

### **Determinants of Islamic Bank Profitability in Pakistan: Using Economic Value Added (EVA) Approach**

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**Cite this paper:** Qayyum, A., Hussain, T., & Khan, M. S., (2020). Determinants of Islamic bank profitability in Pakistan: Using economic value added (EVA) approach. *Paradigms*, 14(2), 166-175.

This research paper aims to analyze the internal and external determinants of profitability for Islamic Banks in Pakistan using the Economic value added (EVA) approach. Internal determinants were cost efficiency, bank capitalization, liquidity risk and non-performing financing (NPF). Economic growth, lending rate, real exchange rate and inflation rate were included in external determinants. The data for internal determinants taken out from the annual financial statements and data for external macro-economic determinants extracted from World Bank Development Indicators and International Monetary Fund (IMF) databases. The data covered all five full-fledged Islamic Banks in Pakistan from the year 2003 to 2019. The time frame was divided into three periods: pre-crisis period, crisis period, and post-crisis period. Results of the model were analyzed by using the Generalized Least Squares (GLS) model. The results disclosed that the bank learning curve had a positive and significant effect on bank profitability. Still, exchange rate, economic growth and NPF had a negative and significant impact on Islamic banks' profitability. All other latent constructs were indicating insignificant association. This is one of the few studies to examine the determinants of Islamic bank profitability through EVA. The findings of this research broaden academic understanding and application about determinants of Islamic bank's profitability. Banks' management can formulate strategies to maximize shareholder wealth and reduce bankruptcy risk.

**Keywords:** EVA, Islamic banks and Financial crisis.

#### **INTRODUCTION**

A considerable revolution has taken place during the last couple of decades in the banking industry worldwide. The evolution has remarkably affected banking operations practices and created a fiercely competitive environment in the banking industry (Hassan and Bashir, 2003). The banking structure and performance are significantly affected by the bank-specific factors and macroeconomic factors, including certain bank features. Despite dominating conventional banks, the Islamic banks had received unusual exponential growth around the world and in Pakistan. The first Islamic bank was established in 1975 and was named Dubai Islamic Bank. Since then, Islamic banks have received considerable attention, especially in the Muslim world and generally in the non-Muslim world, for their profit and risk-sharing attributes (World Finance, 2014). The Islamic banks grew at a rate of 27% in terms of total assets and 33.3% in terms of total deposits (SBP, 2014). This makes Islamic banks have achieved a significant role in Pakistan's financial sector and has systematically become critical for the economy. In contrast, the Islamic banks' flexibilities to become shareholders on the one hand and provide investment banking services, on the other hand, have allowed capturing the market share rapidly. Contemporary, the Islamic banks' market share stands at 15.4% in Pakistan as of 2019, which has increased by 1% compared to 2018.

In the current banking structure, the Islamic banks' performance may be affected by factors that may include internal factors, which means bank-specific factors, and external factors mean macroeconomic factors. Regardless of recent financial crises, the banking industry has a central role in its economic development and growth since it facilitates consumers and business firms. To strengthen the financial system, stabilize, achieve successful modernization and safeguard against the shocks, healthy and

profitable banking industry is required. The Islamic banks' profitability can be determined through the bank-specific factors and certain macro-economic (Trad, Trabelsi, and Goux 2017). Presently available literature explains and empirically tests the determinants of the profitability of conventional banks. However, few studies have attempted to empirically study the determinants of Islamic banks' profitability in two different time windows to capture the influence of the financial crises over the determinants of Islamic banks profitability.

Therefore, this paper aims to empirically investigate the determinants of the Islamic bank's profitability in Pakistan's context and examine how these determinants differ before and after the financial crises 2008-2009. This financial crisis had the worst effect on the banking sector worldwide, after which the Basel committee developed strict regulatory measures. Besides it, this research is focused on using Economic Value Added (EVA) as the proxy to measure the profitability of Islamic Banks rather than the primarily used determinants such as Return on Assets (ROA) and Return on Equity (ROE).

Banks' fundamental role remains at the center of financing the economic activity and the efficiency of the banks. Thus, the profitability of banks has been the focus of attention for academicians for decades. Over the years, other than conventional banking, researchers have started to assess the importance and determinants of Islamic banks' profitability. However, the existing literature regarding Islamic banking is not as developed as conventional banking. Thus, conducting this research is of great significance from the researcher's perspective. Additionally, from the student's perspective, this research has specifically used EVA as the metric for profitability which is not as commonly used for banking institutions in the existing literature; hence this research

will broaden their academic understanding and application about profitability and determinants Islamic banks.

Carrying out this research also have managerial implications concerning the Islamic bank's staff and management. This research has identified different determinants that tend to impact the profitability of the bank. Based on the results of this research, the bank's management can formulate their strategies accordingly to maximize profitability and reduce the risks of bankruptcy. Another important managerial implication of this research is that based on this study's results, Islamic banks can strategize effective plans for better supervision of credit and liquidity risks to attain long-term profitability. Moreover, the previous researches that have been conducted on the determinants of profitability of Islamic banks were focused on measures such as Return on Assets (ROA), Return on Equity (ROE), and Net Profit Margin (NPM). However, this research is inclined to assess the results based on a relatively under-researched metric in Islamic banking, i.e. EVA. By using the measure of EVA for determining the profitability of the Islamic banks, the management can consider the aspect of shareholder's wealth maximization (Bidabad & Allahyarifard, 2019), which is often overlooked by other conventional measures of profitability. Thus, this research's fundamental practical implication is that it will allow the Islamic bank's management to increase their profitability while considering shareholder's wealth.

There is a rich body of literature on the determinants of profitability for banks in different regions around the world. Various researchers have adopted other populations, sample sizes, methods, and techniques to assess profitability determinants. There was a research conducted by Bourke (1989), the performance of twelve banks was evaluated from Australia, Europe, and North America. The researchers found it difficult to establish a connection between banks from different regions. Hence, 'value added' was introduced in this research which was later adopted by a further study. Molyneux and Thornton conducted a similar study (1992) and analyzed the determinants of European banks' financial performance in eighteen countries from the time period ranging from 1986 to 1989. In this study, the methodology was adopted from Bourke, and the results conformed to that of American bank's profitability studies. The results of the research indicated that the profitability of the bank is also dependent on government ownership.

Athanasoglou, Brissimis, and Delis (2008) researched intending to assess macroeconomic, industry-specific, and bank-specific determinants of bank profitability. This research used a structure conduct hypothesis, and the GMM technique was applied on the panel of Greek banks from 1985 to 2001 as a data analysis technique. The results of this research indicated the other than the bank's size, and all the other bank-specific characteristics tend to influence a bank's profitability. The results of this research did not provide evidence about structure conduct hypothesis. Lastly, the results also indicated that only the upper phase of the business cycle had an influence over Greek banks' profitability.

Regardless of the amount of literature that can be found on the determinants of profitability of conventional and Islamic banks, there are certain gaps and discrepancies catered within this study. Firstly, previous research has majorly focused on different

financial ratios to represent profitability such as ROA, ROE, and profit margins (Menicucci and Paolucci, 2016; Athanasoglou, Brissimis, and Delis; Sufian and Chong, 2008; Aburime, 2008). Even though certain researches have undertaken EVA as the measure to assess bank's profitability, it is done for the conventional banks (Francis, 2013; Uyemura, Kantor, and Pettit, 1996). Majority of the literature which can be found on the determinants of profitability of Islamic banks is focused towards using different financial ratios (Ben Khediri and Ben Khediri, 2009; Zeitun, 2012). Thus, the previous literature does not include researches in which EVA is used for assess the profitability of Islamic Banks in Pakistan hence the existing research gaps are fulfilled through this study.

The first contribution of this research is contextual as this research is based on Pakistani Islamic Banks because previously the researchers have not analyzed the determinants of Islamic bank's profitability using the concept of EVA. As mentioned in the previous paragraph, the major gap that is being addressed in this study is that preceding studies employed financial ratios as measured of profitability however, this research contributes towards the literature by incorporating the concept of EVA. The concept of EVA was meant for non-financial companies and has been applied adequately in researches related to industries other than banking. However, over the years, this concept was adopted by researchers in order to determine bank's profitability (Francis, 2013; Uyemura, Kantor, and Pettit, 1996). Considering that EVA is regarded as a better measure of determining bank's profitability because it considers the aspect of shareholder's wealth maximization. This concept is not yet well-researched and applied in the context of Islamic banks which is the main contribution of this study. Another contribution of this study is the time frame considered for analysis, i.e. from 2003 to 2018 which incorporates the time prior to financial crisis, during crisis, and post-crisis. This has allowed to critically analyze the impact of financial crisis on Islamic banks' performance in Pakistan.

#### **Broad Research Question**

“What are the internal and external determinants of Islamic bank's profitability in Pakistan?”

#### **Objectives of The Study**

- To develop the index of bank-specific financial factors (internal determinants)
- To develop the index of macroeconomic factors (external determinants)
- To analyze the role of bank-specific financial factors (internal determinants) on the profitability of Islamic banks
- To investigate the impact of macro-economic factors (economic growth rate, inflation, real exchange rate, lending rate) on Islamic banks' profitability.
- To examine the effect of bank's features (Bank's learning curve and Bank size) on Islamic banks' profitability.
- To examine the effect of the global financial crisis on Islamic Bank of Pakistan

#### **LITERATURE REVIEW**

##### **Traditional measures of banks profitability**

The traditional measures used to assess the profitability include ROA and ROE mainly, amongst which as well ROA is most

commonly used (Tan, 2018; Sufian and Chong, 2008; Petria, Capraru, and Ihnatov, 2015). Regardless of their common use, these measures are criticized by the academicians for its shortcoming and limitations. According to Lesakova (2007) profitability ratios such as ROA and ROE can be misleading when not coupled with important supplementary information such as economic circumstances and management's decisions. The previous research indicates that in the literature related to Islamic banks, it also incorporates ROA as the measure of profitability. For instance, Islamic banks operate under Shariah principles and adhere to a different legal framework but measures of its profitability are same to ones used for conventional banking (Khan, Ijaz, and Aslam, 2014). The study analyses the bank-specific factors and macroeconomic factors as independent variables and investigates its impact on profitability. To overcome the challenges associated with traditional measures of profitability, certain researches have incorporated the use of EVA as a proxy of profitability.

### **Background of EVA**

EVA is measure of economic profit of a company based on the residual wealth and is thus termed as true economic profit that the company generates over time. This measure was coined by Stern Stewart & Co. in 1989 and is calculated net operating profit after taxes minus cost of capital employed. The result of the EVA may be positive or negative; whereas a positive result reveals that the company has been increasing the value of shareholders, but if the value is negative, this indicates the declining value of shareholders (Fraker, 2006; Kramer, and Peters, 2001). Meanwhile, Sharma and Kumar (2010) explain that EVA is performance measurement approach and is based on the idea that an organization can be considered profitable if it generates return and creates wealth for the shareholders. Hence, EVA provides a positive value if the firm's performance is above the cost of capital and provides a negative value if the firm's performance is less than cost of capital (Kyriazis and Anastassis, 2007). In addition to, the EVA has been considered an important and useful indicator for the performance of the company and it is mainly calculated through the items of balance sheet. Meanwhile, the EVA calculations depend upon the invested capital and this approach can be used effectively for the asset-rich companies and are considered mature and stable. However, companies with a large investment into the intangible assets such as technology companies may not be evaluated effectively through EVA.

### **Application of EVA for Banks**

EVA has been commonly accepted and widely applied in industrial companies as the measure of profitability due to incentive compensation and the alignment of interests of shareholders and management. Certain aspects are to be considered for using EVA for banks (Uyemura, Kantor, and Pettit, 1996). Firstly, it is important to calculate Net operating profit after tax (NOPAT) as it shows the company's operational profit in such a manner that it reflects the current economics of company in a better and more accurate manner. According to Uyemura, Kantor, and Pettit (1996), four major adjustments are required for customizing EVA as a profitability measure for banks: loan loss provision, taxes, non-recurring events, and securities accounting.

For the EVA application in banks, the loan loss reserve should not be included in capital on a pre-tax basis as it is not a permissible expense for tax. Secondly, for taxes, in calculating NOPAT the tax provision should be excluded and cash operating taxes should be included. Moreover, net deferred tax credits should be included for capital. A case-by-case scenario should be used in order to cater to non-recurring events for banks for applying EVA in banks. One of the most common non-recurring events in the case of banks is restructuring charge. It should be considered as adjustment to capital rather than reduction in operating profits. Lastly, the securities transactions should not be penalized or rewarded, they occur due to consequence of liquidity, bank investment, and interest rate risk management activities. In order to remove the effects of losses and gains the amounts when incurred should be excluded from NOPAT. However, it should be amortized against NOPAT for the remaining lives of securities until sold.

### **Bank Specific Financial Factors**

Bank specific financial factors are considered as the internal factors which are considered independent and affect the bank's profitability internally and they are said to influence the profitability more as compared to other macroeconomic variables (Ali, Akhter, and Ahmed, 2011). Menicucci and Polucci (2016) have defined bank specific financial factors as internal determinants of bank profitability which reveal differences with respect to operational efficiency, liquidity, funds management, expense management, capital adequacy, and provisioning policy. Following are the bank specific financial factors that are considered by this research:

#### **Cost-efficiency and Bank Profitability**

Abate and Mesfin (2019) define cost efficiency as using methods to reduce the input cost while achieving maximum feasible value at the same cost. Bustamante, Cuba, and Nivin (2019) figured out that the impact of cost efficiency on banks' profitability is positive. The study conducted by Ramadan, Kilani, and Kaddumi (2011) indicated that the Jordanian banks require the effective cost management in order to improve their profitability. This implies that there is a positive impact of cost efficiency on bank's profitability. It was found by Brock and Rojas (2000) that inefficiency in cost management tends to result in reduced profitability. Based on these results it is hypothesized: H1<sub>a</sub> = There is a positive impact of cost efficiency on bank profitability

#### **Bank capitalization and Bank Profitability**

Gutkevych and Jureniene (2020) defined bank capitalization as a measure of net worth of the banks and Javaria, and Majeed (2020) further explains that bank capitalization triggers the shareholders' risk factors of the company. A bank with low capitalization indicates a greater burden of liabilities over the firm exposing it to higher risk of default and increased risk over their investment. Similarly, a high capitalization ratio considered desired for the banks since it may contribute to greater profitability for the banks. In addition to, Bongini et al. (2019) conducted empirical analysis on the publicly listed conventional banks and concluded that a higher and positive effect of bank capitalization on the banks' profitability. Therefore, bank

capitalization tend work as a determinant of bank's profitability in case of Pakistan. On the contrary, the study conducted by Bikker and Hu (2002) found a negative impact of capitalization on banks' profitability, implying that equity and bank financing act as substitutes rather than complements. Nonetheless, based on the previous literature, it is expected that there is a positive impact of bank capitalization on the profitability (Ramadan, Kilani, and Kaddumi, 2011).

*H1<sub>b</sub> = There is a positive impact of bank capitalization on bank profitability*

#### **Non-performing financing and Bank Profitability**

Hassan (2019) defines the non-performing financing as loans for which bank has not received any periodic interest payment and principal and it is declaration of state of default by the borrower that he is unable to meet with the liability. Meanwhile, typically a financing is considered as non-performing financing if payments are not made within 90 days of due date. Therefore, any financing on which due payment has not been received for past 90 days then it is categorized non-performing financing. With respect to the influence of non-performing financing over profitability, Priporas et al. (2019) examined the impact of non-performing financing on banks' profitability by using GMM model and author revealed that there is a negative effect of the non-performing financing over the profitability of the banks. Similarly, another study by Patna (2018) found that non-performing financing negatively affects the banks' profitability. However, the research carried out by Khan Siddiqui and Sarwar (2020) found insignificant relationship of non-performing financing with the profitability of the banks. Based on the results of majority of previous researches, it is hypothesized:

*H1<sub>c</sub> = There is a negative impact of non-performing financing on bank's profitability*

#### **Liquidity Risk and Bank Profitability**

Tan (2018) defines the liquidity as the bank's ability to have short-term assets that could be used to convert into the cash in a short span of time to meet with the current liabilities' obligations. Similarly, previous studies have also tried to undertake an empirical investigation on the effect of liquidity and profitability. In this regard, Abate and Mesfin (2019) found that the bank's stronger liquidity position positively influences profitability. However, the research conducted by Molyneaux and Thornton (1992) showed a negative relationship between liquidity and profitability of banks (Alexiou and Sofoklis, 2009). Nevertheless, as per the findings of the research conducted by Hassan and Bashir (2003); Athanasoglou, Brissimis, and Delis (2008), it is expected that this research will yield similar results i.e. positive impact of liquidity on profitability of banks. Following is the hypothesis being tested:

*H1<sub>a</sub> = There is a positive impact of liquidity on bank's profitability*

Based on all the hypothesis, following is the main hypothesis:

**H1 = There is a significant impact of bank-specific factors on bank's profitability**

#### **Macroeconomic Factors**

Macroeconomic factors are the factors from the bank's external environment that tend to influence its performance and

profitability (Akhtar, Ali, and Sadaqat, 2011). Various researches have been carried out based on macroeconomic factors and its impact on profitability of banks, such variables are economic growth, inflation, taxation, market structure and real effective exchange rate (Hassan and Bashir, 2003; Athanasoglou, Brissimis, and Delis 2005). Following are some of the macroeconomic factors that are considered in this research paper.

#### **Economic Growth and Bank Profitability**

According to Asadullah, (2017), economic growth is determined change into the goods and services produced in country within a specific period of time. The country's economic growth is measured by gross domestic product (GDP) growth and growth in the GDP is a positive indication for progressive economy. Therefore, the investment environment increases within the country as the businesses experience a growth and expect a stronger growth in the future. Hence, individuals and businesses turn to banks for the loans and other financing facilities to exploit the business and expansion opportunities. On contrary to majority of the evidence found based regarding relationship of economic growth and bank profitability, the research conducted by Ben Naceur and Goaid (2008) has suggested that GDP (metric for economic growth) is not significantly related to the profitability of bank. Nonetheless, majority previous researches from different geographic region have found a positive impact of GDP on bank's profitability (Sufian and Habibullah, 2009; Akhtar, Ali, and Sadaqat, 2011), based on which, it is hypothesized in this study:

*H2<sub>a</sub> = There is a positive impact of economic growth on bank's profitability*

#### **Inflation Rate and Bank Profitability**

Inflation is considered as the rate at which the price of goods and services increase persistently in a given time period, it is measured by consumer price index which tends to reflect the average change in percentage of the cost incurred by an average customer for a basket of goods (World Bank, 2020). As indicated by Masood, Javaria, and Majeed (2020), the increase in inflation increases the rate of the transaction of banks. This increased rate attracts the interest of investor whilst the borrowers tend to avoid borrowing at such circumstances (Bidabad and Allahyarifard, 2019). Therefore, the profitability of the banks gets stimulate as the lending behaviour of the banks triggered. On the contrary, Demirguc-Kunt and Huizinga (1999) found that in the case of developing countries, there is a negative impact of inflation on profitability of banks because cost increases faster than revenue in such environment. Naceur (2003) on the other hand found no relationship between inflation of profitability. As per the findings of Guru et al. (2002); Vong and Chan (2000); and Jiang et al. (2003), following is the hypothesis for these macro-economic factors:

*H2<sub>b</sub> = There is a positive impact of inflation on bank's profitability*

#### **Exchange Rate and Bank Profitability**

Exchange rate is the particular rate at which one currency is exchanged in the place of other. Exchange rates are stimulated by any country's inflation and economic growth (World Bank, 2020). Changes in the exchange rate impact banks behaviour and policies

to borrow and lend money. The research conducted by He, Fayman, and Casey (2014) found that fluctuations in the exchange rate had no statistically significant influence on banks' profitability, which ROA measured. However, another study conducted by Aburime (2008) found that exchange rate was a significant predictor of profitability of banks. Based on the previous researches that have found a negative impact of exchange rate fluctuations on the profitability of the banks (Tan, 2018), it is hypothesized that:

*H2<sub>c</sub> = There is a negative impact of exchange rate fluctuations on bank's profitability*

### **Lending Rate and Bank Profitability**

According to IMF (2020), is the rate of other depository institutions that meets the short- and medium-term financing needs of the private sector. Lending rate is also referred as interest rate commonly. The previous literature has indicated an association between lending rate and bank's profitability. Petria, Capraru, and Ilnatov (2015) have found that interest rates have a positive relationship with the bank's profitability. Similarly, the results of Staikouras and Wood (2003) have also pointed out that there is a direct relationship between interest rate and bank's profitability. However, the research of Guru et al. (2002) found a negative impact of interest rate on the profitability of banks in Malaysia. Even so, in accordance to the results of majority of the previous researches, following is the hypothesis for these variables:

*H2<sub>d</sub> = There is a positive impact of interest rate on bank's profitability*

**H2: Macroeconomic factors have a significant effect on the profitability of Islamic Banks**

### **Bank's Features**

Most of the research have acknowledge the bank size as a sub factor of banks specific factors. However, Asadullah (2017) denotes that firm size or bank size can be considered a separate indicator that is important in addressing banks' collective performance. Size of banks can be accessed through the deposits that banks yield, the market shares of Islamic banks, and conventional banking. Studies have provided conclusive evidence that banks have a significant impact on the profitability of the banks. The following section discusses the bank features considered in this research and their academic significance in light of the previous research.

### **Bank Size**

Another important determinant that has been marked into the literature is the characteristic of banks that regulate is profitability. Under the umbrella of characteristics, the size of the bank are determined to be most concerned determinants. In response to this, Abate and Mesfin (2019) examined the relationship between a bank's size and its performance based on products and services it offers. The previous studies revealed that bank's size have a positive relationship with its profitability. On the other hand, Trad, Trabelsi, and Goux, (2017) listed the fact that smaller banks are more comfortable at managing the quality of their services whilst it becomes complex for larger banks to sustain the similar quality, implying a negative relationship of size and profitability of banks. Based on majority of the studies that have reported that

the bank size does not influence its profitability (Athansoglu, Brissmis, and Delis, 2005; Petria, Capraru, and Ilnatov, 2015), this research paper has hypothesized:

*H3<sub>a</sub>: Bank size does not have a significant effect on the profitability of Islamic Banks*

### **Bank's Learning Curve and Profitability**

The learning curve is considered as a predictor of the bank's relationship with clients and customer, the learning curve takes a detailed account of the banks' ability to benefit out of its experience and provide a better customer experience (Bush, 2013). Learning curve in the context of experience was first discussed by Wright (1936) to manufacture airframes and later on it was adopted for different industries. Though Bush, (2013) reveals that banks experience and its years being to operation may effects its ability to improve the customer care but it certainly does not affect the profitability of Islamic banks hence there is no conclusive evidence. Based on the available researches regarding learning curve and bank's profitability, the following hypothesis is tested through this research:

*H3<sub>b</sub>: Bank's learning curve has a significant effect on the profitability of Islamic Banks.*

**H3 = Bank's features have a significant effect on the profitability of Islamic Banks**

### **Global Financial Crises and Bank Profitability**

The global financial crisis has badly impacted the status and ability of conventional banking to heal the damage, whereas Islamic banking that operates on Sharia law have played important role in fostering an environment of shared investment decision making. According to the study conducted by Erfani and Vasigh (2018), a comparative analysis of the impact of financial crisis on conventional banks and Islamic banks. The results of this research indicated that financial crisis had a negative impact over the operational efficiency of conventional banks however, there was no significant impact of financial crisis on the Islamic banks. A study initiated by Almanaseer, (2014) sheds light on the impact of the global financial crisis on the profitability of Islamic banks, it measures that profitability through the return of average assets. It provides conclusive evidence of the global financial crisis having no significant impact on the Islamic banks' portability. However, another research investigated the impact of financial crisis on Hungary's commercial banks, which showed a steady decline in the bank's performance during the financial crisis (Gyulai and Szucs, 2017). Similar to the negative impact of financial crisis on the profitability of conventional banks (Sufian and Habibullah, 2010), this research paper hypothesizes:

*H4: Global financial Crisis has a negative effect on the profitability of Islamic Banks*

## **METHODOLOGY**

### **Population and Sample**

The population of this research comprises the Islamic Banks in Pakistan. However, considering that it was not possible to collect data from all the Islamic banks, a suitable sample was drawn. The sample was drawn from full-fledged Islamic banks not the banks that are conventional banks with Islamic windows. The five full-fledged Islamic banks selected for this research are Meezan Bank Limited, Bank Islami, Dubai Islamic Bank, Al Baraka (Pakistan)

Limited, MCB Islamic Bank. The sample was drawn using a non-probability sampling method where the convenience and accessibility of data were considered factors.

### Source of Data

The determinants of profitability of Islamic banks were extracted from the historical data ranging from 2003 to 2018. In this research, the banks' financial statements were accessed to obtain data related to the banks' financial information. However, other secondary sources such as World Bank database were used to access macroeconomic indicators like inflation and real effective exchange rate.

### Time Frame

This research's time frame was divided into three periods: pre crisis period, during crisis period and post-crisis period. The data for pre-crisis period ranged from 2003 to 2006, the data for during-crisis period ranged from 2007 to 2008, and the data for post-crisis period ranged from 2009 to 2019.

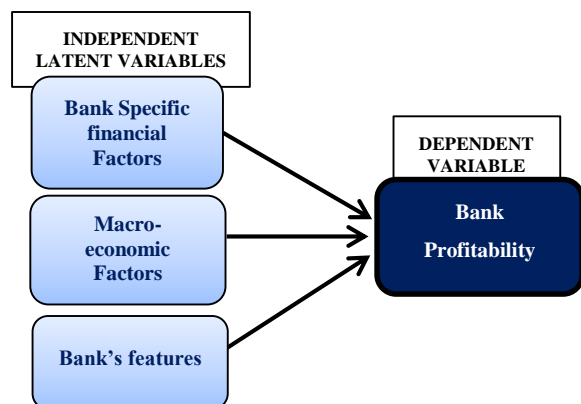


Figure 1: Theoretical Framework

### Description of variables

The variables are selected from prior research studies undertaken on conventional banks and are divided into three main latent variables: Bank specific factors, macro-economic factors and banks' features.

Table 1: List of variables

Latent variable	Variables	Description	Measurement
Bank-specific financial factors	Cost efficiency	Cost efficiency is defined as percentage of total operating cost divided by total income.	$\frac{\text{Total operating expenses}}{\text{Total income}}$
	Bank capitalization	Bank capitalization is defined as the ratio of total equity capital to total assets	$\frac{\text{Total equity}}{\text{Total assets}}$
	Non-performing financing	Non-performing financing (NPFs) ratio indicates quality of loan portfolio of a bank.	$\frac{\text{NPF}}{\text{Total Financing}}$
	Liquidity risk	Liquidity Risk ratio indicates that bank may be unable to meet short term financial demands.	$\frac{\text{Financing Gap}}{\text{Total assets}}$ Financing Gap = Loans - Total Deposits
Macro-economic factors	Economic growth	Economic growth is defined as growth of economic activities.	GDP growth rate from World development indicators (WDI).
	Inflation	Inflation is measured by consumer price index.	Consumer price index taken from WDI
	Exchange rate	Real Effective Exchange rate	Real effective exchange rate from WDI.

Dependent variable	Banks' features	Bank size	Bank learning curve	Bank profitability
	Lending rate	Lending rate or interest rate is defined as the price of money borrowed or lent out.	Interest rate taken from WDI	
	Bank size	Size of bank is defined as natural logarithm of total assets of bank.	Natural logarithm of total assets	
	Bank learning curve	Learning curve or experience of bank is defined through the age of bank from its establishment.	Experience of the bank measured through the number of years of operation	
	Bank profitability	Bank profitability is measured through EVA, which a firm earns after subtracting all capital employed.	EVA = Net operating profit - (Capital employed x cost of capital)	

## EMPIRICAL RESULTS

### Descriptive Statistics

The following table shows the results of descriptive statistics which show the statistical characteristics of the variables that were used in the research:

Table 2: Descriptive Statistics

Variable	Obs.	Mean	Std. Dev.
Cost efficiency	63	0.622	1.134
Bank capitalization	63	0.143	0.176
Non-performing financing	63	0.056	0.054
liquidity risk ratio	63	-0.268	0.210
Economic Growth	85	0.043	0.019
Inflation	85	0.010	0.006
Real exchange rate	85	103.348	8.099
Interest rate	85	0.096	0.018
Size of Bank	63	11.295	1.256
Learning curve of Bank	63	10.556	7.355
Bank profitability	62	-60.387	1301.555

The average cost efficiency percentage for the banks during 2003 till 2018 was recorded to be 62.2%, and the value of mean for this variable is varied by 1.13 units as shown by its standard deviation. The average ratio of bank capitalization for the banks during 2003 till 2018 was recorded to be 0.142, and the value of mean for this variable is varied by 0.175 units as shown by its standard deviation. The average non-performing loan ratio for the banks during 2003 till 2018 was recorded to be 5.5%, and the value of mean for this variable is varied by 0.053 units as shown by its standard deviation. The average liquidity risk ratio for the banks during 2003 till 2018 was recorded to be 26.7%, and the value of mean for this variable is varied by 0.209 units as shown by its standard deviation.

Some macroeconomic variables were also a part of the research model which are country specific. The average economic growth of Pakistan calculated via GDP for the time period of 2003 till 2018 was recorded to be 4.34%, and the value of mean for this variable is varied by 0.019 units as shown by its standard deviation. The average inflation of Pakistan calculated via consumer price index for the time period of 2003 till 2018 was recorded to be 1.00%, and the value of mean for this variable is varied by 0.006 units as shown by its standard deviation. The average real effective exchange rate of Pakistan for the time period of 2003 till 2018 was recorded to be 103.3\$, and the value of mean for this variable is varied by 8.09 units as shown by its standard deviation. The average lending rate of Pakistan for the time period of 2003 till 2018 was recorded to be 9.5%, and the

value of mean for this variable is varied by 0.101 units as shown by its standard deviation. The average size of all Islamic Banks determined with the help of log of total assets for the time period of 2003 till 2018 was recorded to be 11.29, and the value of mean for this variable is varied by 1.25 units as shown by its standard deviation. The average experience of Islamic banks measured with the help of total years of operations for the time period of 2003 till 2018 was recorded to be 10.5 years, and the value of mean for this variable is varied by 7.35 units as shown by its standard deviation. Lastly, the average profitability of Islamic banks measured with the help of EVA for the time period of 2003 till 2018 was recorded to be -60.83, and the value of mean for this variable is varied by 1301.55 units as shown by its standard deviation.

### Regression

In empirical analysis, pooled regression and panel regression were methods to employ but it was imperative to examine whether data contains panel effects or not? For this purpose, Breusch and Pagan Lagrangian multiplier test for random effects was used to determine which the model should be used for regression. Table 3 illustrates the results of test

**Table 3: Breusch and Pagan Lagrangian multiplier test**

Estimated Results	Var	sd = SQRT(Var)
EVA	1624193	1274.438
e	1095146	1046.492
u	0.000	0.000
	Var(u)	0.000
	chibar2(01)	0.000
	Prob > chibar2	1.000

Chi-Square is 0.000 and Prob> Chi-square is 1.000; since the null hypothesis of the test for random effects is that there are no panel effects in data and alternative hypothesis, there are panel effects in data. Since, p-value is greater than 0.05 hence null is not rejected that there are no panel effects. Therefore, panel regression cannot be used on the data in which panel effects do not exist; thus, pooled regression is applicable according to the characteristics of data (Hiestand, 2005; Herwartz, 2006; Khan, Kauser and Abbas, 2015). However, simple pooled regression was not an appropriate method to employ. Taber (2011) suggested that the presence of heteroscedasticity issue and serial correlation could ruin the essence of estimation and violate basic assumptions, which means OLS estimators would not be best linear unbiased estimator (BLUE). Consequently, generalized least square (GLS) was a preferable estimation technique given that it relaxes the assumptions of heteroscedasticity, serial correlation, and BLUE estimator (Musau, Waititu and Wanjoya, 2015). Table 4 illustrates results of GLS, it reveals that Wald Chi-square is 42.65 that is greater than 0 and suggests that indicators or independent variables are adding something to the model and no variables could not be excluded from the model otherwise, it would affect the results of the model. Meanwhile, Prob > chi2 is 0.00 which is less than 0.05 hence this suggests to state that generalized least square (GLS) model is significant and provides statistically significant results.

**Table 4: Generalized Least Squares Model**

Bank Profitability	Coef.	Std. Err.	z	P> z
Financial crisis	-729.335	468.388	-1.56	0.119
Bank learning curve	60.326	22.572	2.67	0.008

Bank Size	-101.019	213.363	-0.47	0.636
Lending rate	862.102	13381.63	0.06	0.949
Exchange rate	-68.868	34.596	-1.99	0.047
Inflation rate	-29502.8	41582.94	-0.71	0.478
Economic Growth	-25332.5	10952.84	-2.31	0.021
Liquidity risk ratio	1263.307	857.805	1.47	0.141
Non-Performing Loans ratio	-10039.9	3213.979	-3.12	0.002
Bank Capitalization	-165.534	1420.218	-0.12	0.907
Cost Efficiency	-186.874	161.854	-1.15	0.248
_cons	10008.59	4800.485	2.08	0.037
Wald chi2(11)	42.65			
Prob > chi2	0.000			

The coefficient estimation shows that if financial crises, banking learning curve, bank size, lending rate, exchange rate, inflation rate, economic growth, liquidity risk ratio, non-performing financing ratio, bank capitalization and cost efficiency changes by 1 unit then Bank Profitability EVA would change by C=-729.335; P=0.119, C=60.326; 0.008, C=-101.019; 0.636, C=862.102;0.949, C=-68.868;0.047, C=-29502.8; 0.478, C=-25332.5; 0.021, C=1263.307;0.141, C=-10039.9;0.002, C=-165.534;0.907 and C=-186.874;0.248 respectively. Therefore, it is determined that bank learning curve has positive and significant effect on bank profitability, exchange rate has negative and significant effect on bank profitability. Economic growth has negative and significant effect on bank profitability, non-performing financing ratio has negative and significant effect on the bank's profitability.

### DISCUSSION

Economic value added (EVA) is considered as depicts the profitability of banks in this study; the findings of the study have suggested that from bank specific factors, only non-performing financing (NPF) ratio has negative and significant effect on bank's profitability. This implies that if NPF ratio is managed and reduced, this could positively contribute to the Pakistani banks' profitability. In addition to macroeconomic factors, only economic growth and exchange rate have a negative and significant effect on the bank's profitability (Kyriazis and Anastassis, 2007). Therefore, it is determined that if economy does not perform positively and that if exchange rate declines (Rupees strengthen against dollar) then profitability of Islamic banks could improve significantly. Furthermore, from the bank's features, the bank learning curve has a positive and significant effect on the bank's profitability; hence, the bank's learning positively influences profitability. Meanwhile, no influence of financial crises has been found on the bank's profitability and this implies that financial crises could not affect the profitability of Islamic banks. However, no other variable bank specific factor, macroeconomic factor, and bank's features significantly affect the banks' profitability.

Therefore, it can be argued in accordance with the study of Ramadan, Kilani and Kuddumi (2011) and Brock and Rojas (2000) profitability is being influenced by the cost efficiency but findings of following study are contradictory. In general terms, cost efficiency should improve profitability, but difference in findings of conventional banks and Islamic banks is different and stimulates the approach to reason behind contradictory findings. However, this finding can further be analyzed that either Islamic

banks are working at optimal efficiency and there is no further room for improvement or the data lacks to explain Islamic banks' profitability. Similarly, bank size, lending size, inflation rate, liquidity risk ratio and bank capitalization should have influenced the Islamic bank's profitability as suggested by Mesfin (2019), Petria, Capraru, and Ihnatov (2015), Demirgue-Kunt and Huizinga (1999), Alexiou and Sofoklis, (2009) and Bongini et al. (2019) respectively. Meanwhile, Table 5 demonstrates hypothesis of the study and decision.

**Table 5: Hypothesis Assessment**

<b>Hypotheses</b>	<b>Decision</b>
H1 <sub>a</sub> = There is a positive impact of cost efficiency on bank profitability	Rejected
H1 <sub>b</sub> = There is a positive impact of bank capitalization on bank profitability	Rejected
H1 <sub>c</sub> = There is a negative impact of non-performing financing on bank's profitability	Accepted
H1 <sub>d</sub> = There is a positive impact of liquidity on bank's profitability	Rejected
<b>H1 = There is a significant impact of bank-specific factors on bank's profitability</b>	<b>Rejected</b>
H2 <sub>a</sub> = There is a positive impact of economic growth on bank's profitability	Rejected
H2 <sub>b</sub> = There is a positive impact of inflation on bank's profitability	Rejected
H2 <sub>c</sub> = There is a negative impact of exchange rate fluctuations on bank's profitability	Accepted
H2 <sub>d</sub> = There is a positive impact of interest rate on bank's profitability	Rejected
<b>H2: Macroeconomic factors have a significant effect on the profitability of Islamic Banks</b>	<b>Rejected</b>
H3 <sub>a</sub> : Bank size does not have a significant effect on the profitability of Islamic Banks	Accepted
H3 <sub>b</sub> : Bank's learning curve has a significant effect on the profitability of Islamic Banks.	Accepted
<b>H3 = Bank's features have a significant effect on the profitability of Islamic Banks</b>	<b>Accepted</b>

The bank specific factors have a significant effect on the profitability of Islamic banks but bank-specific factors and macroeconomic factors have no significant effect on bank's probability except for NPF ratio and exchange rate those negative effect. Therefore, it is determined that this study's findings are not consistent with previous empirical studies. This suggests that there is a significant difference between how conventional banks are affected these categories of variables.

### CONCLUSION

This paper aimed to identify the determinants of the profitability of Islamic banks in Pakistan and examine the determinants, bank-specific factors, macroeconomic factors, and bank's features. For empirical test, generalized least square (GLS) was employed to determine extent to which factors estimate the profitability of Islamic banks. The study's findings have suggested that bank learning curve has a positive and significant effect on the profitability of Islamic banks and exchange rate, economic growth, and NPF ratio have a negative and significant effect on the profitability of Islamic banks. However, no other variable

from bank specific factors and macroeconomic factors has a significant influence on Islamic bank profitability. These findings contradict previous studies where economic growth, inflation, lending rate, liquidity risk ratio, size of bank, and cost efficiency were found to have a positive influence over the conventional banks. This shows that there is a difference between the determinants of Islamic bank's profitability and determinants of conventional bank's profitability. Since, it is found that only three factors; bank's learning curve, exchange rate, economic growth and NPF ratio are determinants of Islamic bank's profitability, hence it needs to be further studied why is there a significant difference in determinants of Islamic bank's profitability and conventional bank's profitability. The core reason behind the Islamic bank and conventional may be due to reliance of the Islamic banks on the Islamic principles where interest is strictly prohibited but in contrast the conventional banks foundation is on interest. This is a major reason that lending rate do not significantly influence the profitability of Islamic banks in Pakistan but at the same time it significantly and positively contributes to enhanced profitability of conventional banks. Therefore, it is suggested to verify the result of this study by conducting a comparative empirical study with conventional banks with same sample size and time period and from same country.

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