PROFITABILITY OF ISLAMIC BANKS: EVIDENCE FROM BANGLADESH

By

Naoreen Farhana Nova

ID - 19175009

A thesis submitted to the Department of Economics and Social Sciences in partial fulfillment of the requirements for the degree of M.Sc. in Applied Economics

Department of Economics and Social Sciences

Brac University

January 2022

Naoreen Farhana Nova

Declaration

It is hereby declared that

1. The thesis submitted is my own original work while completing degree at Brac University.

2. The thesis does not contain material previously published or written by a third party, except where this is appropriately cited through full and accurate referencing.

3. The thesis does not contain material which has been accepted, or submitted, for any other degree or diploma at a University or other institution.

4. I have acknowledged all main sources of help.

Student's Full Name & Signature:

_____
Naoreen Farhana Nova
ID 19175009

Approval

The thesis titled "Profitability of Islamic banks: Evidence from Bangladesh" submitted by Naoreen Farhana Nova (19175009) of Spring, 2020 has been accepted as satisfactory in partial fulfillment of the requirement for the degree of M.Sc. in Applied Economics on 19/2/2022

Examining Committee:

Supervisor:
(Member)

_____
Dr. Iftekhar Ahmed Robin
Deputy General Manager
Bangladesh Bank

Program Coordinator:
(Member)

_____
Dr. Farzana Munshi
Professor
Department of Economics and Social Sciences
Brac University

External Expert Examiner:
(Member)

_____
Dr. Syed Naimul Wadood
Associate Professor
Department of Economics Faculty of Social Sciences
University of Dhaka

Departmental Head:
(Chair)

_____
Dr. Farzana Munshi
Professor
Department of Economics and Social Sciences
Brac University

Abstract:

The thesis investigates the impact of bank-specific factors on the profitable measures of Islamic Shariah based banks in Bangladesh for the period, 2014-2018. The sample contains bank level annual data of eight (08) Islamic commercial banks that are operating full-fledged in Bangladesh. The regression results show that loans and advances have a significant and positive impact on a bank's profitability. On the other hand, bank deposits have a negative and significant effect on profitability. Therefore, banks should expand their loan portfolio in economically viable projects. Secondly, banks should mobilize cost effective funds and deposits from alternative sources for investment. The findings of this study would help the bank management, investors, policy makers and other stakeholders for improving the performance of Islamic Shariah based banks in future.

Keywords: Islamic banking, ROA, ROE, Profitability, Random-effect Model, Fixed-effect Model.

Acknowledgement

I would like to express my gratitude to Almighty Allah for giving me the ability to complete the research report.

I am obligated to my supervisor Dr. Iftekhar Ahmed Robin, Deputy General Manager, Bangladesh Bank for his scholastic guidance, constructive criticism and untiring help for successful completion of this research report.

Finally, I would like to thank those people who are related with making this research report and making it a success.

Table of Contents

List of Tables

List of Figures

List of Acronyms

ROA = Return on Asset

ROE = Return on Equity

BB = Bangladesh Bank

PLS = Profit and Loss Sharing

MENA = Middle East/North Africa

GCC = Gulf Cooperation Council

CAGR = Compound Annual Growth Rate

LMC = Liquidity Management Center

BMA = Bahrain Monetary Agency

IFIs = Islamic Financial Institutions

IIFM = International Islamic Financial Market

NCB = National Commercial Bank

Chapter 1

Introduction

1.1 Background and Motivation

Efficient financial system is one of the pre-necessities for a developing economy like Bangladesh. Banking is a significant part of a financial system, and henceforth, affects the financial health and stability of an economy. Banking framework comprises monetary exchanges and financial intermediation. The financial intermediation indicates a long chain including monetary elements and cycles towards lessening cost, matching between the requirements and accessibility of assets, making of tailor-made monetary items dependent on available necessities and arrangement of ideal assets.

To remain sustainable the complementarity of conventional bank and Islamic bank in the financial business has constrained Islamic banks to be energetic in the financial business. As per Bilal Al Qureshi (2010), Islamic banking has extended its viewpoints to all significant areas of the planet with a 15%-20% yearly growth rate. Islamic banks create gain through value cooperation, which requires a borrower to share profits with the bank. The worldwide financial industry has encountered various changes to conform to the global mix of monetary business sectors, liberation and advancements of innovation in financial administrations during the current decade. These progressions have set out space for both open doors and difficulties for banks including Islamic Shariah based banks to stay productive in the current cutthroat monetary market. According to Khir et al. (2009), the ultimate target for Islamic bank is the bank profitability. Even so, profit that will be accomplished ought to obtained by following Islamic rules.

1.2 Objective

For the stability of macroeconomic and microeconomic conditions, the banking sector plays an important role. The goal of the paper is to analyze the effect of bank-specific variables on the productivity of Islamic banks in Bangladesh for the period 2014-2018. Reason I chose the period 2014-2018 is because of the availability of data.

1.3 Research Question

Considering the research rationale, this study plans to address the research question: to what extent the bank specific elements influence the profitability measures, for example, Return on Asset (ROA) and Return on Equity (ROE) of the Islamic Shariah based banks in Bangladesh.

1.4 Research Methodology

This research applies quantitative methods and estimates a panel data regression model utilizing bank level yearly information of eight (08) Islamic banks in Bangladesh for the period, 2014-2018. Secondary data is compiled from balance sheet, income statement and other financial statements of sample banks. Constructing a balanced panel data set, the study estimates the regression model to look at the monetary exhibition of the sample banks as far as profitability measures, Return on Asset (ROA) and Return on Equity (ROE). The Hausman specification test has been attempted to choose the appropriate regression model for the sample. The experimental outcome shows that the random effect model is the fitting one.

1.5 Significance

Despite the fact that there have been a significant number of studies undertaken on the effectiveness of Islamic banking internationally, however, there are few investigations conducted for Bangladesh. Subsequently, this review endeavors to fill the gap in the financial literature by providing a true picture of the current assemblage of information in Islamic banking in Bangladesh. The impact of bank-specific factors on the profitability of Islamic banks in Bangladesh is the main focus of this paper.

1.6 Structure of the paper

The thesis is organized in six chapters. Following the introductory chapter which contains background and motivation, research objectives & significance of the study, chapter 2 gives ideas of Islamic banking and finance. Chapter 3 provides a critical review of the literature on Islamic banking. Chapter 4 discusses the global scenario & Bangladesh perspective of Islamic banking. Chapter 5 presents the methodology, data set, model specification and estimation and chapter 6 provides conclusion, policy implications and limitations of the study.

Chapter 2
Islamic Shariah Based Banking: Conceptual Framework
2.1 The idea of Islamic banking

The premise of Islamic monetary law is to manage and direct humankind to the best moral and sound financial exercises. Islamic banking likewise prospers with specific highlights and attributes which has made it particular from other regular financial organizations. Islamic banking, otherwise called Islamic finance or Shariah-agreeable money, follows a Shariah or Islamic law-based finance or banking activities. Sharing of profit and loss and the disallowance of the activities of interest by money lenders and borrowers are the two key standards of Islamic banking.

Islamic banking concepts are based on the balance between well-being and prosperity. This banking system focuses on quantity as well as on quality. According to the Islamic Shariah, interest is prohibited, however, exchange and profit are supported. As per Umer Chapra (1992), the basis of the Shariah is wisdom and welfare of the people in this world as well as the Hereafter. This welfare lies in complete justice, mercy, well-being and wisdom. Anything that departs from justice to oppression, from mercy to harshness, from welfare to misery and from wisdom to folly, has nothing to do with the shariah.

To run various financial activities, Islamic banks must maintain their action with full adjustment to Shariah. Neither they can acquire cash on interest nor can keep their excess money in revenue bearing records. Islamic banking does not include any disallowed business bargains.

2.2 Role of Islamic banking in an economy

Islamic money and the Shariah-agreeable monetary items are one of the quickest growing components in the monetary market. More than 300 banks and 250 mutual funds act in accordance with Islamic standards all over the planet. From $200 billion in 2000, capital of Islamic banks developed to nearly $3 trillion in 2006 (Ibrahim A. Warde, educator of worldwide business at the Fletcher School of Law and Diplomacy at Tufts University, 2016). However, Islamic banks do not experience the ill effects of loan fee hazard, yet they experience go through hazard between the contributor and the borrower. According to Beck et al. (2013), Islamic banks are less expense proficient yet keep up with higher resource quality and are better promoted. During the global financial crisis (2007-09), Islamic banks endured better compared to conventional banks, particularly higher resource quality and better capitalization helped Islamic banks outflank during the crisis.

The global financial crisis has raised question marks on the practicality of the current banking policy reforms. Various factors were responsible for the crisis, for example, reckless lending, regulation and policy errors etc. Actually, these factors were adopted with a hope of receiving excessive returns. Banks and different moneylenders were able to make progressively large volumes of unsafe loans. Numerous banks gave home equity credit without assessing borrowers' abilities to repay because they thought the prevailing good economic environment would continue. Banks and investors expanded their short-term borrowing and started to buy resources which were tough to sell or to turn into cash instantly. Banks and investors suffered huge losses as soon as house prices began to fall since they borrowed too much. Also, the people who borrowed so large, they were unable to repay the loan, but the number of frauds was also increasingly common as a

result of insufficient regulation. As a result, a number of banks either failed or nationalized by their government in the US and elsewhere because even strong banks found it difficult to raise funds.

The Islamic profit-sharing concept helps to foster economic development by empowering equivalent income distribution, which brings about more prominent advantages for civil rights and long-term growth. In the Islamic economic framework, it is not possible to achieve sustainable development without justice. The profit-loss sharing framework further develops capital allocation efficiency as a return on capital which relies upon productivity and the allocation of funds depends on the accomplishment of the project. The profit-sharing framework encourages depositors receive a share in the bank's benefit. The increase in financial backers will certainly bring about the increase in employment. In addition, Islamic banks are safer than different banks as the conventional investors and business visionaries share business hazards. As per Beck et al. (2013), Islamic banks are more liquid and better capitalized which implies that this class of banks is more stable.

2.3 Islamic Banking and Conventional Banking

Differences in business model between conventional and Islamic banks are examined comparing the sources of income. Demirguc-Kunt and Huizings (2010) and Beck et al. (2013) argue that Islamic banks are likely to have more fee-based income generating through non-traditional banking activities including trading activity. Conventional banking is based on interests. Therefore, accounting system, banking products, administrations and risk management activities depend on loan fees. Islamic finance has attempted to track down substitutes to the traditional type of financing to give meaningful and sustainable distribution of wealth and income. Since interest is simply a charge on cash, it has always been considered a specific type of exploitation in Islam.

Consequently, the prime feature of Islamic banking is the denial of interest. According to the Islamic Shariah, interest is called Riba (extra), which is viewed as Haram (forbidden) and thus is prohibited. The foundation of Islamic banking is absence of interest or Riba during exchanges, aversion of Ghararin legally binding terms, installment of Zakat for the destitute and the poor, and evasion of Haram exercises. Islamic money is centered around government assistance, equality and equity. Islamic finance has a solid accentuation on a socially dependable type of financing and for this reason social ramifications of business exercises cannot be disregarded.

Shariah-based banking acknowledges a moral way to deal with financing rather than an unadulterated benefit based monetary methodology. Islamic banking is also known as profit and loss sharing (PLS) banking as banks become a functioning accomplice and endeavor to take part completely in offering both profit and loss to clients. Consequently, the establishment of Islamic finance lies in investment rather than straightforward monetary intermediation.

Islamic finance is strongly dependent on the PLS model as a method of financing. Connection between moneylender and money borrower ought to be of accomplices yet not simply account holders. Islamic banks perform the conduct of assets through dynamic cooperation between the excess or surplus unit and shortage or deficit unit connecting the dangers and return in a proper manner, while conventional banks carry out similar role through the move of assets from the excess unit to the deficit unit by utilizing revenue on the assets intermediated as the wellspring of income. Subsequently, Islamic banking accomplishes an equitable and reasonable monetary framework where the rich are not benefited at the expense of poor people, makes a more impartial society with better dissemination of wealth and pay which advances moral business exercises and eliminates vulnerability in business bargains. The dangers in Islamic banking vary from ordinary banking since they accentuate equity-based financing over debt-based financing. There are many

banking products, such as Musharakah, Murabaha, Mudaraba, Istisna, Ijarah and Salam and so on. Also, the Islamic security which is named as "Sukuk" is acquiring prevalence among the corporate ventures.

Chapter 3

Literature Review

Numerous studies have been undertaken looking into the determinants of bank performance (e.g., Athanasoglou et al., 2008; Ali et al., 2011; Bourke, 1989; Molyneux and Thornton, 1992). These might be inside or potentially outside determinants. The inside determinants are connected with bank-specific factors, for instance, level of liquidity, capital, credit risk, size of the bank and operating efficiency. The external determinants are macroeconomic and industry related e.g., economic growth, consumer price index, broad money growth etc.

Smirlock (1985) and Bourke (1989) propose that industry focus emphatically affects banking execution. The more concentrated the business is, the higher the monopolistic force of the organizations will be which, accordingly, further develops net revenues of banks. Nonetheless, Naceur (2003) shows an adverse connection among profitability and concentration in Tunisia. Likewise, Kosmidou (2008) observes a genuinely huge negative connection between bank concentration and ROA in Greek banking.

Bank capital plays a significant part in deciding profitability. Bourke (1989) and Molyneux and Thornton (1992) track down a positive connection between capital ratio and profitability. Abreu and Mendes (2002) observe a positive connection among bank profitability and capital expressing that all around promoted banks face lower expected insolvency costs that improve profit. A very much promoted bank is perceived to be of lower risk which will generate higher profitability. Besides, promoted banks might appreciate admittance to less expensive wellsprings of assets (Berger, 1995). Additionally, if profit is reinvested, it might prompt higher capital (Flamini et al., 2009). By using time-series data for the period 1990-2002, an exact review on twenty-three Greek

banks uncovers that a more significant level of ROA is related with very much promoted banks and as well as productive cost management (Kosmidou, 2008).

Asset quality is quite possibly the most basic area in deciding the general presentation of a bank. A few authors measure asset quality as loan-loss stores to total loans ratio (Athanasaglou et al., 2005; Kosmidau et al., 2005; Vong and Hoi, 2009; Heffernan and Fu, 2008). This multitude of studies track down a positive connection between profitability and asset quality.

Capital adequacy proportion guarantees the productivity and solidness of a bank by lowering the risk of insolvencies. Studying the profitability of Islamic banks in Malaysia for the period 2009 to 2018, Yusuf and Musse (2019) find a positive connection between banks' profitability and capital adequacy.

Operating efficiency gives mixed outcomes. This variable can be estimated by different ratios. The operating efficiency has an inclination to show higher productivity level as estimated by return on equity (ROE) (Ali et al., 2011). Athnasoglou et al., (2005), Barth et al., (2003), Vong and Hoi (2009), Bashir (2000) and Naceur (2003) utilize the proportion of operating expense to total asset and track down a huge positive connection between this proportion and profitability. Collecting data from 16 Islamic banks/windows in Malaysia from 2005 to 2008, Waisuzzaman and Tarmizi (2010) also find out that operating efficiency has a positive influence on profitability. However, Kosmidau et al., (2005) and Heffernan and Fu (2008) utilize the expense to income proportion as operational efficiency proportion and track down a negative relationship with profitability. Bourke (1989) has noticed a negative connection between profitability and the operating expenses ratio.

Profitability might contrast with bank size. Demirguc-Kunt and Huizunga (1999) show that interest margin is affected by bank size emphatically. Banks that are large and more profitable might have

an uplifted level of technical proficiency. Olson and Zoubi (2011) study banks of MENA countries and propose a positive connection between bookkeeping profitability and bank size. Some other investigations observe a positive connection between profitability and bank size due to huge economies of scale (Goddard and Molyneux, 2004; Molyneux and Thornton, 1992; Biker and Hu, 2002). Nonetheless, Bourke (1989); Miller and Noulas (1997) and Dutta (2013) observe a negative connection between bank size and profitability. By financially analyzing 11 Saudi Arabian Islamic banks between 2005 and 2009, Bintawim and Saud (2011) found a negative connection between bank size and profitability. Another study on the Islamic banks of Bangladesh, which was conducted by Alam, Hamid and Sohel (2016) shows a negative relationship between profitability and bank size.

The connection among liquidity and profitability is likewise considered by some other authors. Chaudhry et al., (1995) found that small and least estimated banks in the US were affected negatively by residential real estate loans to total assets in the 1970s and 1980s. Kosmidau et al., (2005) observe that liquidity adversely influences benefit. One more review on US banks, Angbazo (1997) observes that bank profitability is adversely connected with liquidity hazard. In any case, Athanasoglou et al., (2006), Vong and Hoi (2009), Bashir (2000), Sufian and Habibullah (2009) track down certain connections among liquidity and profitability.

Bank profitability is delicate to macroeconomic conditions. Macroeconomic factors, for example, economic growth, expansion, joblessness might influence banking execution in various ways. Bourke (1989) observes that economic growth is related with section hindrances to the financial market, and would be liable to lift banks' profit. An empirical study on Islamic banks of eight Middle Eastern nations for the period 1994 – 2001, tracks down a positive connection between GDP and benefit (Bashir, 2000). For the most part, banks lend more when the economic growth is

higher and that grants them to charge higher edges and work on the quality of their resources. Study shows that per capita income applies a solid beneficial outcome on bank profit (Neely and Wheelock, 1997). Kosmidou (2008) observes that expansion contrarily affects profit in Greek banking during the EU monetary combination. Another study observes that monetary expansion decidedly influences the profitability of banks (Abreu and Mendes, 2002; Guru et al., 2002; Naceur, 2003). Abreu and Mendes (2002) additionally show that the unemployment rate decidedly influences the benefit of banks.

Chapter 4

Islamic Banking: Global Scenario and Bangladesh Perspective

4.1 Islamic banking: Global Scenario

Over the past three decades Islamic banking and finance have been developing at the pace of 15% per annum. Around 75 countries of the world Islamic financial institutions are operating nowadays. The mechanisms have grown altogether and accordingly which were utilized by them, both on assets and liabilities sides and as a consequence, they are additionally taking part in the cash and capital market exchanges. In Gulf regions like Malaysia, Bahrain and others, Islamic banks and monetary establishments are working corresponding with the regular framework. The Islamic financial area has controlled the worldwide Islamic monetary industry with a higher fixation in the MENA, GCC and Asian countries as they have emerging economies.

The worldwide Islamic monetary market including banking, sukuk, takaful, shared assets has seen powerful development with a compound annual growth rate (CAGR) of 17% somewhere in the range of 2009 and 2013.

Table 4.1 presents the worldwide Islamic monetary industry status.

Table 4.1: Geographical distribution of Islamic Finance Segments (2014)

Region	Banking Assets	Sukuk Outstanding	Islamic Funds' Assets	Takaful Contribution
Asia	203.8	188.4	23.2	3.9
GCC	564.2	95.5	33.5	9.0
MENA (excluding GCC)	633.7	0.1	0.3	7.7
Sub-Saharan Africa	20.1	1.3	1.8	0.6
Others	54.4	9.4	17.0	0.3

Source: Islamic Financial Services Industry Stability Report 2015, IFSB, Malaysia.

The shares of Islamic banking market in Muslim majority countries are as follows:

4.1.1 Bahrain

Currently, 26 Islamic financial foundations are managing various activities in Bahrain, incorporating investment banking, commercial banking, offshore banking and finances the board along with the biggest bunch of Islamic monetary organizations in the Middle East region. Bahrain Monetary Agency (BMA) manages equal freedoms and treatment for both conventional banks and Islamic banks and follows a dual banking system. Bahrain is also facilitating the International Islamic Financial Market (IIFM) and Liquidity Management Center (LMC), which were recently made, to organize the tasks of Islamic banks concerning conventional banks. An extreme cost-effective and detailing system has been presented by the BMA to give fitting administrative set-

up that is industry-specific to the idea of Islamic banking and finance. Besides, BMA has fostered a scope of developments to expand the profundity of Islamic monetary business sectors and to give Islamic institutions thorough freedoms to deal with their liquidity, the BMA has fostered a scope of developments.

4.1.2 Malaysia

Islamic banking has an apparent presence at a broad level in Malaysia, where both Islamic and conventional financial frameworks are working in a competitive climate. Beginning from nothing in 1983, the portion of Islamic financial tasks in Malaysia came to over 8% of absolute monetary framework in 2003. Beginning around 2000, the Islamic financial area in Malaysia has been developing at an average of 18 percent per annum as respect to resources yet the Malaysian government kept on testing up to 20% of all out financial portions of the overall industry by 2010. Presently Islamic banking involves practically 22% of the total national financial area of the country along with 17 Islamic financial institutions (IFIs) (foreign and local) working seriously.

4.1.3 Sudan

At the national level in Sudan, an arrangement of Islamic banking and finance is in functioning. Like other Islamic banks all over the planet, banks have been reckoning in the past of Murabaha financing in Sudan. Notwithstanding that, the portion of Musharaka and Mudaraba activities is on increment and as of now establishes around 40% of complete bank financing. In any case, huge issues still need to be tending to however the Islamic monetary framework has taken a decent beginning in Sudan.

4.1.4 Iran

At national level banking, Iran exchanged over to Usury Free Banking in March 1984. Even so, some conceptual differences are visible between the mainstream movement of Islamic banking and finance and Irans' Islamic banking.

4.1.5 Saudi Arabia

An Advance Card has been presented by National Commercial Bank (NCB) of Saudi Arabia that has every one of the advantages of a regular credit card. Rather than having a credit line, the card has a prepaid line. Subsequently, it does not cause any interest. Some additional advantages of this card are buying security, insurance for travel accidents and so forth and this card charges no interest, no additional expenses with zero conditions. The card is completely Shariah agreeable and is safer than cash, simple to stack up and has overall acknowledgment. This pre-loaded card office is particularly appealing to ladies, youth, independently employed and little foundation representatives who some of the times do not meet the severe prerequisites of a standard MasterCard office. Saudi Government has additionally embraced an Islamic-based law to manage the realm's alluring Takaful area and opened it for unfamiliar financial backers.

4.2 Islamic Banking in Bangladesh

Bangladesh with a populace of 161.4 million, of which 90% are Muslim, has encountered solid public interest, both from general society and the organizations for Islamic banking and monetary administrations since the business's establishment in 1983. As per the most recent accessible national bank information, toward the finish of the July-September 2019 quarter, total Shariah-compliant deposits increased 15 percent over the same quarter of the previous year and came to

$30.8 billion. Over the previous many years, annual growth of this industry is 15 to 29 percent. This brings the portion of Islamic financial deposits near 24 percent of the entire deposit volume of the nation's banking market. Also, the share of loans and financing significantly higher at nearly 25 percent. AT the end of July-September 2019 quarter, Islamic bank branches and Islamic banks windows of conventional commercial banks along with Islamic banking operation reached 1,301, up from 1,200 in the same quarter of the earlier year. In excess of 36,000 individuals are employed in Islamic banking in Bangladesh (Bangladesh Bank, 2019).

Bangladesh has eight full-fledged Islamic banks. They are Islami Bank Bangladesh Limited (IBBL), ICB Islamic Bank Limited, Al-Arafah Islami Bank Limited, Exim Bank Limited, Shahjalal Islami Bank Limited, Social Islami Bank Limited, Union Bank Limited and First Security Islami Bank Limited. What's more, 19 Islamic financial branches of 9 conventional commercial banks and 41 Islamic financial windows of 7 conventional commercial banks are presently offering Islamic monetary types of assistance in the country. The Central Bank of Bangladesh, Bangladesh Bank has approved another two private sector banks, Standard Bank and NRB Global Bank for full-fledged Islamic banking. Thus, the private sector commercial banks are converted to Islamic banks because of the growing population and scope of Islamic banking products in Bangladesh.

"Bangladesh's Islamic financial sector has encountered powerful development because of its strategy and solid public interest," Bangladesh Bank noted in its July-September 2019 quarterly report (The Financial Express, February 18, 2020). Recent issuance of Islamic bond "sukuk" will advance Islamic capital business sectors for financing framework and modern ventures towards accomplishing higher comprehensive GDP growth and achieving Sustainable Development Goals (SDGs).

Bangladesh has positive conditions for the Islamic banking and financial market because of persistent economic growth during the last two decades. Foreign investors are starting to check out the "Bangladesh boom" and look to distinguish business openings. Islamic capital market, Islamic microfinance and insurance sector are also expected to extend at the same time as strong approaches are embraced and carried out. With the assistance of its numerous IT business visionaries, Bangladesh's Islamic money industry is currently taking on Shariah-consistent fintech to do financial exchanges and operations more effectively through technological advancements.

4.3 Activities of Islamic Banks Bangladesh

Islamic Bank Bangladesh Limited (IBBL) established in 1983 and from then the Islamic financial industry began its excursion in Bangladesh. IBBL is the main premium free bank in Southeast Asia. The Islamic financial area kept up with powerful growth because of its strategy and solid public interest since its foundation. Toward the end of September 2019, Bangladesh's 8 full-fledged Islamic banks have been working with 1221 branches out of absolute 10406 parts of the entire financial industry. Furthermore, 19 Islamic financial parts of 9 regular business banks and 41 Islamic financial windows of 8 conventional commercial banks are additionally offering Islamic monetary types of assistance in Bangladesh (Bangladesh Bank, 2019). Diverse Islamic banks have created different deposit schemes based on this Mudaraba standard, for example, monthly/one time deposit-based term Deposit scheme, monthly mudaraba profit deposit scheme, monthly deposit-based hajj-conspire, monthly mudaraba marriage savings scheme, mudaraba savings bond and so forth.

4.3.1 Share and Structure of Deposits of Islamic Banks

There are 08 full-fledged Islamic banks in Bangladesh and they work banking exercises as per Islamic Shariah-based standards i.e., Profit-Loss Sharing (PLS) mode. Total deposits of the eight full-fledged Islamic banks represent 93.89% of deposits of the Islamic financial industry in Bangladesh. Deposits of eight full-fledged Islamic banks remained at BDT 2461066.50 million toward the finish of September 2019. As indicated by Bangladesh Bank among every single Islamic bank, Islami Bank Bangladesh Limited represented the most elevated portion of deposits (34.41%) trailed by First Security Islami Bank Ltd. (13.18%), EXIM Bank Ltd. (11.76%), Al-Arafah Islami Bank Ltd. (11.47%), Social Islami Bank Ltd. (9.55%), Shahjalal Islami Bank Ltd. (7.70%), Union Bank Limited (5.37%), Islamic financial branches (3.27%), Islamic financial windows (2.83%) and ICB Islamic Bank Limited (0.45%) [Figure 4.1] (Developments of Islamic Banking in Bangladesh, July-September, 2019 Bangladesh Bank).

Figure 4.1: Share of Deposits of Islamic Banks in Bangladesh (Bangladesh Bank Quarterly, July-September 2019)
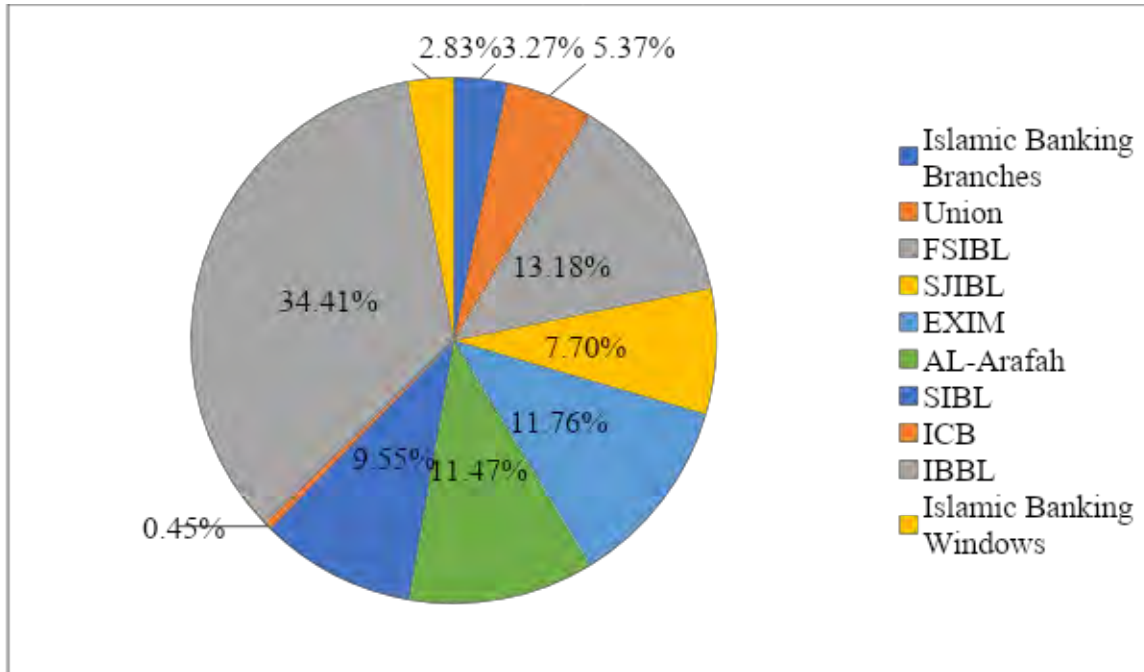
Source: Bangladesh Bank (2019)

An investigation of various methods of deposits in the Islamic financial area uncovers that Mudaraba Term Deposits got the most elevated position (48.67%) trailed by Mudaraba Savings Deposit (MSD) (18.05%), Other Deposits (16.11%), Mudaraba Special Savings (annuity/benefit) Deposits (8.71%), Mudaraba Special Notice Deposits (3.99%), Al-Wadeeah Current Account Deposits (3.56%), Mudaraba Savings Bond (0.69%) and Mudaraba Hajj Deposits (0.22%) and so forth [figure-4.2] (Developments of Islamic Banking in Bangladesh, July-September, 2019 Bangladesh Bank).

Figure 4.2: Types of Deposits held by Islamic Banks in Bangladesh (Bangladesh Bank Quarterly, July-September, 2019)
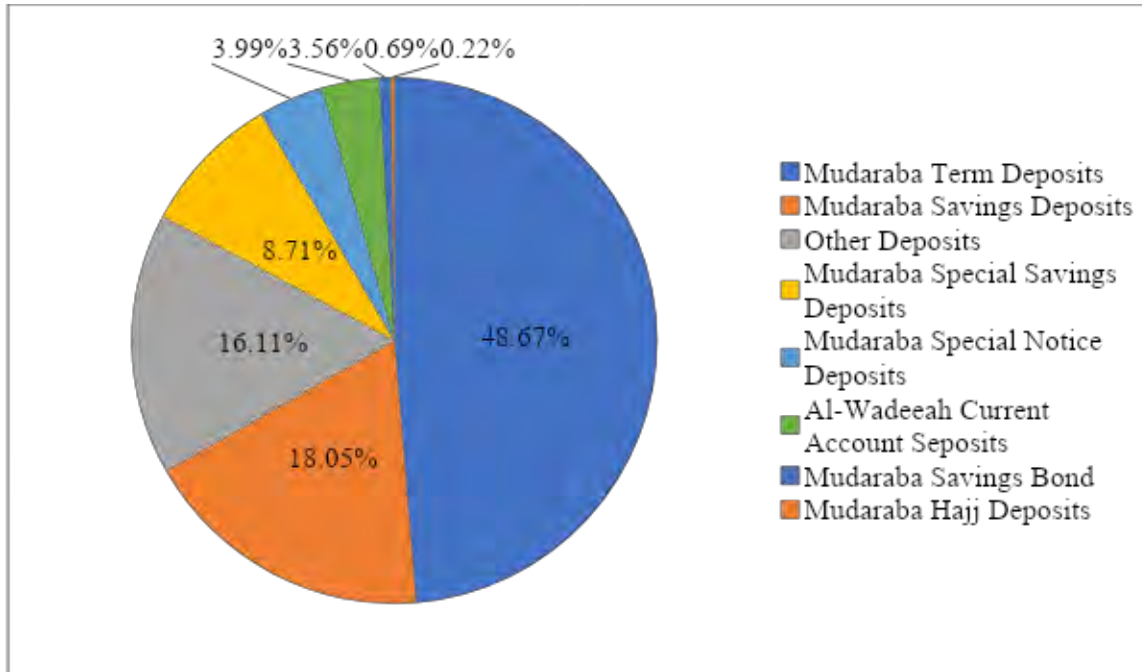
Source: Bangladesh Bank (2019)

4.3.2 Share and Structure of Investments of Islamic Banks:

In Islamic banking sector, total investment remained at BDT 2503229.37 million toward the end of July-September 2019 quarter, which addresses 24.59% of the entire financial industry. Among all out ventures of Islamic banks, 94.94% was made by eight fully-fledged Islamic banks, 2.87% by the regular banks' Islamic financial branches and the rest 2.19% by the traditional banks' Islamic financial windows.

Islami Bank Bangladesh Ltd has represented the most elevated 34.25% portion of investments among every Islamic bank trailed by First Security Islami Bank Ltd. (13.58%), EXIM Bank Ltd. (12.07%), Al-Arafah Islami Bank Ltd. (10.71%), Social Islami Bank Ltd. (10.07%), Shahjalal

Islami Bank Ltd. (7.71%), Union Bank Ltd. (5.58%) and ICB Islami Bank Ltd. (0.34%) [Figure 4.3] (Developments of Islamic Banking in Bangladesh, July-September, 2019 Bangladesh Bank).

Figure 4.3: Share of Investment made by Islamic Banks in Bangladesh (Bangladesh Bank Quarterly, July-September, 2019)

Source: Bangladesh Bank (2019)

Islamic banks invest in all vital areas of the economy of Bangladesh. Investment in Trade and Business area has involved the most elevated 35.48% offer toward the finish of July-September 2019 quarter. The share of the industrial area which remained at 28.48% followed by MSME (Micro, Small and Medium Enterprises, 20.17%), others (6.08%), Real Estate (5.95%), Agriculture (1.33%), Transportation (1.39%), Electricity, Gas and Water supply (1.02%) and Poverty Alleviation (0.80%) [Figure 4.4] (Developments of Islamic Banking in Bangladesh, July-September, 2019 Bangladesh Bank).

Figure 4.4: Sector-wise Investments made by Islamic banks in Bangladesh (Bangladesh Bank Quarterly, July-September, 2019)
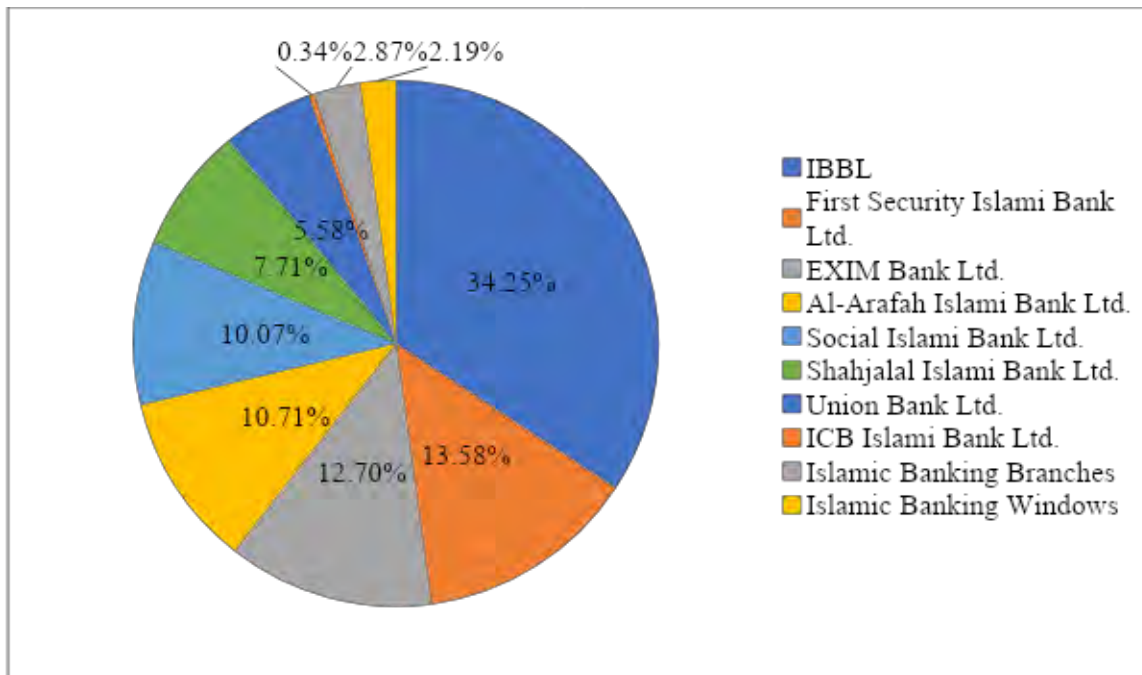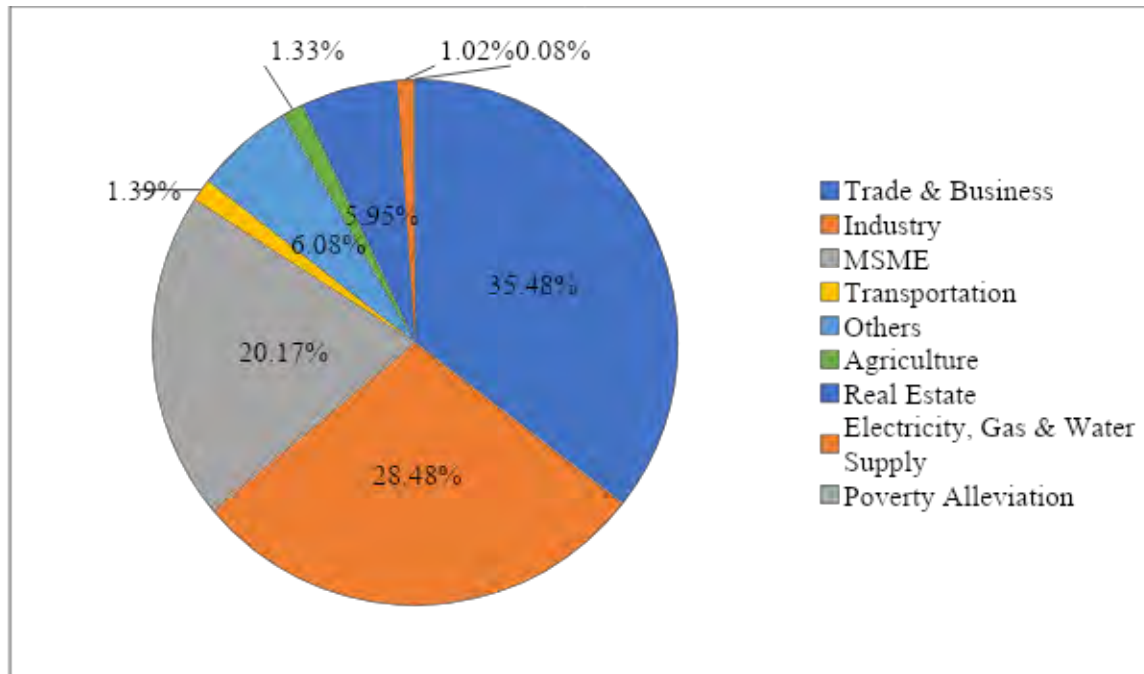

Source: Bangladesh Bank (2019)

4.3.3 Developmental Roles of Islamic Banks

Islamic banks are playing crucial roles in mobilizing savings and external remittances into investments and contributing in achieving high GDP growth and employment. Islamic Banks' investment in trade finance is facilitating external trade and openness with the global economy. Islamic Banks have also been playing a pivotal role in the financial inclusion process of the counting. More than 13 million account holders of Islamic banks are the glaring example of how Islamic banks have become the banks of the people by playing their roles in financial inclusion.

Chapter 5

Empirical Analysis

5.1 Methodology

The study estimates a panel data regression model utilizing bank level yearly information of eight (08) Islamic banks in Bangladesh for the period, 2014-2018. Constructing a balanced panel data set, the study estimates the regression model to look at the monetary exhibition of the sample banks as far as profitability measures, Return on Asset (ROA) and Return on Equity (ROE). Among the three types of data (time-series data, cross-sectional data and panel data), we choose panel data because we have information of eight banks for five years. We are not able to use time-series data and cross-sectional data here because we use time-series data when we observe bank/firm for many years (for example 40 or 50 years). Cross-sectional data is applicable when we observe firm/bank for one year. In panel data analysis, we observe firm/bank for several years. Random-effects model and Fixed-effects model are panel data models (a brief theoretical introduction of these models is given in Appendix II). The Hausman specification test has been conducted to choose the appropriate regression model for the sample. The experimental outcome shows that the random effect model is the fitting one.

5.2 Model Specification

The panel data regression model is expressed as:

$$Y_{it} = \alpha + \beta X_{it} + \varepsilon_{it}$$

Where Y_i represents the profitability measures, X_i represents bank specific variables and ε denotes the error term.

5.3 Data

The sample contains information of the eight (08) Islamic banks in Bangladesh. The information has been gathered from the balance sheet, income statement and other financial statements of the sample banks and the central bank of Bangladesh (Bangladesh Bank).

5.4 Variables

Dependent variables

In this paper, the study has considered Return on Equity (ROE) and Return on Asset (ROA) as the measures of profitability.

The profitability of a bank is referred to by the financial ratio ROA. This proportion is measured by dividing net income (after tax) by total asset. ROA shows the capacity of the bank management to create income by utilizing assets available to them.

ROE is another measure of profitability that indicates how much profit an organization earned contrasted with the total amount of shareholders' equity invested or found on the accounting report. It is a proportion of net income (after tax) to shareholders' equity.

Independent variables

For this estimated model, we have considered seven independent variables. They are operating efficiency, capital adequacy, asset quality, bank size, deposit, total loans, non-performing loan (NPL) & capital ratio.

Operating efficiency: Operating efficiency is the proportion of the banks' output comparable to the inputs. It is a proportion of operating expenses to total assets. The size of this proportion

straightforwardly connects with the banks' profitability. The higher the operating efficiency proportion, the higher is the banks' profitability as well as the other way around.

Capital adequacy: Bank capital impacts the degree of bank profitability. It is how much own assets are accessible to help the banks' business and go about as a buffer if there should be an occurrence of unfriendly circumstances (Athanasoglou et al., 2005). Capital adequacy proportion shows the certainty of the bank to endure misfortunes throughout an emergency. This proportion is corresponding to the adaptability of the bank to emergency circumstances. It is a proportion of capital and risk weighted assets.

Asset quality: Banks' assets also influence profitability. The assets incorporate current asset, credit portfolio, fixed asset, and different investments. Asset quality is calculated by dividing non-performing loans (NPL) by total loans.

Bank size (SIZE): Total asset of a bank shows the size of a bank. The connection between size and profitability are blended, a risky way to deal with size recommends that through lower loan costs charged to borrowers, bigger banks would obtain lower benefits. In any case, assuming that bigger banks control an enormous portion of the market in a non-serious climate, bigger banks might acquire higher benefits through high loaning rate and low productivity.

Deposits & loans: Deposits and loans are the main pointers in the bank budget summaries since they mirror the banks' essential action.

Non-performing loan: non-performing loan is an autonomous variable that influences the profitability of a bank. Banks basically get cash from the premium they charge on loans. They will have less money accessible to pay working costs and make new loans right when they can't assemble the owed income portions from NPLs.

Capital ratio: Capital ratio is a proportion of total capital divided by total assets. The higher the proportion, the more beneficial a bank will be.

Table 5.1: List of Variables

Variables	Measures
Dependent Variables:	
ROA	Net income after tax/Total asset
ROE	Net income after tax/Shareholders' equity
Independent Variables:	
Operating efficiency (OE)	Operating expense/Total asset
Capital adequacy (CA)	Capital/Risk weighted asset (RWA)
Asset quality (AQ)	NPL/Total loans
Bank size (SIZE)	Total asset
Capital Ratio (CR)	Total capital/Total assets
Total Deposit (TD)	Total Deposit
Total Loans & Advances (TL)	Total loans & advances

5.5 Empirical Models:

The empirical models to be estimated are as follows:

Model 1:

$$Y_{ROA} = \alpha + \beta_1 OE + \beta_2 CA + \beta_3 AQ + \beta_4 \beta \quad {}_5 TD + \beta_6 TL + \beta_7 CR + \varepsilon_1 \ldots \ldots .. \text{eq.(i)}$$

Model 2:

$$Y_{ROE} = \beta + \beta_1 OE + \beta_2 CA + \beta_3 AQ + \beta_4 \beta \quad {}_5 TD + \beta_6 TL + \beta_7 CR + \varepsilon_2 \ldots \ldots \text{eq.(ii)}$$

Where,

OE = Operating Efficiency

CA = Capital Adequacy

AQ = Asset Quality

SIZE = Bank Size

TD = Total Deposit

TL = Total Loans & Advances

CR = Capital Ratio

5.6 Empirical results & interpretation

Model 1: Both random effect (RE) and fixed effect (FE) are estimated (Appendix III, table 2). The Hausman specification test is performed to choose which model is appropriate for representing the sample data. From the Hausman test results, the statistically significant probability value (Prob>chi2 = 0.002) indicates that the Random effect model is the appropriate model.

Table 5.2: ROA as Dependent Variable

ROA	Coefficient	Standard Error
Operating Efficiency (OE)	0.202	0.320
Capital Adequacy (CA)	-0.876**	0.387
Asset Quality (AQ)	-0.165	0.323
Bank Size (SIZE)	0.222	0.146
Total Deposit (TD)	-0.296**	0.122
Total Loans and Advances (TL)	0.077	0.164
Capital Ratio (CR)	0.828*	0.312

Source: authors' estimation using STATA

Note: * denotes 10% level of significance, ** denotes 5% level of significance, *** denotes 1% level of significance

The estimated coefficient for capital adequacy (CA) is statistically significant. Capital adequacy has a negative effect on a bank's profitability. However, Yusuf and Musse (2019) find that capital adequacy has a positive significant impact on Islamic banks' profitability. Similarly, Bank's deposit negatively affects profitability because the bank is liable to pay a large amount of interest against its deposits which reduces its net income and thus adversely affects the return of the bank. The estimated statistically significant positive coefficient for capital ratio shows that capital ratio emphatically affects banks profitability. Therefore, if capital is increased banks are less dependent

on interest bearing deposits or funds and eventually banks net income is increased which increases the bank's profitability. Similarly, Molyneux and Thornton (1992) and Bourke (1989) find that capital proportion positively affects bank's profitability. Abreu and Mendes (2002) also observe a positive connection among capital and productivity expressing that very much promoted banks face lower expected liquidation costs that improve benefit.

Model 2: Both random effect (RE) and fixed effect (FE) are estimated (Appendix III, table 4). The Hausman specification test is performed to choose which model is appropriate to exhibit the sample data. From the Hausman test results, the statistically significant probability value (Prob>chi2 = 0.014) indicates that the Random effect model is the appropriate model.

Table 5.3: ROE as Dependent Variable

ROE	Coefficient	Standard Error
Operating Efficiency (OE)	-0.876	2.519
Capital Adequacy (CA)	3.867	3.048
Asset Quality (AQ)	0.923	2.539
Bank Size (SIZE)	-1.984**	1.153
Total Deposit (TD)	-0.742	0.958
Total Loans and Advances (TL)	2.510**	1.293
Capital Ratio (CR)	-2.367	2.452

Source: authors' estimation using STATA

Note: * denotes 10% level of significance, ** denotes 5% level of significance, *** denotes 1% level of significance.

The estimated statistically significant coefficient for bank size stipulates that bank size has a negative effect on bank profitability possibly due to increased administrative cost which decreases the net income and eventually reduces the profitability of the bank. Bourke (1989), Miller and Noulas (1997), Dutta (2013), Bintawim and Saud (2011) and Alam, Hamid and Sohel (2016) find negative correlation between bank size and profitability. Loans and advances have a positive & statistically significant effect on profitability measures. Al-Damir (2014) also finds a positive relationship between loans and advances and profitability since more loans earn more income for the bank and thus increases the profitability.

Chapter 6

Conclusion and Policy Implications

6.1 Conclusion

The thesis investigates the impact of bank specific factors on the profitability of the Islamic Shariah based banks in Bangladesh constructing a balanced panel dataset containing bank level annual data of eight (08) Islamic banks which are operating full-fledged Islamic banking activities. The sample contains data for the period 2014-2018. The data is collected from the balance sheets and income statements of the sample banks. Both Random Effect and Fixed Effect Models have been estimated. The Hausman Specification test has been performed to select the appropriate model for the sample. The test result indicates that the Random Effect Model is the appropriate one for the sample data.

Based on panel data regression, results show that bank deposits negatively affect the profitability since the bank is liable to pay a large amount of profit against its deposits which adversely affects bank's profit. Capital Ratio, which is the proportion of total capital to total asset, has a significant positive relation with ROA. Therefore, well capitalized banks do not need to depend on interest bearing deposits which help banks to increase net income and thus profit will be increased. Loans and advances have a significant positive impact on ROE. Since loans and advances are earning assets of a bank, if loan and advance increases, the bank's profit will increase eventually.

6.2 Policy implications

The empirical findings suggest that a long-term change is required to improve the profitability. Based on the above discussion the following steps may need to be taken:

- First of all, banks should look for alternative sources for fund mobilization apart from customer's deposit. In this research we find that total deposit affects profitability negatively.

- Secondly, the bank should increase its asset portfolio (i.e., loans and advances) in economically viable projects so that the bank can earn profit from its investment activities. In this process banks will be able to generate more profit.

6.3 Limitations

In the estimated regression models, several coefficients have been found statistically insignificant. However, we might get better results if we could have a large sample size. Hence, further exploration can be attempted in this space utilizing an enormous dataset to get a better outcome.

References:

Abreu, M. and Mandes, V. (2002). 'Commercial bank interest margins and profitability: evidence from some EU countries', *Working Paper Series*, pp no. 122.

Al-Qureshi, B. (2010). 'Islamic banking in the OIC: an overview', University of Oxford, United Kingdom.

Alam, M. M., Hamid, I. M. B. A. and Sohel, R. S. M. (2016). 'Determinates of banks' profitability: a study on Islamic banks in Bangladesh', *International Journal of Business and Technopreneurship,* vol. 6, no. 2, pp. 299-308.

Ali K., Akhtar M. F. and Ahmed H. Z. (2011). 'Bank-specific and macroeconomic indicators of profitability- empirical evidence from the commercial banks of Pakistan', *International Journal of Business and Social Science,* vol. 2, no. 6.

Angbazo, L. (1997). 'Commercial bank net interest margins, default risk, interest-rate risk and off-balance sheet banking', *Journal of Banking and Finance,* vol. 21, issue 1, pp. 55-87.

Athanasoglou, P. P., Delis, M. D. and Staikouras, C. (2005). 'Determinants of bank profitability in the South Eastern European region', *Journal of Financial Decision Making,* vol. 2, pp. 1-17.

Athanasoglou, P. P., Brissimis, S. N. and Delis, M. D. (2008). 'Bank-specific, industry-specific and macroeconomic determinants of bank profitability', *Journal of International Financial Markets, Institutions and Money, Elsevier*, vol. 18, no. 2, pp. 121-136.

Bangladesh Bank (2019), *Developments of Islamic Banking in Bangladesh,* July-September, Bangladesh Bank.

Barth, J. R., Nolle, D. E., Phumiwasana, T. and Yago, G. (2003). 'A cross-country analysis of bank supervisory framework and bank performance', *Financial Markets and Institution and Instruments,* vol. 12, no. 2

Bashir, A. M. (2000). 'Determinants of profitability and rates of return margins in Islamic banks: some evidence from the Middle East', *ERF Seventh Annual Conference,* October 26-29, Amman, Jordan.

Beck, T., Demirguc-Kunt, A. and Merrouche, O. (2013). 'Islamic vs. conventional banking: business model, efficiency and stability', *Journal of Banking & Finance,* volume 43, issue 2.

Berger, A. N. (1995). 'The relationship between capital and earnings in banking', *Journal of Money, Credit& Banking,* vol. 27, pp. 432-456.

Bikker J. A. and Hu, H. (2002). 'Cyclical patterns in profits, provisioning and lending of banks and procyclicality of the new Basel capital requirements', *PSL Quarterly Review,*vol. 55, issue 221, pp. 143-175.

Bintawim, B. and Saud, S. (2011). 'Performance analysis of Islamic banking: some evidence from Saudi Arabian banking sector', *Asian-Pacific Economic Literature,* vol. 5, no. 1, pp. 87-95.

Bourke P. (1989). 'Concentration and other determinants of bank profitability in Europe, North America and Australia', *Journal of Banking & Finance,* vol. 13, no. 1, pp. 65-79.

Chapra, M.U. (1992). 'Islam and the economic challenge', *Leicestershire, UK;* The Islamic Foundation and International Institute of Islamic Thought (IIIT).

Chaudhry, M., Chatrath, A. and Kamath, R. (1995). 'Determinants of bank profitability', *American Journal of Business,* vol. 10, no. 1, pp. 41-46.

Demirguc-Kunt, A. and Huizinga, H. (2010). 'Bank activity and funding strategies: the impact on risk and returns', *Journal of Financial Economics,* vol. 98, no. 3, pp. 626-650.

Dutta, S., Gupta, N., Rao, P. H. (2013). 'Determinants of return on assets of public sector banks in India: an empirical study', *Pacific Business Review International,* vol. 5, issue 11.

Flamini, V., Mcdonald, C. and Schumacher, L. (2009). 'The determinants of commercial bank profitability in Sub-Saharan Africa', *IMF Working Paper,* International Monetary Fund.

Goddard J., P. Molyneux and J. O. S. Wilson (2004). 'The profitability of European banks: A cross-sectional and dynamic panel analysis',*Manchester School,* vol. 72, no. 3, pp. 368-381.

Heffernan, S. and Fu, M. (2008). 'The determinants of bank performance in China', *SSRN working paper series.*

Iqbal, M. and Llewellyn, D.T. (eds.). (2002). *Islamic banking and finance: new perspectives on profit sharing and risk*, Cheltenham, Edward Elgar Publishing Limited.

Khir, K., Gupta, L. and Shanmugam, B. (2009). *Islamic banking: a practical perspective,* Kuala Lampur, Pearson Longman Publishing Limited.

Kosmidou, K., Tanna, S. and Oasiours, F. (2005). 'Determinants of profitability of domestic UK commercial banks: panel evidence from the period of 1995-2002', *Money Macro and Finance (MMF) Research Group Conference.*

Kosmidou, K. (2008). 'The determinants of banks' profits in Greece during the period of EU financial integration', *Finance,* vol.34, pp. 146-159.

Miller, S. M. and Noulas, A. G. (1997). 'Portfolio mix and large-bank profitability in the USA', *Applied Economics,* vol. 29, pp. 505-512.

Molyneux, P. and Thornton, J. (1992). 'Determinants of European bank profitability: a note',*Journal of Banking and Finance,* vol. 16, pp. 1173-1178.

Naceur, S. B. (2003). 'The determinants of the Tunisian banking industry profitability: panel evidence', *working paper*, University Libre de Tunis.

Neely, M. and Wheelock, D. (1997). 'Why does bank performance vary across states?', *Federal Reserve bank of St. Louis Review,* pp. 27-38.

Olson, D. and Zoubi, T. A. (2011). 'Efficiency and bank profitability in MENA countries', *Emerging Markets Review*, vol. 12, issue 2, pp. 94-110.

Smirlock, M. (1985). 'Evidence on the (non) relationship between concentration and profitability in banking', *Journal of Money, Credit and Banking,* vol. 17, no. 1, pp. 69-83.

Sufian, F. and Habibullah, M. S. (2009). 'Determinants of bank profitability in a developing economy: empirical evidence from Bangladesh', *Journal of Business Economics and Management,* vol. 10, no. 6, pp. 207-217.

Vong, P. I. A. and Hoi, S. C. (2009). 'Determinants of bank profitability in Macao', *working paper*, University of Macao.

Waisuzzaman, S. & Tarmizi, H. A. B. A. (2010). 'Profitability of Islamic banks in Malaysia: an empirical analysis', *Journal of Islamic Economics, Banking and Finance*, vol. 6, no. 4, pp. 53-68.

Yusuf, M. S. and Musse, A. M. (2019). 'The effect of capital adequacy on Islamic banks' profitability in Malaysia', *European Academic Research,* vol. VII, issue 9.

Appendices:

Appendix I:

History of Islamic banking:

Islamic banking is a new concept of banking that operates on principles adhering to the Quranic norms forbidding usury and transactions, including granting of loans or credits for interest. The economic rationale for eliminating riba (interest) and establishing the Islamic banking system is based on values of justice, efficiency, stability and growth. The Quran strictly prohibits lending money on interest and states that taking interest and making money through unethical means is prohibited for Muslims. Two verses (Al Quran- 2:275 & 3:130) clearly states that "O you who have believed, do not consume usury, doubled and multiplied, but fear Allah that you may be successful" & "and Allah has permitted trade and has forbidden interest".

The origin of Islamic banking can be traced back to the practice of *mudaraba* by the Prophet Muhammad (Sm) himself. The Prophet (Sm) was *mudarib* (agent) for his wife, who entrusted her capital or merchandise to him for trading and got back the principal plus an agreed share of the profit. As a reward for his labour and entrepreneurship, the Prophet (Sm) received his share of the same as a *mudarib*. The mudarib, however, was not liable for losses resulting from the risks of travel or from an unsuccessful business venture. This form of partnership is called *'mudaraba'*. There is another form of partnership called *musharaka*, in which the *musharik* (agent) has a contribution to the capital and can therefore, claim a higher percentage of profit. As early as in the Seventh century, the tax revenue from Iraq was sent across the desert to Medina in the form of a mudaraba. Caliph Umar is known to have invested orphans' money in merchant trading between Medina and Iraq. Musharaka partnerships were practiced in the north-south trade between Egypt

and Jeddah during the Eleventh century. As many as 32 mudaraba contracts were practised in the 17th century in the Turkish city of Busra. Mudaraba was in practice in Tunisia, Indonesia, Arabian Peninsula and India.

Modern Islamic banking concepts came from the historical practice of the concept of a 'three-tier mudaraba'. On the first tier, there is the individual, *rab-al-mal*, who wishes to invest capital. The second tier is the mudarib (agent), to whom the rab al-mal entrusts his capital by contract and finally, on the third tier, there is the entrepreneur, with whom the mudarib signs a contract, and to whom the mudarib passes the capital originally entrusted to him by the rab-al-mal.

Appendix II:

Random-effect and fixed-effect model:

A random-effect model is a statistical model where the model parameters are random variables. It is a kind of hierarchical linear model, which assumes that the data being analyzed are drawn from a hierarchy of different populations whose differences relate to that hierarchy. In econometrics, random-effect model is used in panel analysis of hierarchical or panel data when one assumes no fixed effects (it allows for individual effects).

A fixed-effect model is a statistical model in which the model parameters are fixed or non-random quantities. In panel data where longitudinal observations exist for same subject, fixed effect represent the subject-specific means.

Appendix III:

Table 1 depicts variables' maximum value with standard deviation and mean value. This table contains a rundown of descriptive statistics of the variables.

Table 1: Descriptive Statistics of the Variables

Variable	Obs	Mean	Std. Dev.	Min	Max
Bank	40	4.5	2.320477	1	8
Year	40	3	1.43223	1	5
Roa	40	.091875	.0803279	.022	.424
Roe	40	.887275	.5495657	-.443	1.697
Nim	40	.021925	.008994	-.008	.035
Oe	40	.1879	.0876303	.068	.435
Ca	40	-.039475	.392885	-1.187	.185
Aq	40	.1315756	.2470961	0	.817
Size	40	4.26781	.5272844	3.058187	4.999032
Td	40	4.11292	.5518568	2.636388	4.9127719
Tl	40	4.077527	.5276127	2.936192	4.883299
capital ratio	40	-.051157	.3121488	-.957	.112

Table 2: Estimated Results: Fixed Effects Model for ROA

Roa	Coef.	Std. Err.	T	P > I t I	[95% Conf.	Interval]
Oe	.2268534	.3506587	0.65	0.524	-.4953417	.9490485
Ca	-1.889405	.3397404	-5.56	0.000	-2.589114	-1.189697
Aq	.5274701	.3602585	1.46	0.156	-.2144962	1.269436
Size	.3314983	.1424723	2.33	0.028	.0380712	.6249255
Td	.0117681	.1197829	0.10	0.923	-.2349294	.2584656
Tl	-.3714193	.162458	-2.29	0.031	-.7060078	-.0368309
capital ratio	1.093063	.2367525	4.62	0.000	.6054622	1.580664
_cons	.0124992	.2534222	0.05	0.961	-.5094336	.5344321
sigma_u	.51456014					
sigma_e	.02724061					
Rho	.99720523	(fraction of	Variance	due to	u_i)	

Table 3: Random Effects Model for ROA

roa	Coef.	Std. Err.	Z	P > I z I	[95% Conf.	Interval]
Oe	.2024311	.3200309	0.63	0.527	-.4248181	.8296802
Ca	-.8764013	.3871801	-2.26	0.024	-1.63526	-.1175422
Aq	-.1648923	.3225259	-0.51	0.609	-.7970314	.4672469
size	.2223395	.1464601	1.52	0.129	-.064717	.5093959
Td	-.2964392	.1217653	-2.43	0.015	-.5350947	-.0577836
Tl	.0769219	.1642739	0.47	0.640	-.245049	.3988927
capital ratio	.8282773	.312092	2.65	0.008	.2165882	1.439966
_cons	.0400019	.1364237	0.29	0.769	-.2273837	.3073875
sigma_u	0					
sigma_e	.02724061					
rho	0	(fraction of	variance	due to	u_i)	

Table 4: Hausman Test for ROA

	(b)	(B)	(b-B)	sqrt (diag (V_b-V_B))
	A	b	Difference	S.E.
Oe	.2268534	.2024311	.0244223	.1433238
Ca	-1.889405	-.8764013	-1.013004	.
Aq	.5274701	-.1648923	.6923624	.1605093
Size	.3314983	.2223395	.1091588	.
Td	.0117681	-.2964392	.3082073	.
Tl	-.3714193	.0769219	-.4483412	.
capitalratio	1.093063	.8282773	.2647858	.

b = consistent under Ho and Ha ;   obtained from xtreg

Table 5: Estimated Results: Fixed Effect Models for ROE

Roe	Coef.	Std. Err.	T	P > I t I	[95% Conf.	Interval]
Oe	2.978534	3.338831	0.89	0.381	-3.897917	9.854986
Ca	-.8670015	3.234871	-0.27	0.791	-7.529344	5.795341
Aq	-2.975202	3.430237	-0.87	0.394	-10.03991	4.089503
Size	.1716555	1.356564	0.13	0.900	-2.62224	2.965551
Td	.866352	1.140525	0.76	0.455	-1.482603	3.215307
Tl	-.1725428	1.54686	-0.11	0.912	-3.35836	3.013274
capital ratio	.0928096	2.254262	0.04	0.967	-4.549931	4.73555
_cons	-2.902684	2.412985	-1.20	0.240	-7.872319	2.066951
sigma_u	.3864681					
sigma_e	.25937416					
Rho	.6894513	(fraction of	Variance	due to	u_i)	

Table 6: Random Effects Model for ROE

Roe	Coef.	Std. Err.	Z	P > I z I	[95% Conf.	Interval]
Oe	-.8764946	2.519555	-0.35	0.728	-5.814731	4.061742
Ca	3.86723	3.04821	1.27	0.205	-2.107151	9.841612
Aq	.9235893	2.539197	0.36	0.716	-4.053145	5.900324
Size	-1.984953	1.153058	-1.72	0.085	-4.244905	.2749979
Td	-.741792	.9586393	-0.77	0.439	-2.620691	1.137107
Tl	2.510412	1.293303	1.94	0.052	-.0244156	5.045239
capital ratio	-2.366796	2.457052	-0.96	0.335	-7.1825	2.448938
_cons	2.248051	1.074043	2.09	0.036	.142965	4.353137
sigma_u	0					
sigma_e	.25937416					
Rho	0	(fraction of	Variance	due to	u_i)	

Table 7: Hausman Test for ROE

	(b)	(B)	(b-B)	sqrt (diag (V_b-V_B))
	P	Q	Difference	S.E.
Oe	2.978534	-.8764946	3.855029	2.190808
Ca	-.8670015	3.86723	-4.734232	1.082963
Aq	-2.975202	.9235893	-3.898791	2.306296
Size	.1716555	-1.984953	2.156609	.7146493
Td	.866352	-.741792	1.608144	.6179055
Tl	-.1725428	2.510412	-2.682954	.8486118
capitalratio	.0928096	-2.366796	2.459606	.

b = consistant under Ho and Ha;   obtained from xtr