

# AN OVERVIEW OF EFFICIENCY AND PROFITABILITY IN ISLAMIC BANKING: A COMPARATIVE STUDY BETWEEN ISLAMIC BANKING AND CONVENTIONAL BANKING

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*Received: 21 May 2021  
Accepted: 10 August 2021  
Online first: 13 March 2022*

## ABSTRACT

*Islamic banks are similar to conventional banks, but differ in some practices, financial contracts, and transactions. The functions and transactions of Islamic Banking and Finance (IBF) are based on Sharia principles, which involve risk sharing. Therefore, there is a significant difference in the applications of lending and investment between Islamic and conventional banks. This review paper aims to map IBF- measurement that related to efficiency and profitability issues, by presenting briefly the nature of IBF, including the prohibition of interest and gambling, with the definition of IBF instruments. It reviews the most valuable existing empirical literature that investigated the efficiency and profitability of Islamic banking, which shows that the business model and techniques for measuring performance in Islamic banking does not differ significantly from that of conventional banking. This paper also discusses the critical terms in the financial methods that are used in IBF studies. It is found that the objectives of profit maximisation and cost minimisation are not vital for IBF and the performance of Islamic banks should be evaluated with indication of the level of promoting socio-economic development. Our finding concludes that, the social objectives of Islamic banks can be achieved after adapting new structures, not only for Islamic banks, but also for central banks, and*



banking regulations.

**Keywords:** *Islamic banking, Islamic finance, efficiency, profitability, financial ratios*

## **AN INTRODUCTION TO ISLAMIC BANKING AND FINANCE**

### **IBF Development**

The development of Islamic banking has established in the four decades. The first experience of Islamic banks was in Egypt in 1963 and 1971 with the establishment of Mith Gharm bank and Nasser Social bank, respectively, the aim of the latter was financing needy people and small businesses. This initial experience drew attentions of policy makers and capitalists, where culminated into launch of Islamic Development Banks (IDB) in 1975, which is the most substantial event in the development of Islamic banking. Since 1970s until 1990s several Islamic financial institutions were established in many Muslim countries. Also in 1990s, the International Monetary Fund (IMF) and the World Bank recognised IBF through publishing working papers according to their impact. In addition, three Muslim countries, Iran, Pakistan and Sudan, replaced gradually interest rates from their entire banking system with Islamic finance models and products (Iqbal & Molyneux, 2005). According to The Banker, since 2006 until 2020 Islamic finance industry has recorded more than 10% a compound annual growth rate worldwide, with \$10bn assets in 47 financial institutions (The Banker, 2020).

### **The Framework of IBF**

The fundamentals of Islamic financial transactions aim to evade Sharia-prohibited transactions involving *riba* (*usury*/ interest), *gharar* (the lack of certainty or control in a contract), *misyar* (games of chance) and *qimar* (gambling). Iqbal and Mirakhor (2007) state that the most significant issue in IBF is the prohibition of *riba*, followed by *gharar*, however the other elements have not been discussed as widely as these two. To clarify the definition of *riba*, as a verb, it means to get more than what is given or

to be excess in a loan, which is paid back to a lender by a borrower. The fundamental reason for the prohibition of *riba* in Islam is that charging interest is considered to be unfair, enriching the rich (capital lenders) at the expense of the poor (borrowers). However, it should be noted that the meaning of *riba* is not confined to interest on moneylending, as it also applies to other forms of exchange of goods (Iqbal & Molyneux, 2005; Ayub, 2007; Iqbal & Mirakhor, 2007). Sharia clarifies two types of *riba*: *riba al-fadl* and *riba al-nasiah*. *Riba al-fadl* can be defined as dealing with barter exchange of commodities (not goods with money), and it was prohibited since exchanging commodities could incur iniquitous differences in mismatched quantity and quality. *Riba al-nasiah* is based on dealing with money to get more money by previous arrangement, depending on the time and type of interest, characterised today by financial operations in conventional banks (Iqbal & Mirakhor, 2007).

The second significant prohibited component in IBF contracts is *gharar*, which is defined as uncertainty about future possession of the good or service that is provided by one party of a contract, or some features of the subject in the contract are unidentified to the other party (Iqbal & Mirakhor, 2007). In IBF transactions, one of the most vital contractual conditions is risk sharing, which means each party to a contract (especially the financier) must be informed and aware about the level of risk and any possibility of uncertainties that the project or venture might be faced.

## Products Offered by IBF

Islamic banks provide a variety of financial services and products, categorised into trade and investment, that constructed on equity participation, Profit-Loss Sharing (PLS) and risk sharing between banks and investor parties. In addition, IBF contracts can be divided into two groups: PLS modes, including *mudarabah* and *musharakah*; and Deferred Sale (DS) or fixed-income contracts, including *murabahah*, *salam*, *ijarah*, and *istisna* (Ayub, 2007). These contracts or modes are defined in context below.

*Mudarabah* (partnership and agreement on profit sharing) is partnership of capital and labour between two parties. The first party (*rab almal/* financier) provides the funds, and the second party manages and invests the funds on the behalf of the first party, with two conditions: a

specific time period and advanced agreement to share the profits according to specified portions at the end of that period. The second party (*mudarib/agent*) has to have prerequisite competence to undertake the transaction (e.g., substantial experience in financial markets and project management) (Hussien, 2004; Iqbal & Mirakhor, 2007).

*Musharakah* (equity partnership) is a type of PLS contract which refers to participation between two parties who combine either their capital or labour, to share the profits and losses, with reciprocal rights and liabilities (Iqbal & Mirakhor, 2007). In terms of IBF, according to Hussien (2004) and Toutounchian (2011), *musharakah* can be defined as a contract between an Islamic bank and a profitable company; the bank facilitates working capital. Furthermore, there is an example, namely the application of diminishing *musharakah*, whereby a financier and client contribute either in joint ownership of property or equipment, or the financier's portion is further divided into a certain number of units, and it is agreed that the client will progressively purchase the units of the financier within an agreed period, which increases the client's owned share until all the units of the financier are acquired by the client, who thus becomes the sole owner of the property (Kettell, 2010).

*Murabahah* (cost-plus-sale contract) can be described as a contract between a financier who purchases goods, and a client who applies for the former to acquire such goods due to lacking the capital to do so; consequently, both of them agree on a profit margin plus the cost to be paid by the client, deferred for a particular period of time. According to the Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI), *murabahah* is a pre-agreed profit contract indicating the sale of a product with mark-up on the cost of this product (Kettell, 2010). There are two types of *murabahah* sales: the first type is when a financial institution purchases the product and makes it available for sale to the client without any previous promise from the latter to purchase it. The second type is when the financial institution purchases the product required by the client from another party, to sell this product to the same client. Basically, this type is agreed with a promise that the client has to purchase the products from the financial institution. Along with the concept of *murabahah*, it is often utilised in IBF for mortgages and car purchasing.

*Salam* (sale with deferred delivery) is defined by Hussien (2004) and Toutounchian (2011) as an agreement with advanced payment on a specific product, between the Islamic bank who makes the agreed payment, and a client who receives the agreed payment and delivers the specified products to the bank at a particular future date.

*Ijarah* (leasing) is the utilising of *ijarah* contracts, categorised into two types. The first type is the most common contract that relays on usufructs, which means the right to enjoy the use of objects and properties for a certain period. The second type of *ijarah* contract intends to hire a person to perform specific services for an exact time of period with payment of a mutually agreed salary (Kettell, 2010).

*Istisna* (manufacturing) contract is an agreement between a client or buyer, who demands a project or equipment that requires be manufactured or constructed by a manufacturer, who is the second party of the agreement. Both parties have to agree on specified price and asset that intended to be manufactured (Iqbal & Mirakhor, 2007). In terms of IBF, in this type of contract the role of Islamic bank is that of an intermediary between a client who approaches the bank to finance a new project or building, and a manufacturer or a contractor who constructs the building. Therefore, the bank can earn profits from two parallel contracts: from the contractor making cash payments, and the client who makes deferred payments (Kettell, 2010). In addition, Hussien (2004) indicated that the practice of *istisna* contract is similar to the salam contract, as both of them are DS contracts.

## **Issue on IBF**

It should be noted that the aggregated PLS contracts that are operated in Islamic banks are quite small comparing with fixed-income contracts, owing to their high risky nature of PLS contracts. Islamic banks prefer to operate through fixed-income instruments as a substitute to credit and debt in conventional banks (Ayub, 2007; Ahmed, 2011). Most Islamic banks heavily relied on fixed-income financing, particularly *murabahah* (Alandejani & Asutay, 2017).

Investigating performance in financial institutions have attracted the interest of researchers, bank management, and public policy for the last

three decades. Shepherd (1979) described the efficiency as the maximum ratio between output and inputs. In addition, factors that determinant bank profitability are bank-level (internal) factors and macro-level (external) factors. Accounting ratios were the most commonly used index for evaluating bank efficiency and profitability. Since the mid-1990s, more sophisticated parametric and non-parametric methods and techniques have been implemented, as they have better assessment features (Coelli *et al.*, 2005).

The techniques for measuring Islamic banks performance are similar or almost the same to conventional banks. Therefore, this paper aims to map IBF- measurement that related to efficiency and profitability models, showing that the business model in Islamic banking does not differ significantly from that of conventional banking, indeed, the mainstream commercial banking industry is primarily geared toward profit maximisation. However, the objectives of profit maximisation and cost minimisation should not be crucial for Islamic banks, and the performance of Islamic banks should be assessed with indication of the level of promoting socio-economic development. Our finding suggesting that, to fulfil potential social aims, Islamic banks should adjust their structure, which applies not just to Islamic banks' responsibility, but also central banks, regulations, and political conditions; all these factors must be involved to obtain comprehensive measures of performance dimensions and to gauge the achievement of social objectives.

The remainder of this paper is organised as follows. Section 2 presents the literature that explored the performance, efficiency, and profitability. Section 3 provides empirical studies on efficiency and profitability of Islamic banking. Section 4 discusses the critical terms in the financial methods that are used in IBF studies, with shedding the light on Hasan's (2004) point of view. Finally, Section 5 concludes the paper.

### **Studying Performance, Efficiency, and Profitability**

Several studies discussed the conceptual definitions of performance, efficiency, and profitability. Exploring performance in financial institutions is of obvious interest to researchers, bank management, and public policy. Devine *et al.* (1985) were among the first researchers to consider performance measurement of an individual firm and industry perspectives.

In addition, they divided performance measures into profit, productivity, and indirect measures related to market structure, pricing, and investment rules. Productivity measures can be categorised according to levels of sequential activity, affecting the national economy, an industry, a firm, a factory, or a particular production process. Harker and Zenios (2000) considered performance more broadly as a host of financial indicators. Shepherd (1979) defined the efficiency as the maximum possible ratio between output and input variables. Efficiency reflects the maximum output for a given input of resources (Silberston, 1983).

From economies of scale and scope perspectives, large banks are likely to be more efficient. Altunbas and Molyneux (1996) and Girardone *et al.* (2004) stated that large banks conduct more flexible strategies in production and input-output processes, which improve ability to diversify assets and reduce risks, manifesting better management and increase efficiency. Wezel (2010) pointed out that scale efficiency measures a component of technical efficiency related with a bank's ability to produce at its best possible firm size. Scale efficiency represents the situation when the firm produces a certain level of output with a few extra inputs by assuming a constant return to scale.

Berger and Humphrey (1997) investigated 130 studies that applied frontier efficiency to sum up efficiency methods, and located five different kinds of econometrics and statistical methods that were utilised to examine efficiency in financial sector, including data envelopment analysis (DEA), and stochastic frontier analysis (SFA). Also, they indicated that efficiency measurements are different in the distributional assumptions involved with random error and inefficiency (Berger & Humphrey, 1997).

Nonparametric approaches include DEA method, which assume that there are no random errors and that is considered a drawback (Berger & Humphrey, 1997). Delis and Papanikolaou (2009) analysed bank efficiency by utilising a semi-parametric method based on two stages: (1) measuring the input and output variables derived from non-parametric (DEA) approach; and (2) linking the results acquired from the former stage with a series of variables that determine bank efficiency by employing a double bootstrapping process.

The parametric approaches used in the literature includes SFA models. Berger and Mester (2000) indicated that SFA models basically conducted through cost and profit functions, where cost concept signifies to cost minimising, and profit concept signifies to profit maximising. In contrast, the nonparametric approaches do not take into account cost and profit efficiency concepts; they merely consider technical inefficiency by utilising several inputs or providing only a few outputs.

Measuring profitability models were driven form profit maximisation function, which is a method of performance measurements. Shepherd (1979) defined profitability as a natural level of prosperity of the economic firm which is usually associated with profit rate. However, Devine *et al.* (1985) pointed out that profit is an unclear performance indicator from the private and social standpoints. From the perspective of a private business, a high rate of profit is an indication of satisfactory performance, but in terms of the social standpoint, this high rate of profit might indicate unacceptable performance.

Banking literature that aimed to explore profitability utilised profitability ratios, such as Return On Assets (ROA), Return On Equity (ROE) and Net Interest Margin (NIM) (Izhar and Asutay, 2007; Srairi, 2009; Petria *et al.*, 2015; Azad *et al.*, 2019). Factors that determinant bank profitability are categorised into internal and external. Internal or bank-specific factors are associated to financial firm management decisions and policy maker purposes, such as level of liquidity, provisioning policy, and capital adequacy. These factors are usually described by accounting measures, such as capital, overhead, and liquidity ratios, most studies utilise bank size to investigate economies or diseconomies of scale (Athanasoglou *et al.*, 2006). In addition, capital-assets and liquid assets ratios are utilised to measure bank risk. For instance, a high capital-assets ratio implies that transactions are operated very carefully, and as a consequence a bank cannot make high profits because the implicitly conservative investment approach limits access to more opportunities (Goddard *et al.*, 2004). External factors are industry-level or industry-specific, such as concentration ratio, market share, and macroeconomic variables (e.g., inflation, and income per capita). Furthermore, in terms of industry-level variables that are related to industrial structure, literature on bank profitability has examined the persistence of the profit paradigm and structure-conduct-performance (SCP) hypothesis.



Persistence of profit is identified as the performance for members of an industry to perform frequently over or under a benchmark on a constant basic, which can be selected via a performance criterion among the group, or by utilising specific information out of the group (Berger *et al.*, 2000). Secondly, the basic SCP paradigm affirms that market concentration, which is evaluated by concentration ratio, positively relates to performance that is identified by profits (Edwards *et al.*, 2006).

## **SURVEYING EMPIRICAL STUDIES ON EFFICIENCY AND PROFITABILITY IN IBF**

Studies of efficiency and profitability are generally focused on the conventional banking system (pertaining to interest rates). Therefore, the methods for measuring Islamic banking performance are similar to conventional banks. Traditionally, accounting ratios were the most commonly used index for evaluating bank efficiency, but more sophisticated methods like DEA and SFA have been increasingly implemented, as they have better assessment features. IBF research has concentrated mostly on theoretical perspectives, with analyses of empirical applications mainly considering descriptive statistics rather than statistical examination (Mokhtar *et al.*, 2007). Performance studies of IBF began in the 2000s, due to the increased proliferation and importance of IBF institutions globally, particularly in the Middle East and Southeast Asia.

### **Studies on Efficiency**

In terms of Malaysian IBF-related studies, Sufian (2006), Kamaruddin *et al.* (2008), and Hadi and Saad (2010) explored the efficiency of both full-fledged Islamic banks and Islamic windows in Malaysia by utilising DEA. Sufian (2006) indicated that data limitations may limit the precision and clarity of their explanation. Kamaruddin *et al.* (2008) covered a longer period (from 1998 to 2004), and concluded that Islamic banks have managed cost efficiency more than profit due to factors of management and economies of scale. Hadi and Saad's (2010) measurements of efficiency in Malaysian banks (applying DEA and the Malmquist Index (MI), found that the performance of domestic Islamic banks is outstandingly better than foreign banks; however, there is a greater number of foreign Islamic banks

than their domestic counterparts. Finally, the study suggests that Islamic banks need to use more advanced technology and client services to compete with conventional banks.

In terms of comparative studies, Mokhtar *et al.* (2007) evaluated and compared the cost efficiency of Islamic banks (including Islamic windows) with conventional banks in Malaysia, by utilising DEA and employing several factors, such as variables related to banks' characteristics, to illustrate the determinants of efficiency. The results showed that full-fledged Islamic banks were more efficient than the Islamic windows of conventional banks. On the other hand, IBFs are less efficient than conventional banks, and the Islamic windows of the local banks were less efficient than the Islamic windows of foreign banks. The regression of efficiency determinants reflects that all kinds of efficiency are positively related to bank size, bank age, and capital strength.

Hassan and Hussein (2003) estimated Islamic banks' efficiency by applying SFA and DEA methods, including Malmquist Productivity growth. The results reflected that efficiency and productivity were impaired by decreased level of technology in the banking sector and the political environment. However, they noted the importance of internal organisational issues, stating that Islamic banks need more efficient management and practices.

Hussein (2004) explored the profit efficiency of Islamic vs. conventional banking sectors in Bahrain, utilising SFA with eight Islamic and eight conventional banks. Overall, the findings implied that although many Islamic banks are small and function as venture capital operations, the level of profit efficiency in such banks is similar to conventional investment banks. Another study on Bahrain by Hassan *et al.* (2004) investigated banks' efficiency from 1998 to 2000, from the perspectives of 'overall cost efficiency', 'technical', 'pure technical', 'allocative', and 'scale efficiency'. They also evaluated productivity, by applying DEA. They found that all banks' efficiency levels increased, with the most notable efficiency being achieved by the most cost-efficient bank, Bahrain Islamic Bank, and two foreign firms. They concluded that the main causes of inefficiency in Bahrain's banking sector were 'technical' and 'pure technical' inefficiencies.

Utilising the financial ratio perspective to measure efficiency, Saleh and Zeitun (2007) evaluated the performance of the two largest Islamic banks in Jordan by applying several indicators related to efficiency and profitability. They found that the performance for both banks increased, and both banks contributed in financing significant projects in the Jordanian market. The study indicated that most Islamic bank transactions seem to focus on short-term rather than long-term investments.

A study on two Islamic banks in Pakistan by Siddiqui (2008) aimed to describe the risk of the Islamic finance contract, and investigated the performance of these banks relative to traditional commercial banks, given that both now offer a range of financial services and products. However, the study only covered two years (2003-2004). It utilised standard financial ratios of earnings and profitability capital adequacy, liquidity, and asset composition. The results showed that the studied banks represented a healthy level of performance with respect to returns in assets and equity.

Bashir (2001) investigated the performance of Islamic banks and the relationship between banks' performance and efficiency indicators in 14 Islamic banks in eight Middle Eastern countries. Nonetheless, the study used only financial ratios, divided into internal and external variables to estimate efficiency and profitability. The findings implied that the profitability ratios of Islamic banks are positively related to capital and loan ratios, which determine banks' performance. The results also showed that short-term funding plays a vital role in advancing banks' profit.

Al-Jarrah (2002) examined the efficiency of 82 banks operating in Bahrain, Egypt, Jordan, and Saudi Arabia, by applying SFA to measure cost and profit efficiencies. The author also used DEA to certify the efficiency results acquired from the SFA techniques, including some control and environmental variables (such as bank type, and dummy variables for controlling bank according to country location). The results concluded that Islamic banks appear to be the most cost- and profit-efficient, indicating that the improvements of Islamic banking experiences are able to contribute in advancing the performance of banking systems in Arabian countries. However, Hassan (2006) employed SFA and DEA to investigate cost, profit, and X-efficiency among 43 Islamic banks in 21 countries during the period 1995-2001, and the results presented that Islamic banks are less efficient than counterpart conventional banks.

Viverita and Skully (2007) examined technical efficiency and productivity growth of 21 Islamic banks in 13 countries from the Middle East, North Africa, and Asia over the period 1998-2002 by applying DEA. They concluded that the best technical efficiency improvements occurred in Indonesia, UAE, and the Middle East as a region. Asia was the best-performing region.

Mostafa (2007a, 2007b) measured efficiency by utilising DEA only for the year 2005 in two studies. The first study benchmarked top Arab banks separately, finding that, surprisingly, just eight banks were as efficient as the benchmark in Bahrain, Egypt, Saudi Arabia, Syria, and UAE. The second study of the top 50 GCC banks suggested that the performance of GCC banks requires significant progress. However, these studies were limited to only one year. It would be better for future researchers to employ efficiency method over a longer time period, and other efficiency methods need to be investigated and compared, such as SFA. Al-Muharrami (2007), Johnes *et al.* (2009), and El Moussawi and Obied (2011) also investigated efficiency by applying DEA, using different samples, and consequently arriving at different results.

Al-Muharrami (2007) examined conventional and Islamic banks only in one frontier, for a statistical reason. The findings showed that there was a negative change in efficiency during the studied period, and as technical efficiency decreased, as did total assets, deposits, and loans. Such decreases might be due to provisional impacts during the studied sample period. In contrast, Johnes *et al.* (2009) provided a comparative analysis of efficiency between Islamic and conventional banks. They concluded that: the financial ratios of Islamic banks appear to be less efficient overall, but are more revenue- and profit-efficient than conventional banks; the average efficiency of conventional banks is notably higher than Islamic banks; and Islamic banks are efficient in producing the maximum outputs from orderly inputs, but they are not very efficient in minimising costs. This might be because cost minimisation is not considered a main aim in Islamic banks. El Moussawi and Obied (2011) investigated the technical, allocative, and cost efficiency of Islamic banks. The results indicated that as technical and allocative efficiency decreased, cost efficiency was affected negatively, affirming the earlier findings of Johnes *et al.* (2009). They suggested that future research should apply parametric techniques to improve the investigation of GCC banking performance.

A study on the GCC region by Srairi (2010) investigated cost and alternative profit efficiency of conventional and Islamic banks by utilising SFA. Furthermore, he compared between countries and types of banks, and determined the relation between profit efficiency and cost inefficiency scores. The results concluded that, from a geographical evaluation perspective, Oman had the most efficient banks, while Kuwaiti banks were the least efficient. In terms of bank type, Islamic banks were found to be less cost- and profit-efficient than conventional banks, which the author attributed to several possible reasons, including that the asset sizes of Islamic banks are smaller than those of conventional banks (therefore they lose the advantages of scale economies), and Islamic banks operate at a lower level of risk, which is tied to lower profit efficiency. Ibrahim and Rizvi (2017) noted that larger Islamic banks are more efficient than smaller ones after accomplishing a specific threshold size, which means that bank size plays a vital role in Islamic banks performance and stability, as with conventional banks. Table 1 summarises selected empirical studies on IBF efficiency.

**Table 1: Summary of Selected Empirical Studies on Efficiency of IBF**

Study	No. of banks	Analysis variables and methods		Country/region
		Inputs	Outputs	
Hassan and Hussein (2003)	17	Deposits, fixed capital, labour	<i>Murabaha</i> , <i>mushraha</i> , off-balance items	Sudan
Mokhtar <i>et al.</i> (2007)	42	Deposits (including saving and <i>mudarabah</i> investment deposits and deposits from other banks), labour, expenses	Total earning assets (consisting of loans, dealing securities, investment securities, placements with other banks)	Malaysia
Hassan (2006)	43	Customer and short-term funds, labour, fixed capital	Loans, other earning assets, off-balance sheet items	21 countries
Sufian (2006)	18	Deposits, labour, fixed assets	Loans, income	Malaysia

Mostafa (2007a, 2007b)	85	Assets, capital	Net profit, rate on assets (ROA), rate on equity (ROE)	Selected Arab countries
Bader <i>et al.</i> (2008)	80	Total funds, labour, fixed assets	Loans, other earning assets, off-balance sheet items	21 countries
Johnes <i>et al.</i> (2009)	69	Deposits and short-term funding, fixed assets, expenses, equity	Loans, other earning assets	GCC countries
Akhtar (2010)	9	Lowest levels of interest expenses	Net interest revenue	Saudi Arabia
Srairi (2010)	71	Physical capital, labour, funds	Loans, other earning assets	GCC countries
El Moussawi and Obied (2011)	23	Deposits, physical capital or fixed assets, labour	Total earning assets, net commissions indicative of off-balance sheet activity	GCC
Alandejani and Asutay (2015)	54	Deposits, short-term funding, equity, operating expenses	Loans, other earning assets	GCC

### Studies on Profitability

This section describes the empirical studies exploring the profitability of Islamic banks, whether in a single country or a particular region. In terms of single country, Izhar and Asutay (2007) measured the profitability in *Bank Muamalat Indonesia* (BMI) over the period January 1996 - December 2001, applying bank characteristics and macroeconomic variables, including inflation. They found that financing practices have a significant impact on the profitability of BMI, and that short-term finance activities, such as *murabahah*, play an important role in Islamic banks. While Islamic banking operations can obtain a high level of revenue by *mudarabah*, that requires long-term investment.

Hassan and Bashir (2003) estimated the profitability of 43 Islamic banks from 21 countries, reflecting different levels of economic development and financial structure, over the period 1994-2001. They utilised several internal variables related to bank characteristics, and control for external factors. The results of this study concluded that capital adequacy and loan ratios have a significant affect in determining performance, and short-term funding increases the profits of Islamic banks.

In terms of a regional studies, Srairi (2009) explored internal and external variables that can determine conventional and Islamic banks' profitability in the GCC region from 1999 to 2006. The findings show that the profitability of Islamic banks is affected positively by financial risk (liabilities over total assets). Srairi (2009) suggested that the GCC banking sector should improve their practices and be a liberalising influence, to strengthen financial cooperation among GCC states. Future research should involve more variables that can determine banking profitability (such as business cycle). Furthermore, the short time period of the empirical study could distort the findings, especially in light of the financial crisis of 2008. Table 2 summarises selected empirical studies on IBF profitability.

**Table 2: Summary of Selected Empirical Studies on Profitability of IBF**

Study	No. of banks	Analysis variables and methods	Country/ region
<b>Utilised Variables</b>			
Bashir (2003)	14 Islamic banks	<ul style="list-style-type: none"> <li>• The dependent Variables: Ratios of profit before tax to total assets, net income total assets, and net income to total equity</li> <li>• The independent variables: Bank-level indicators, macro-level indicators, taxation indicators, and financial structure indicators</li> </ul>	Eight countries from Middle East
Izhar and Asutay (2007)	Monthly data of <i>Bank Muamalat Indonesia</i>	ROA an indicator to profitability, capital ratios, liabilities, expenses, loan and liquidity ratios	Indonesia

Srairi (2009)	48 conventional and 18 Islamic banks	Return on average assets (ROAA) indicated profitability. Internal bank-selected variables: capital adequacy, liquidity, credit risk, financial risk, operational efficiency, and bank size	GCC
Beck <i>et al.</i> (2013)	510 including 88 Islamic banks	Financial Indicators: <ol style="list-style-type: none"> <li>1. Business orientation (loan-deposit and non-deposit funding ratios)</li> <li>2. Bank efficiency (overhead cost and cost-income ratios)</li> <li>3. Assets quality (loss reserves, loan loss provisions and non-performing loans)</li> </ol>	22 countries
Trad <i>et al.</i> (2017)	78 Islamic banks	<ul style="list-style-type: none"> <li>• ROA and ROE indicators to profitability, Z-score to measure bankruptcy, total equity to net loans and impaired loans to gross loans ratios to measure credit risk</li> <li>• Control variables: bank-level variables include bank size, capitalisation, liquidity and asset quality, macro-level variables include real gross domestic product, inflation and exchange rates</li> </ul>	12 MENA countries
Azad <i>et al.</i> (2019)	1991 conventional banks and 608 Islamic banks	Focus on the relationship between loan to deposit ratio, fee and NIM as an indicator to profitability, with controlling the following variables: Lerner index, deposit to asset ratio, efficiency, operating cost, credit risk, risk aversion, log (total assets), non-interest income, opportunity cost, market volatility	20 countries



## **CRITICAL COMPARISON BETWEEN ISLAMIC BANKING AND CONVENTIONAL BANKING**

From the previous part it can be observed that although Islamic banks theoretically differ from conventional banks, particularly in the sense of the PLS paradigm, in practice there is no substantial difference between the two systems. For example, in the assets side of the Islamic bank balance sheet, an insignificant percentage of financing is based on PLS contracts (Chong & Liu 2009). The poor application of PLS contracts in Islamic banks could be attributed to several causes. First, PLS financing requires additional monitoring, which adds more costs to the financial institution. Second, from the borrower or entrepreneur side, PLS contracts are more associated with the lack of management and control, which makes those contracts more vulnerable to risk, thus increasing the hazard rate (Chong & Liu 2009; Alandejani & Asutay 2017).

In relation to applied methods presented in the previous section, IBFs (as with conventional banks) use several methods to evaluate performance efficiency and profitability, including financial ratios, and parametric and nonparametric tests; the question is which of these methods is more appropriate to estimate and address IBF performance, given that IBFs are purportedly different from conventional financial institutions due to their fundamental social objectives. To clarify the answer of this question, Hasan (2004) described the techniques and methods utilised in several studies in evaluating and investigating the efficiency of Islamic banking, and analysed whether the selected methods were appropriate given the intentions Islamic banking is purported to espouse. He criticised applying financial ratios to measure efficiency of IBF literature, noting the limitations in utilising mere ratios to evaluate bank efficiency, which might be deceptive, and not conducive to reaching the right conclusions. He also said this approach could be not good enough to elucidate long-run dynamic variables related to business and market developments. Secondly, according to parametric and nonparametric approaches Hasan (2004) indicated that DEA and SFA methods are widely employed to obtain two findings: to approximate efficiency scores by utilising production units or (decision making units); and to explore the correlation between (in) efficiency approximation and other factors, such as size, investment and profits. SFA is usually used to estimate cost efficiency (cost minimisation), and the translog cost function

is mostly specified to investigate banking sector efficiency. In addition, to estimate DMU cost efficiency, the maximisation likelihood approach is frequently utilised. Hasan (2004) analysed some econometric methods to evaluate efficiency by Majid *et al.* (2003), and Saaid *et al.* (2003).

Majid *et al.* (2003) investigated the cost efficiency of Malaysian Banking sector by applying translog cost function and exploiting panel data of 34 commercial banks in comparison of two Islamic banks over the period 1993-2000. The results reflected that there were no significant overall differences between the efficiency of Islamic and conventional banks. However, Hasan (2004) argued that the representation of only two Islamic banks in the study rendered the comparison with other selected and grouped banks problematic. He also criticised the use of the sum total cost of the Islamic banks' labour and capital expenses with income distributed to depositors, which is replaced with interest, without sufficient explanation of how labour and capital expenses are estimated individually. Besides, it seems the authors did not take into account Islamic window transactions in conventional commercial banks.

Saaid *et al.* (2003) examined the X-efficiency of Islamic banks in Sudan by applying SFA approach. Hasan (2004) argued that the study did not simplify the exact method utilised in estimating overall cost efficiency, therefore the results appear to be confused. On the other hand, Hasan clarified that the results presented by Saaid *et al.* (2003), with some suitable adjustments, could constructively contribute significantly to Islamic banking literature.

Overall, Hasan (2004) pointed out that the nature of inputs and outputs and the limitations of data caused these studies to suffer from a lack of information, and their salient conclusions remained indistinct. Furthermore, from a social accountabilities perspective, it is noted that the very significant structural issues, aptitude, and environment that Islamic banks purport to envision were rarely discussed in IBF literature (Hasan, 2004). To give more illustration, the objectives of profit maximisation and cost minimisation are not crucial for Islamic banks, and the performance of Islamic banks should be evaluated with indication of the level of promoting socio-economic (i.e., societal) development. However, the manner in which Islamic banks can be evaluated in terms of social impacts when the mainstream commercial

banking industry is primarily geared toward profit maximisation remains elusive. In fact, to fulfil potential social aims, Islamic banks should adjust their structure, which applies not just to Islamic banks' responsibility, but also central banks, banking regulations, and political conditions; all these factors must be included to obtain comprehensive measures of performance dimensions and to gauge the achievement of social objectives.

## CONCLUSION

The current study presents a concise discussion of the basis of IBF methods that were utilised to evaluate efficiency and profitability. The techniques and approaches for measuring Islamic banking performance are similar or almost the same to conventional banking. Therefore, this paper has intended to map Islamic banking measurement that related to efficiency and profitability models, showing that the business model in Islamic banking does not differ significantly from that of conventional banking; and although conventional banks are more efficient than Islamic banks, the latter have better assets quality and higher capitalisation (Beck *et al.*, 2013). The mainstream commercial banking industry is primarily geared toward profit maximisation. However, the objectives of profit maximisation and cost minimisation should not be crucial for Islamic banks, thus, the performance of Islamic banks should be assessed with indication of the level of promoting socio-economic development. The surveyed literature sections in this study have described in critical terms the financial methods conducted in IBF studies, concluding that the social objectives of Islamic banks can be obtained after adapting new structures not only for Islamic banks, but also for central banks, banking regulations, and other factors of Islamic nations which are related to macroeconomic level and policy makers. To achieve a better evaluation of measuring the efficiency and profitability of Islamic banks, future research should utilise some variables as indications to socio-economic development in more sophisticated empirical techniques, such as an output-input factor of efficiency models to be associated directly with production functions.

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