swift growth of Murabahah as a mode of financing, even though profit-loss sharing

financing (Mudharabah and Musharakah) corresponds better to the authentic theory of Islamic finance modes. Thus, Bahrini (2017) affirmed that, in financing based on profit-margin (Murabahah), Islamic banks have in reality no preference for controlling and examining the projectsor the behavior of the entrepreneur, since the financing provided is similar to a debt contract. Thus, the greater the financing provided by Murabahah is, the more cost-efficient is the banks and vice versa. Hence, we intend to test the following hypothesis:

H2.4: Financing based on profit-margin (Murabahah) has a positive impact on the efficiency of Islamic banks.

2.3. Risk-taking and profitability of Islamic banks

Compared to conventional banking, risks are usually quite important and become more complicated in Islamic banks, given the diversity and complexity of their contracts (Khairi et al., 2018). According to several studies, the management policy of risk is expected to be able to improve the financial performance of the bank (Boyd & De Nicolo, 2005; Menicucci & Paolucci, 2016). More precisely, the more the company is daring to take on risk, the greater the profit possibilities.

However, most studies expect the relationship of asset quality and profitability to be negative, as bad loans (credit risk) may lower the profitability of banks and lead to their failure (Brewer Iii et al., 2008). Ramadan et al. (2011) found a significant and negative relationship between asset quality (credit risk) and profitability for both conventional and Islamic banks.

Using a sample of Nigerian Islamic banks, Ogboi and Unuafe (2013) show that credit risk has a negative effect on banks' profitability. Recently, Ali et al. (2019) confirmed that Islamic banks' credit risk is negatively associated with the performance in the Pakistani contest. Therefore, the hypothesis to be tested is made as follows:

H3.1: Credit risk has a negative impact on the profitability of Islamic bank.

Capital ratio is also a valuable tool for assessing the safety and soundness of banks. Since the contribution of Modigliani and Miller (1958) a large literature has developed to explain capital structure in the presence of market imperfections (Alzoubi, 2018; Myers & Majluf, 1984). Taxation and expected bankruptcy costs are the major imperfections considered in determining the relationship between capital structure and firm performance.

According to Berger (1995), there are several potential explanations for a positive relationship between capital and bank profitability. Indeed, some researchers explain that when a bank has a high capital ratio, it shows that bank is safer, giving it an advantage and higher profitability (Altunbas et al., 2000; Goddard et al., 2011). In this context, Haron et al. (1997) found that capital ratio level had a significant positive impact on the profitability of Islamic banks. According to the author, a well-capitalized bank faces lower expected bankruptcy costs and will show a higher profit.

Recently, Alzoubi (2018)empirically examined the determinants of profitability for a sample of 42 Islamic banks from 13 MENA countries, during the period 2006 until 2016. Their results showed that the variables; bank size, capitalization ratio, and deposit level positively and significantly affect Islamic bank profitability. These results confirm those of M. M. S. Khan et al. (2014) for Islamic banks in Pakistan, and Bucevska and Hadzi Misheva (2017) in Balkan Countries. Therefore, the hypothesis to be tested in this study states that:

H3.2: Capitalization ratio has a positive impact on the profitability of Islamic bank.

2.4. Efficiency and profitability of Islamic banks

According to many theoretical and empirical researches, cost management appears to be one of the important determinants of Islamic banks' profitability. In Berger (1995) two hypotheses are used in explaining the efficiency and profit relationship for banks. The x-efficiency hypothesis asserts that firms with superior management of production and technologies have lower costs and therefore higher profits. The scale-efficiency hypothesis claims that firms tend to have equally good management and technology, but some produce at a more efficient scales than others, resulting in lower unit costs and higher unit profits (Beck et al., 2013; Molyneux & Thornton, 1992).

Seelanatha (2010) attempted to identify the influence of efficiency and market structure on bank profitability in Sir-Lanka. The findings suggest that the performance of banks depends on levels of efficiency, but not on market power. These results have been affirmed by the studies of Samad (2015) for Bangladesh Islamic and Commercial Banks, and Ramlan and Adnan (2016)in the case of Malaysia.

Yao et al. (2018) discover in their study that the profitability of banks in Pakistan is largely explained by their operational efficiency, credit quality, and the macroeconomic environment. These results are in line with those of Tan et al. (2017) for Chinese banks. Thus, we formulate the following hypothesis to be tested;

H3.3: Cost efficiency has a positive impact on the profitability of Islamic banks.

In the following section, we present the research methodology used to estimate our developed conceptual model presented in Figure 1 above.

3. Research methodology

In this section, we first present the sample and data source for our empirical study. Then, measurements and operationalization of the variables included in our model are analyzed. Finally, the reduced form of our conceptual model and estimation procedure will be described.

3.1. Sample and data sources

To perform our empirical study, we use a sample of Islamic banks operating in GCC countries. This sample includes the top 30 listed Islamic banks over a period of 15 years, running from 2001 to 2015. A total of 385 observations are used.

The choice of this sample is motivated firstly by the focus on a relatively homogenous group of Islamic banks. Indeed, the GCC countries belong in reality to the same class of economic development and regulatory framework, according to the recent ranking provided by the World Bank. Secondly, sample selection is restricted by the availability of data for Islamic banks in GCC countries. In fact, many Islamic banks in GCC countries have only been recently established (after the year 2000). Accordingly, this study uses a sample of major Islamic banks that have consistently published their financial statements over the study period from 2001 until 2015. Table 1 shows the sample distribution of Islamic banks by country of origin and the number of observations included in the study.

Table 1. Sample distribution of Islamic banks by country of origin and the number of observations

Country	Bahrain	Kuwait	Oman	Qatar	Saudi Arabia	UAE	Total
Number of banks	7	6	4	4	3	6	30
Number of observations	100	70	45	50	45	75	385

Source: Bank Scope database.

The first data source used to perform our empirical study is the international database "Bank Scope", which includes balance sheets and income statements published yearly by banks around the world. Macroeconomic variables are gathered from the annual reports of the IMF (International Monetary Fund) and the World Bank. In order to ensure the comparability of data across different GCC countries, all data are converted into US dollars as the international reference currency and are adjusted for the inflation rate of each country.

3.2. Variables definitions and measurement

From the literature review, we have identified the most commonly used measures for all variables included in the conceptual model (Figure 1).

3.2.1. Dependent variable

Considering the asset-based structure of Islamic banking operations, in this study we use two indicators to measure the Islamic bank profitability; return on assets (ROA) and return on equity (ROE). Return on assets (net income/total assets) is considered to be one of the most common profitability indicators for both Islamic and conventional banks' perspectives (Acaravci & Çalim, 2013). The indicator represents the profit gained on assets and shows how efficiently the financial resources of the bank are being utilized (Parashar, 2010; Saeed et al., 2013).

Return on equity (net income/equity) makes it possible to understand the profitability of Islamic banks from an equity shareholders' perspective, and represents the profit gained on the bank equity (capital). ROE has also been widely used in previously conducted profitability studies for Islamic banks (Hidayat & Abduh, 2012).

3.2.2. Independent variables

The independent variables in the conceptual model are principally divided into three categories, namely bank financing modes, risk-taking measures, and cost-efficiency measures.

3.2.2.1. Financing modes. Based on the review of the literature, financing of the economy provided by Islamic banks is achieved through two main modes or strategies. The first is based on the profitloss sharing principle (PSP). The second mode is financing based on the profit-margin principle (PMP).

Financing based on profit-loss sharing principle (PSP) is measured for bank i at the end of each year t, by the following ratio;

$$(PSP)_{it} = \frac{\text{Total funds in profit – sharing principles of the bank}}{\text{Total assets of the bank}}$$

With;

Total funds in profit sharing principles of thebank

= Total financing with Musharakah þ Mudharabah

This ratio appraises to what extent the Islamic bank has successfully met the objective of sharing profit or loss with investors(Abusharbeh, 2014; Kuppusamy et al., 2010). Therefore, this study formulates the profit-loss sharing financing, for each Islamic bank of the sample, as a percentage of Mudharabah and Musharakah financing from total assets.

The financing based on profit-margin principle (PMP) is measured for bank i at the end of each year t, by the following ratio;

$$(PSP)_{it} = \frac{\text{Total funds in profit – margin principles of the bank}}{\text{Total assets of the bank}}$$

With;

Total funds in profit m arg in principles of the bank ¼ Total financing with Musharakah

This ratio assesses the percentage of profit-margin financing from the total assets. The profitmargin financing groups together several categories mainly; Murabahah, Ijarah, Salam and Istisna. According to the empirical literature, Murabahah has been becoming the most popular among Islamic banks (Bakhita, 2017; Hafnida et al., 2015; Samad, 2015).

3.2.2.2. Risk-taking. Based on previous studies, the risk of Islamic bank is measured through the use of two indicators; credit risk and capitalization degree (Belkhaoui et al., 2014).

3.2.2.3. Credit risk. The credit risk of the Islamic bank is assessed in relation to its assets. This risk is related to the degradation of the quality of bank assets, particularly loans. Thus, we measure the credit risk, for bank i at the end of each year t by the following ratio:

$$CRISK_{it} = \frac{Non - performing\ loans\ of\ the\ bank}{Total\ bank\ loans}$$

Total bank loans

This measure of credit risk uses the amount of nonperforming financing (loans) in order to evaluate the ability of assets to generate profit in long run and to describes the capacity of Islamic banks in spreading risks and recovering default loans (Abusharbeh, 2014; Tan et al., 2017).

3.2.2.4. Capitalization degree. In this framework, bank risk-taking is assessed from the perspective of shareholders. In our study, the capitalization degree will be measured by using the following ratio:

$$CAP_{it} = \frac{Equity\ capital\ of\ the\ bank}{Total\ assets\ of\ the\ bank}$$

This ratio indicates the capitalization ratio of bank i at the end of each year t. It indicates the financial strength and viability of the banks in terms of capital over assets like investments and loans (Sutrisno, 2016). The higher this ratio is, the lower becomes the financial risk for Islamic banks.

3.2.2.5. Cost efficiency. As a measure of Islamic banks' efficiency, we retain the cost-to-income ratio. This ratio is measured, for bank i at the end of each year t, as follows:

$$EFF_{it} = \frac{\text{Cost of the bank}}{\text{Net Income of the bank}}$$

This efficiency measure is widely used in the literature on bank performance (Bahrini, 2017; Belkhaoui et al., 2014). In effect, this ratio combines the ability to generate income to the expenses (cost) incurred in generating such income.

3.3. Modeling: The reduced form of the research model

The structural form of this research model presents the nature of causal relationships established between Islamic bank profitability and its determinants (Figure 1). According to this structural form, bank financing modes have a direct and indirect effect on profitability. The indirect effect is realized through the variables credit risk, capitalization and cost-efficiency. On the other hand, all these variables can directly affect bank profitability. In order to assess the effects of different variables, the structural form of the model should be transformed in a reduced form. Hence, we specify the following system of regression equations:

$$\pi_{it} = \alpha_1 + \beta_1 PSP_{it} + \beta_2 PMP_{it} + \beta_3 CRISK_{it} + \beta_4 CAP_{it} + \beta_5 EFF_{it} + \sum_{k=1}^{K} \delta_k X_{it}^k + \sum_{l=1}^{L} \theta_l X_t^l + \epsilon_{it} \quad (1)$$

$$CRISK_{it} = \alpha_2 + \beta_6 PSP_{it} + \beta_7 PMP_{it} + \sum_{k=1}^{K} \delta_k X_{it}^k + \sum_{l=1}^{L} \theta_l X_t^l + \epsilon_{it} \quad (2)$$

$$CAP_{it} = \alpha_3 + \beta_8 PSP_{it} + \beta_9 PMP_{it} + \sum_{k=1}^{K} \delta_k X_{it}^k + \sum_{l=1}^{L} \theta_l X_t^l + \epsilon_{it} \quad (3)$$

$$EFF_{it} = \alpha_4 + \beta_{10} PSP_{it} + \beta_{11} PMP_{it} + \sum_{k=1}^{K} \delta_k X_{it}^k + \sum_{l=1}^{L} \theta_l X_t^l + \epsilon_{it} \quad (4)$$

With;

π_{it} = The profitability (ROA or ROE) of Islamic bank i at the end of the year t.

PSP_{it} = Financing based on profit-sharing principle as a percentage of total assets for each Islamic bank i, measured at the end of each year t.

PMP_{it} = Financing based on profit-margin principle as a percentage of total assets for each Islamic bank i, measured at the end of each year t.

$CRISK_{it}$ = The credit risk of Islamic bank i at the end of the year t.

CAP_{it} = The capitalization ratio of Islamic bank i at the end of the year t.

EFF_{it} = The cost efficiency of Islamic bank i at the end of the year t.

X^k_{it} = are K control variables related to the characteristics of bank i at the end of the year t.

X^l_t = are L Control variables related to macroeconomic conditions at the end of the year t.

ϵ_{it} = An error term.

The system of regression Equations (1)–(4) test simultaneously the different hypotheses about causal relationships between bank financing modes, credit risk, capitalization ratio, cost-efficiency, and bank profitability.

Equation (1) indicates that bank profitability is regressed on all explanatory variables. The estimated coefficients in this regression equation measure the direct effects of included explanatory variables. The incorporation of direct measures of bank risk and cost efficiency in the regression Equation (1) is an extension of previous studies that analyzed the relationship between financing modes and the profitability of Islamic banks.

Equations (2)–(4) together allow estimation of the indirect effect of financing modes on Islamic bank profitability.

The total effect of financing strategies variables (PSP and PMP) is given by the sum of the direct and indirect effect.

3.4. Estimation procedure of the model

The main objective of our study is to examine the influence of Islamic financing modes (PSP and PMP), credit risk, capitalization ratio, and cost-efficiency on the profitability of Islamic banks. The total effect of each explanatory variable is evaluated empirically by the technique of path analysis. This technique, called second-generation approach, is most appropriate for the estimation of a causal model where direct and indirect effects are expected (Anderson & Sundaresan, 2000; Verbrugge & Jahera, 1981). The path analysis technique deals specifically with quantitative variables (Kendall & O'Muircheartaigh, 1977).

4. Results and discussion

4.1. Descriptive statistics of data variables

Table 2 presents the average, standard deviation, maximum, and minimum values of all variables used in this research.

It is noted that the profitability variable, measured by return on assets(ROA), has a mean value of 2.51% and a deviation of 1.9%. This profitability measure reaches a maximum value of 9.12 % and a minimum of −11.11%. The low variability of profitability may reflect that Islamic banks in GCC countries maintain a conservative policy towards participation in financing high-risk investments. Therefore, the average of credit risks (CRISK), measured by the ratio of nonperforming financing, is 8.03%. This means that Islamic banks in GCC countries have 8.03%as default financing from their total Islamic investments, where the maximum is 14%. Hence, this credit risk level is relatively low.

The mean value of the capitalization ratio is about 12.5%, with a standard deviation of 14.89%. This indicates that Islamic banks in GCC countries are relatively highly capitalized. Indeed, their capitalized level is greater than the regulatory capital ratio required for conventional banks (8%).

Concerning finance mode, profit-loss sharing financing (Mudharabah and Musharakah) has a mean value of 28.6% of total Islamic financing with a standard deviation of 6.13%. This indicates that Mudharabah and Musharakah contracts have relatively low participation in the context of Islamic banks financing in GCC countries. Financing based on profit- margin (Murabahah) has a mean value of 68.14% of total Islamic financing with a standard deviation of 3.81%. This ratio is relatively high compared with profit-loss sharing financing. In addition, the use of Murabahah financing reaches a maximum of 99.67% for some Islamic banks (see Table 2). Further analysis of the financing modes during the study period (not shown in Table 2) shows that in some countries, like Saudi Arabia and UAE, Murabahah constitutes more than 90 percent of total financing. Leasing (or Ijarah) is the second most used mode in Bahrain, Oman, Kuwait, and Qatar. Istisna is the third most used mode in GCC region countries. Salam is only used in a significant amount in UAE and Saudi Arabia. This descriptive analysis means that Islamic banks in GCC countries prefer to invest their funds based on profit-margin(Murabahah) rather than profit-loss sharing based financing. This is due to the high profitability and the low degree of risk for Murabahah financing.

Table 2. Statistic Descriptive of the research variables

(All values are in %)	Mean	Median	Maximum	Minimum	Std. Dev.
Panel: Entire Sample (385 Observations)					
Return on Assets	2.518	2.465	9.124	−11.113	1.906872
Return on Equity	6.718	4.389	16.357	−14.720	19.683481
Credit Risk	8.039	6.845	14.057	2.123	21.126409
Capitalization	12.505	11.682	10.113	13.724	14.892378
Efficiency	0.886	0.748	0.967	0.629	0.168501
Profit sharing Financing	28.657	2.413	41.073	0.362	6.135576
Profit margin Financing	68.142	69.186	99.678	13.835	3.819676

Source: Constructed by Author Using Data from Bank Scope.

4.2. Estimation of the reduced model

Beforeestimatingour reduced-formmodel, wecheckfortheexistenceofthemulticollinearityproblem.

Table 3 shows the Pearson correlation coefficients between the independent variables taken in pairs. It is clear that these correlation coefficients are, on the whole, relatively weak and statistically insignificant with a threshold of 10%. Indeed, according to Gujarati (2003), a multicollinearity problem can be declared when the Pearson correlation coefficients between the independent variables exceed 0.8.

To check again the absence of the multicollinearity problem, we determine the VIF values as they appear in Table 4. These VIF values range between 1.54 and 3. Thus, they are far below the critical value of 10 as pointed by several authors (Neter et al., 1990). In these conditions, we can point out that correlations between the independent variables in our reduced-form model should not create multicollinearity biases.

The multiple regression analysis would be used to estimate our reduced-form model. According to Zellner and Huang (1962), for a recursive model (uni-directional), the path coefficients (estimates)are determined by the Seemingly Unrelated Regression (SUR) technique. In fact, (SUR) technique allows for a variable to be both independent and dependent, which has particular relevance to path analysis.

First, we estimated the original form of our research model (Figure 1). This form takes into account all the causal relationships between Islamic bank profitability and all explanatory variables. It is called “full model” i.e. “saturated” or “flexible model”.

Note that the purpose of this estimation is to identify the causal relationships in the initial research model that are not statistically significant. These non-significant relationships will be dropped from our originally developed model. Accordingly, the research model should be

adjusted to real data by eliminating irrelevant variables (non-significant). Thus, by adopting the approach of Verbrugge and Jahera (1981), each endogenous variable is regressed on all explanatory variables that precede it in the conceptual model. We assume that the coefficients statistically insignificant at the 10% are null and removed from the fitted model.

The estimation results of the system of regression Equations (1)–(4) using the method of "Seemingly Unrelated Regression" (SUR) are presented in Table 5.

Examining the estimation of the results of this "full model", we would note that financing based on profit margin principle variable (PMP) influences directly and significantly the Islamic bank profitability (ROA). It also affects indirectly bank profitability. This indirect effect is realized through the variables capitalization (CAP) and efficiency (EFF). The variable (PMP) has no direct effect on credit risk (CRISK). On the other hand, the financing based on the profit-loss sharing principle (PSP) has no direct effect on ROA but has an indirect effect through (CRISK)and (CAP)variables. We note also that the variables (CAP), (CRISK) and (EFF) affect directly and significantly the profitability (ROA).

Table 3 Pearson Correlation Matrix

	Variable	1	2	3	4	5	6	7	8	9	10	11
1	Return on Assets	1.0000										
2	Return on Equity	0.6912 *	1.0000									
3	Profit sharing Financing	0.0375	0.1051	1.0000								
4	Profit margin Financing	0.3982 *	0.1273	0.0337	1.0000							
5	Capitalization	0.4984 *	−0.0027	−0.3534 *	0.3970	1.0000						
6	Credit Risk	−0.3799 *	−0.2545 **	0.3721 *	−0.2333 *	−0.2461 *	1.0000					
7	Efficiency	0.1705 *	0.3303 *	0.0270	0.2177 *	−0.0237	−0.0505	1.0000				
8	Bank Size	0.1139 *	0.1497	0.1342 *	−0.2967	−0.1706 *	0.0180	0.0977	1.0000			
9	Gross Domestic Products Growth	0.0127	0.3805 *	0.3363*	0.2962 *	−0.4649 *	−0.1295 *	0.1072	0.1040	1.0000		
10	Inflation	0.0474	−0.0725	0.1563 *	0.2290 *	0.0570	−0.0263	−0.0037	0.1871 *	−0.1246	1.0000	
11	Interest Rate	0.2138 *	−0.0565	0.3910 *	−0.1366	−0.2261 *	0.4340*	0.0241	−0.3233 *	−0.4138 *	0.1320 *	1.0000

*The correlation is significant at 1%.

Table 4. The estimated values of the Variance—Inflation Factor (VIF)

Variables	PSP	PMP	CAP	CRISK	EFF
VIF	2.25	3.78	3.16	1.54	1.86

For each of the independent variables, the VIF indicator is calculated as follow:

$$\text{VIF} = \frac{1}{1 - R^2}$$

R^2; represents the coefficient of determination obtained by regressing each independent variable on all the other variables

Note: PSP: Profit sharing Financing; PMP: Profit margin Financing; CRISK: Credit Risk; CAP: Capitalization; EFF: Efficiency.

Table 5. Estimation of the "full model" using the method of "Seemingly Unrelated Regression Estimation" (SURE)

	(1)	**(2)**	**(3)**	**(4)**
Dependent variables	ROA	CAP	CRISK	EFF
Financing modes variables				
Profit sharing Financing	−0.0167	0.1201***	1.9762***	0.0126
PSP	(−0.79)	(4.77)	(7.94)	(1.09)
Profit margin Financing	1.0076***	0.8589**	0.0089	0.6931***
PMP	(0.79)	(4.77)	(7.94)	(1.09)
Management behavior variables				
Credit Risk	−1.0534***	-	-	-
CRISK	(−5.983)			
Capitalization	0.9845***	-	-	-
CAP	(5.96)			
Efficiency	2.1278***	-	-	-
EFF	(7.55)			
Control Variables				
Bank Size	0.5376**	0.3137**	0.1076	0.7946***
SIZE	(3.57)	(2.15)	(0.52)	(10.27)
Gross Domestic Products Growth	0.1764***	−0.1387***	−0.9345***	0.0535***
GDP	(4.18)	(−4.19)	(−5.16)	(5.48)
Inflation	−0.0105	0.0178	−0.0612**	0.0613
INF	(−0.14)	(1.11)	(−2.90)	(0.62)
Interest rate	0.1423**	−0.0956**	0.8912**	0.0018
INTR	(3.92)	(−2.18)	(2.34)	(0.43)
Number of observations	385	385	385	385
R-squared	0.7885	0.7241	0.8061	0.7685
chi2	619.83	967.32	1415.78	1456.89
Prob(chi2)	0.000	0.000	0.000	0.000

*, ** and *** Indicate that the coefficient is significant with a confidence level of 90%, 95% and 99% respectively.

To adjust the initial conceptual model "full model", we have modified it, by eliminating the direct causal relationships which are statistically insignificant. Hence, we obtain the "reduced model". This "reduced model" takes into account only the causal relationships which are statistically significant at the 10% threshold.

Table 6. The estimation results of the "reduced model" using the method of "Seemingly Unrelated Regression Estimation" (SURE)

	(1)	(2)	(3)	(4)
Dependent variables	ROA	CAP	CRISK	EFF
Financing modes variables				
Profit sharing Financing	-	-0.0371**	1.4550***	-
PSP		(−4.77)	(6.84)	
Profit margin Financing	0.6941***	0.5892**	-	0.8469**
PMP	(7.18)	(4.37)		(3.25)
Management behavior variables				
Credit Risk	−0.2684***	-	-	-
CRISK	(-7.23)			
Capitalization	0.7563**	-	-	-
CAP	(1.96)			
Efficiency	1.8153***	-	-	-
EFF	(6.55)			
Control Variables				
Bank Size	0.2204**	0.4136***	− 0.1276	0.9834***
SIZE	(2.50)	(5.85)	(−0.75)	(10.17)
Gross Domestic Products Growth	0.3784***	−0.2843*	−1.6523***	0.2389***
GDP	(4.78)	(−3.76)	(−8.16)	(7.46)
Inflation	−0.0119	0.0178	−0.1012*	0.1213
INF	(−0.17)	(0.15)	(−1.93)	(1.42)
Interest Rate	0.3514*	−0.1502**	0.6672*	0.0458
INTR	(1.84)	(−3.15)	(2.34)	(0.71)
Number of observations	385	385	385	385
R-squared	0.7638	0.6451	0.8136	0.7956
chi2	1534.23	687.02	9654.87	7959.64
Prob(chi2)	0.000	0.000	0.000	0.000

*, ** and *** Indicate that the coefficient is significant with a confidence level of 90%, 95% and 99% respectively.

In the second stage, we re-estimate this "reduced model". The estimation results of the "reduced model" using the method of "Seemingly Unrelated Regression" (SUR) are presented in Table 6.

Figure 2 shows the results of estimating the "reduced model". Overall, the results obtained are in line with our expectations and support the causal relationships proposed in the development of our conceptual model for Islamic banks profitability

4.3. Testing the reduced model

Testing the "reduced model" involves comparing how well it fits the data when compared to the "full model". For this purpose, we use a set of criteria (indices) of adjustment and parsimony. More precisely, we retain the following 6 indices; Chi-Square test ($\chi 2$), GFI, AGFI,

RMSR, NFI, CFI. The estimated values of these indices for the "full model" and "reduced model" are presented in Table 7.

Using the Jöreskog and Goldberger (1975) approach, the results presented in Table 7 indicate that the degree of adjustment to real data and parsimony increase gradually from the initial model "full model" to the "reduced model".

A (χ2) of the order of 256.64 (p = 0.83) indicates a good fit of the "reduced model" to the real data. The increase in the estimated values of the indices GFI and AGFI implies that the specification of the "reduced model" is better compared to the "full model". Indeed, the estimated values of GFI (0.97) and AGFI (0.94) are well above the critical values (0.90).

Figure 2. Reduced model: Causal relationships between financing modes, Risk, Efficiency and Bank Profitability.

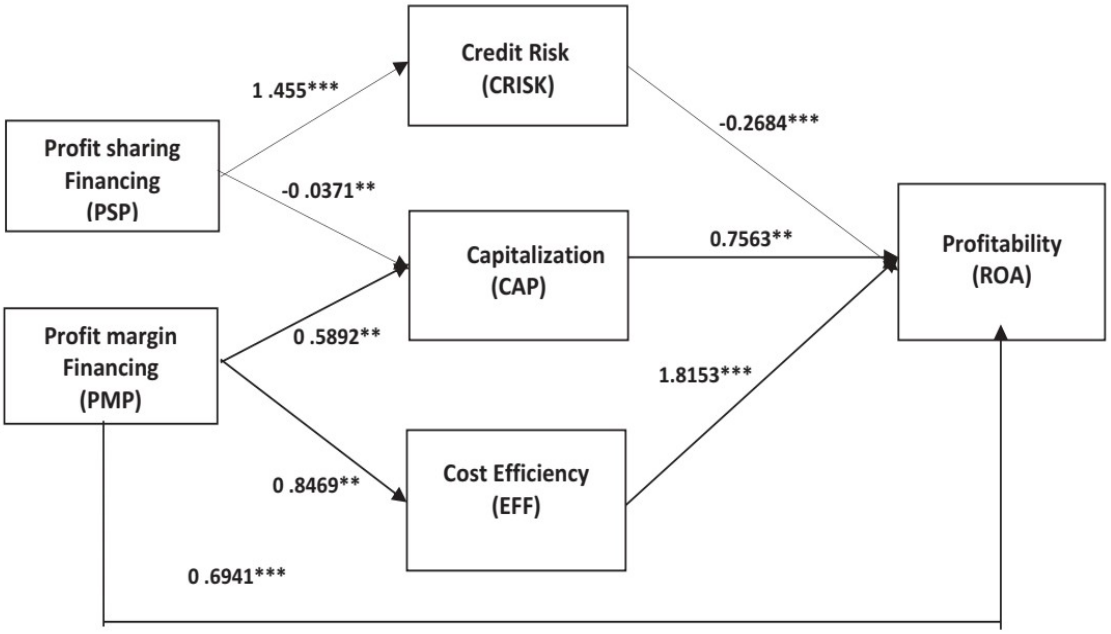


Table 7. Estimated values of fits indices for the "full model" and "reduced model"

Adjustment indicators	Key values	Full model	Reduced model
Chi-Deux (χ^2)	the lowest	284.17	256.64
GFI	≥ 0.9	0.86	0.97
AGFI	≥ 0.9	0.79	0.94
PNNI	≥ 0.95	0.85	0.96
RMR to SRMR	≤ 0.08	0.18 and 0.54	0.03 and 0.01
NFI	≥ 0.9	0.88	0.93
CFI	≥ 0.9	0.84	0.95

Again, the estimated values for the indices RMR and SRMR (0.03 and 0.01) are, respectively, well below the critical value (0.05). This indicates that the "reduced model" operates with low measurement errors. Thus, analyzing the estimated values of the fit indices, we can conclude that the "reduced model" fits better the data, and is preferable to the initial model "full model". Our analysis below is based on the estimated results of the "reduced model".

4.4. Effect decomposition

The key contribution of path analysis technique is that estimated path coefficients may be used to decompose the correlation between the different variables into two components representing the direct and indirect effect. This is based on the rule that in a linear system, the total effect of variable x on variable y is the sum of the values of all the paths from x to y.

The regression Equation (1) expresses the direct effects of the set of explanatory variables on bank profitability (dependent variable). More precisely, the coefficients$\beta 1$, $\beta 2$, $\beta 3$, $\beta 4$, and $\beta 5$ represent respectively the direct effect of the financing modes variables (PSP and PMP), credit risk (CRISK), capitalization (CAP) and efficiency (EFF).

The indirect effect occurs when the relationship between two variables is mediated by one or more variables. Considering "profitability" as the dependent variable in the model above, and considering "PSP" as the independent variable, the indirect effects are calculated by multiplying the path coefficients for each path from PSP to profitability. The same method is used to measure the indirect effect of the second independent variable (PMP).

The results of the decomposition of the total effect of causal relationships into direct and indirect effects are presented in Table 8.

4.5. Analyzing direct effects

4.5.1. Impact of financing modes on Islamic bank profitability

Financing based on profit-margin (PMP) has a positive and significant direct effect on the profitability of Islamic banks. Hence, the hypothesis concerning a positive direct relationship between financing based on profit-margin (Murabahah) and profitability is totally confirmed for Islamic banks in GCC countries. These results are consistent with several previous studies (Abusharbeh, 2014). These studies found that financing based Murabahah contract allows banks to realize large profits in the form of margin, due to relatively high asset prices (Peter, 1999).

Our study findings revealed also that financing based on profit-loss sharing (Mudharabah and Musharakah) does not have a direct influence on the profitability of Islamic banks in GCC countries. This indicates that higher levels of Mudharabah and Musharakah financing do not stimulate the profitability of Islamic banks. Our results disagree with some prior studies such as (Kuppusamy, 2010). On the other hand, they are in line with those of the Sutrisno (2016) study.

4.5.2. Impact of financing modes on Islamic bank risk

The results of our empirical study (see Figure 2) indicate that profit-loss sharing financing (Mudharabah and Musharakah) has a positive and significant direct effect on the credit risk of

Islamic banks in GCC countries, as measured by nonperforming loans. Its direct effect on the capitalization ratio is negative and statistically significant, but it is relatively low compared to that on credit risk (0.0371 compared to 1 .455). Hence, the Mudharabah and Musharakah contracts provide a lower quality of financing. These results confirm our research hypotheses, and are consistent with several previous studies(Abusharbeh, 2014; Shajari & Shajari, 2010; Skully et al., 2009). According to these authors, inherent credit risk for the profit-loss sharing financing (Mudharabah and Musharakah) is associated with moral hazard and asymmetric information, all of which are related to the integrity of customer mudharib.

In addition, the direct effect of Mudharabah and Musharakah financing on capitalization ratio is negative (Figure 2). It means that increasing the level of Mudharabah and Musharakah financing decreases the capitalization ratio of Islamic banks in GCC countries. These results may be due to capital increases in another area of Islamic banks like Murabahah financing or other investment activity (capital market, money market, etc.).

Table 8. Decomposition of the total effect into direct and indirect effects

Causal Relationship « Path »	Direct Effect	Indirect Effect	Total Effect
PSP ⟶ (CRSK)	1.4550	0.0000	1.4550
PSP ⟶ (CAP)	-0.0371	0.0000	-0.0371
PMP ⟶ (CAP)	0.5892	0.0000	0.5892
PMP ⟶ (EFF)	0.8469	0.0000	0.8469
CRISK ⟶ Profitability	-0.2684	0.0000	-0.2684
CAP ⟶ Profitability	0.7563	0.0000	0.7563
EFF ⟶ Profitability	1.8150	0.0000	1.8150
PSP ⟶ Profitability	0.0000	-0.4185	-0.4185
PMP ⟶ Profitability	0.6941	1.7054	2.4000

Note: PSP: Profit sharing Financing; PMP: Profit margin Financing; CRISK: Credit Risk. CAP: Capitalization; EFF: Efficiency

On the other hand, our empirical results show that Murabahah financing does not affect Islamic banks credit risk. But that the direct effect of this financing mode on capitalization ratio is positive and statistically significant. These results indicate that profit-margin financing (Murabahah) reduces economic and financial risk for Islamic banks, when compared with other financing modes (Mudharabah and Musharakah). These results are consistent with several previous studies (Farooq & Ahmed, 2013). This causes Islamic banks in GCC countries to prefer debt financing (Murabahah) in order to ensure a high degree of liquidity and lower risk projects.

4.5.3. Impact of financing strategies on Islamic bank efficiency

Based on the result presented in Figure 2 above, the cost efficiency of Islamic banks is not affected directly by profit-loss sharing financing (Mudharabah and Musharakah). On the other

hand, the direct effect of Murabahah financing on bank efficiency is positive and statistically significant (+0.8469). These results confirm our research hypotheses formulated above. They are consistent with several previous studies(Othman et al., 2015), who explained these results by the presence of problems of asymmetry of information and moral hazard.

4.5.4. Impact of risk taking on Islamic bank profitability

Figure 2 show that credit risk has a negative direct effect on Islamic bank profitability. This effect is statistically significant at the 5% level, suggesting that the hypothesis of a negative relationship between credit risk level and profitability is strongly confirmed. This inverse relationship implies that increasing credit risk leads to a decrease in the bank's profit. It should be noted that excessive credit risk-taking, and thus the deterioration in the quality of banks' assets, is exacerbated by a financing strategy based on profit-loss sharing (see Figure 2). The same results have been shown by several researchers (Ramadan et al., 2011).

Otherwise, the results shown in Figure 2 indicate that the direct effect of capitalization ratio on profitability is positive and statistically significant at the 1% level. This finding supports our hypothesis about a positive relationship between capitalization ratio and Islamic banks profitability. These results are consistent with many previous studies. According to Zeitun (2012), the well-capitalized bank faces lower expected bankruptcy costs and shows profit later.

4.5.5. Impact of cost efficiency on Islamic bank profitability

Estimated results in Figure 2 show that the direct effect of the efficiency variable (EFF) on bank profitability is positive and statistically significant at 1% level. These results confirm the research hypothesis of a positive relationship between cost efficiency and Islamic bank profitability. Hence, expenses management also appears to be one of the important determinants of Islamic bank's profitability. Several previous studies have yielded the same results (Yao et al., 2018).

4.6. Analyzing the total effects of financing modes on Islamic bank profitability

The estimated results in Table 8 indicate that profit-loss sharing based financing (Mudharabah and Musharakah) has a negative total effect on bank profitability. This total effect has as its origin an indirect effect only, since the estimated direct effect is statistically insignificant. The indirect effect is realized through the risk variables. In other words, Islamic banks in GCC countries have not taken any advantage of the Mudharabah and Murabahah financing provided. Our results are partially supported by Sutrisno (2016) finding that Mudharabah and Musharakah financing has a negative influence on the performance of Islamic bank in Indonesia, though it is not significant.

On the other hand, Table 8 shows that profit-margin based financing (Murabahah) has a positive total effect on Islamic bank profitability. The total effect is statistically high (+2.4) and is given by the sum of the direct and indirect effects. The indirect effect is manifested through capitalization ratio and efficiency variables. More precisely, the granting of Murabahah financing

increases the profitability of Islamic banks directly and indirectly, through the improvement of both the capitalization ratio and cost-efficiency. Our results may well explain the dominance of Murabahah financing, for Islamic banks in GCC countries, during our study period (see Table 2). Also, Al Zyoud et al. (2013) have suggested that Murabahah financing is the most efficiently practiced Islamic finance mode among other involved in their study (mudarabah and Musharakah).

5. Conclusion and implication

The fundamental purpose of this research was to develop and test a conceptual model that simultaneously links financing modes, risk, efficiency and profitability of Islamic banks. The development of our conceptual model, as well as the research hypotheses, is based on a critical analysis of a rich and diverse literature review. The structure of our developed model indicates that financing modes could affect the Islamic banks profitability directly and indirectly. The indirect effect is realized through the variables risk and cost-efficiency.

This conceptual model was estimated using the path analysis technique. The estimated results conclude that higher level of participation in Mudharabah and Musharakah financing will generate high credit risk (bad financing). Thereafter, the increase of credit risk reduces the profits of banks.

Our estimated results show also that Murabahah financing is largely beneficial for Islamic banks in GCC countries. Again, this benefit can be identified at more than one level. Indeed, Murabahah financing increases directly the profitability and improves simultaneously the capitalization ratio and the cost efficiency for Islamic banks. Hence, Murabahah financing may improve directly and indirectly the performance of Islamic banks.

The results of our empirical study have major implications for banks, managers, and regulators. For managers, they must pay more attention to the role of cost efficiency and risk-taking. Indeed, our results allowed highlighting the importance of these variables in explaining Islamic banks profitability. Not only because these variables directly affect profitability, but they also have a major influence on the relationship between financing modes and profitability. For banks, to benefit the economy and their profitability they are encouraged to provide more financing based on profit-margin, particularly Murabahah contracts. For regulators, the current regulatory policies of Islamic banking practices must be subject to some revisions. Indeed, our empirical results show that Islamic banks in GCC countries are increasingly oriented towards the use of financing based on profit-margin (Murabahah). Meanwhile, Mudharabah and Musharakah participation are relatively very low. In fact, Murabahah financing enables Islamic banks to significantly improve their performance and be able to compete with conventional banks. However, the use of Mudharabah and Musharakah does not give them any benefit in terms of profit but rather amplifies their risk (credit risk). Thus, the regulatory authorities must implement

regulatory policies that encourage Islamic banks in GCC countries to comply with Islamic Sharia principles. That is to say, based on the principle of participation (sharing) in profit and loss.

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Appendix I

This appendix provides a background to the financing modes of Islamic banks since they differ from conventional banks. The first objective of a firm is to maximize its profits and the main income of banks, including Islamic banks, comes from financing.

The fundamental principle of Islamic finance is that money itself is without intrinsic value. In Islam, interest is considered as Riba and is forbidden, meaning that making money from money is prohibited. Islamic finance is based on the philosophy of trading, money must be used in legitimate and justifiable trade and investment in assets. The principle of Islamic finance means

that any profits relating to the trading are shared between the partner providing the capital (financing partner or Rab al-Mal) and the partner providing the expertise (working partner). As a result, Islamic banks provide finance in two main modes. The first is based on the principle of participation in profit and loss, i.e. profit-loss sharing (PLS). The second financing mode is based on the profit- margin.

The financing based on the PLS paradigm is classified into two equity-financing practices, which are Mudharabah and Musharakah.Mudharabah contract is a form of partnership (Labor-capital Partnership), whereaninvestor“Rabal-Mal”providesthefinancialcapitalatanentrepreneur“Mudharib”thatprovides human capitaland expertise (Working Partner). The profits generated areshared between two parties on an agreed basis in advance. In this mode it is the investor (bank) that ensures the integrity of loss, but the entrepreneur loses only his effort and remuneration (M. M. Khan et al., 2008). Hence, it does not guarantee any fixed earnings for an Islamic bank, as in the case of conventional banking.

Musharakah contract (or Capital Partnership) is a form of “association”. In other words, Musharakah is a transaction in which there is more than a single contributor of funds. So, two or more partners are investing together in a project and share profits and loss based on capital. The nature of this operation is ultimately a kind of a “joint venture”. Indeed, in Musharakah, a bank and an entrepreneur jointly contribute capital and manage a business project.

The other major category of financing is based on profit-margin, there are several forms in this group; Murabahah, Ijarah, Salam and Istisna.

Murabahah financing is based on a mark-up (or cost plus) principle, in which a bank is authorized to buy goods and resell them to the customer at a pre-determined price that includes the original cost plus a negotiated profit-margin. This sale contract is controversial among Muslim scholars since some of them argue that there is not so much difference between interest-earning and mark-up profit. However, the counter arguments indicate that there are some differences between them since for Murabahah transaction, the acts of buying and selling do really happen. Thereby, Murabahah is theoretically a form of trade financing. Additionally, the bank is facing the risk of holding the material which is accepted as the legitimacy of asking mark-up profit.

Ijarah (or Leasing) is defined as the Islamic lease agreement. InIjarah financing, the bank purchases equipment (tangible asset) targeted by a client and then leases it back to him for a specified rental over a specific period. In fact, the agreements concerning the period of the lease, as well as the basis for rental are set and specified in advance. Generally, the Islamic banks are currently practicing the Ijarah financing under the promise from the client to buy the equipment (tangible asset) at the end of the lease period, at a pre-agreed price.

Salam contract is defined as advance payment sale. In fact, Salam is really a forward agreement where delivery occurs at a future date in exchange for spot payment of the price. (Hafnida, Maamor, & Abdullah, 2015) .

Istisna is an Islamic finance technique defined as a contractual agreement for manufacturing goods. This technique allows cash payment in advance and future delivery or future payment and future delivery of the goods manufactured (HGB, 2017).