The Determinants of Bank Profitability:

A Study of Islamic Banking Industry in Bangladesh

BUS 400: Internship [Fall 2017]

Internship Research Report on

The Determinants of Bank Profitability:

A Study of Islamic Banking Industry in Bangladesh

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Subject: Submission of Internship Research Report

Dear Sir:

I am pleased to submit my internship research report on "The Determinants of Bank Profitability: A Study of Islamic Banking Industry in Bangladesh" as a requirement for the Bachelor of Business Administration degree.

I have chosen to study on the Islamic banking profitability because I was enrolled in an internship program of Export Import Bank of Bangladesh Limited which is a Shariah based Islamic bank and also as a student of Finance I am very much interested in financial institutions. While writing the report, I have followed the general outline given by the internship coordinator. Relevant financial concepts are applied in the report that I have learned throughout my undergraduate level. I had to learn the basics of Stata, a statistical software to run the models used in the study. All the hypotheses and recommendations made in this paper are either influenced by related literature or made from my own logical assumption. However, I will be glad to clarify any discrepancy that may arise.

I have tried to prepare this report to the required standard. I look forward for your kind appraisal on this study.

Sincerely,

S. M. Rifat Hassan

ID: 13204105

ACKNOWLEDGEMENT

I am grateful to Allah for the good health and well-being that were necessary to complete this report. I wish to express my sincere thanks to my academic internship supervisor Mr. Ahmed Abir Choudhury, lecturer of BRAC Business School for permitting me to conduct the study. I would also like to thank Dr. Mark L. Burkey, Professor of Economics, North Carolina A&T State University for his invaluable lectures on handling of panel data on Youtube. Thanks to my on-site internship supervisor, Mr. Mohammad Tarequl Islam, Senior Principal Officer of Export Import Bank of Bangladesh Limited for allowing flexible office hours that helps me to spend enough time on the research report.

EXECUTIVE SUMMARY

The study attempts to identify the factors affecting Islamic banking profitability in Bangladesh, estimates relationship of these factors with bank profitability and suggests recommendations based on the findings to increase profitability. The paper has two main parts. The first part of the report starts with the organization overview of Export Import Bank of Bangladesh Limited where I was enrolled in a three-month period internship program. A brief organization history is positioned at the very first place. Vision and mission statements of the bank and core banking system come next. In addition, the main products of the bank are summarized. The banking products include investment products, deposit products, foreign exchange business and ancillary services. The next section highlights recent five year major financial data and year end share market information of 2016. The first part of the report ends with the description of mainstream Corporate Social Responsibilities carried out through the organization.

The second part of the report consists of five chapters of research process. A background of the overall performance of the Bangladesh banking industry is written in the introduction of the research. Three research questions are set in the next place and research objectives are formed based on the questions. Under the scope of the research, list of Islamic banks in Bangladesh, selected Islamic banks for the research and time range of data are mentioned. The first chapter concludes with the limitations and significance of the study. In the second chapter, around twenty literatures are reviewed related to the bank profitability. Based on the literature review, in the third chapter of the study, the endogenous and exogenous variables are chosen, seven hypotheses and three different model equations are formed. The study takes return on assets, return on equity and net investment margin as the measure of profitability. Besides, bank size, capital to risk assets ratio, investment to deposit ratio, percentage of non-performing investment and cost to income ratio are taken as the company specific exogenous factors. Economic growth and inflation are also considered as macro-economic independent determinants. Fixed effect or random effect models are used to run all three equations. The appropriate model for each equation is chosen based on Hausman Test. In the fourth chapter, data analysis and findings are presented. Investment to deposit ratio is found to be positively correlated and cost to income ratio is observed to be negatively correlated to profitability in all the three models. Based on the findings, the conclusions and recommendations are given in the last chapter of the study.

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PART 1 OF THE REPORT: COMPANY PROFILE

Organization History

Export Import Bank of Bangladesh Limited is one of the leading private commercial banks in Bangladesh. The Bank came into operation as a commercial bank on 3rd August 1999 as per rules and regulations of Bangladesh Bank. The bank was established under the leadership of Late Mr. Shahjahan Kabir who had a long dream of floating a commercial bank which would contribute to the socio-economic development of the country. From its establishment the bank was known as Bengal Export Import Bank Limited, in short BEXIM Bank. But due to legal constraints, later in the same year of establishment, the bank was renamed Export Import Bank of Bangladesh Limited, shortly known as EXIM Bank. By July 2004, the bank has migrated all of its conventional banking operations into Shariah based Islamic banking. Currently the bank has operations across the country with 115 branches and 63 ATM booths.

Vision

The gist of their vision is 'Together Towards Tomorrow'. Export Import Bank of Bangladesh Limited believes in togetherness with its customers, in its march on the road to growth and progress with service. To achieve the desired goal, there will be pursuit of excellence at all stages with climate of continuous improvement, because, in EXIM bank, they believe, the line of excellence is never ending. Bank's strategic plans and networking will strengthen its competitive edge over others in rapidly changing competitive environment. Its personalized quality services to the customers with trend of constant improvement will be the cornerstone to achieve their operational success.

Mission

- Provide quality financial services especially in Foreign Trade
- Continue a contemporary technology based professional banking environment
- Maintain corporate & business ethics and transparency at all levels
- Sound Capital Base
- Ensure sustainable growth and establish full value to the honorable stakeholders
- Fulfill its social commitments

- Add positive contribution to the national economy

Core Banking System

Export Import Bank of Bangladesh Limited uses the T24 Islamic Banking Solution of Temenos. The system is both Shariah compliant and commercially flexible. T24 for Islamic banking helps the organization enhancing productivity, increasing efficiency, mitigating risk, expanding channels-to-market, lowering costs, improving customer service, optimizing up-sell and cross-sell opportunities, driving growth, and boosting profitability.

Summary of Primary Products

Investment	Deposit
▪ Retail investment	▪ Current Deposit
▪ Corporate Finance	▪ Mudaraba Special Notice Deposit
▪ Industrial Finance	▪ Savings Account
▪ Project Finance	▪ Mudaraba Savings Deposit Scheme
▪ Syndicate investment	▪ Mudaraba Term Deposit
▪ SME Finance	▪ Mudaraba Cash Waqf Deposit*
▪ Agricultural finance	

***Profit paid on this deposit is spent for religious, educational and social services*

Foreign Exchange Business

- Import Finance
- Export Finance
- Remittance

Ancillary Services

- Locker Services
- Cards (Gift/Prepaid/Travel)
- Internet Banking (AISER)
- SMS Banking

- Mobile Banking (EXIM Cash)

5 Year Financial Highlights

Year	2016	2015	2014	2013	2012	Average
Return on Asset	1.06%	0.88%	1.16%	1.06%	1.45%	1.12%
Return on Equity	11.32%	9.06%	11.35%	10.27%	13.86%	11.17%
Net Investment Margin	3.41%	3.58%	3.64%	3.07%	3.76%	3.49%
Capital Adequacy Ratio	11.77%	12.04%	11.70%	13.19%	10.87%	11.91%
Investment to Deposit Ratio	89.38%	87.22%	88.84%	86.79%	84.22%	87.29%
Non-Performing Investment	5.23%	4.69%	3.23%	3.67%	4.27%	4.22%
Operational Efficiency	45.94%	41.49%	41.25%	39.58%	34.03%	40.46%

Share Market Information (Dhaka Stock Exchange)

Particulars	Information
Year of IPO	2004
Authorized Capital	Tk. 20,000.00 Million
Paid-up Capital	Tk. 14,122.50 Million*
Market Lot	100 Shares
Face Value	Tk. 10.00/Share
Market Price	Tk. 11.70/Share*
EPS	Tk. 2.08*
P/E Ratio	5.62*

**Based on 2016 Year End Data*

Corporate Social Responsibilities

At least 2% of the annual profit of every year is spent on Corporate Social Responsibilities (CSR) activities. The mainstream CSR activities carried out through this organization are:

- Healthcare service
- Scholarship program for brilliant poor student
- Education Promotion Scheme
- Helping people affected by natural calamities
- Helping people in slum areas
- Donation to educational institutions to setup computer lab
- Beautification of Dhaka City

PART 2 OF THE REPORT: RESEARCH STUDY

2.1 GENERALITIES TO THE STUDY

2.1.1 Introduction of the Study

The bank performance and its determinants have been a widely chosen topic in the area of business research because banks play a very important role in the national economic growth. This study focuses on the Islamic banking sector of Bangladesh and attempts to identify the factors that influence the bank profitability. There are 57 scheduled banks in Bangladesh those operate under full control and supervision of Bangladesh Bank. The financial system in Bangladesh is relatively small with an under developed banking system. This banking system faces many challenges. Non-performing loans are at an alarming percentage that lower the banks' return. NPL ratio stood at 10.1 % in June 2017. The amount of accumulated default loans stood at around Tk. 1,19,000 crore, which is 12% of Bangladesh's total GDP. On the other hand, many banks cannot maintain the standard level of capital to risk assets ratio prescribed by Basel framework. Some banks maintain a very high CRAR, where some banks cannot maintain the minimum level of CRAR. Both high and low CRAR affect the level of risk and the profitability of banks. In June 2017, Bangladesh banking industry's average CRAR was 10.86%. Under Basel III, banks have to maintain 11.2% as capital of their risk-weighted assets, which will be 12.19% in 2019. In addition, huge amount of idle cash in banks' vaults due to less investment opportunities decreases the loan to deposit ratio. Moreover, an increasing rate of cost to income ratio drops the banks' operating profit. Macro-level factors like economic growth, rate of inflation, corporate tax rate also affect bank performance. On the other side, Islamic banking is more risk adverse in its investment practices. Currently eight full-fledged Islamic banks are operating within the country. Moreover, 19 Islamic banking branches of nine commercial banks and 25 Islamic banking windows of eight commercial banks are also providing Islamic financial services. Islamic banking covers 22.72% market share of the country's entire banking sector in terms of deposits and investments. A country with a 90% Muslim population, overall 84% approves the Islamic banking.

2.1.2 Research Questions

- What are the company-specific and macro-environment factors that affect the profitability of Islamic banking industry in Bangladesh?
- How does Islamic banking profitability correlate with company-specific and macro-environment determinants?
- What could be the possible ways for Islamic banks to increase their profitability?

2.1.3 Research Objectives

- To identify the company-specific and macro-environment factors of Islamic banking profitability in Bangladesh
- To estimate the relationship of bank profitability with company-specific and macro-environment determinants
- To recommend possible ways of increasing the profitability of Islamic banks

2.1.4 Scope of the Research

In this study, seven-year data of all the full-fledged Islamic banks have been taken for observation. The selected banks have overall satisfactory performance in the industry except ICB Islamic Bank Limited. 2010-2016 data are considered for the study. For the Union Bank Limited, 2013-2016 data are taken because the bank started its operation in 2013.

List of full-fledged Islamic banks in Bangladesh

Name of the Bank	Taken for Observation?	Data Range
Export Import Bank of Bangladesh Limited	Yes	2010—2016
Islami Bank Bangladesh Limited	Yes	2010—2016
Shahjalal Islami Bank Limited	Yes	2010—2016
Social Islami Bank Limited	Yes	2010—2016
First Security Islami Bank Limited	Yes	2010—2016
Al-Arafah Islami Bank Limited	Yes	2010—2016
ICB Islamic Bank Limited	Yes	2010—2016
Union Bank Limited	Yes	2013—2016

2.1.5 Limitation of the Research

- The Islamic banking industry of Bangladesh is too small to conduct a research. Only 14% of the total number of banks are full-fledged Islamic banks.
- Only seven years data are taken for the study due to no access in any databases for bank financial data, i.e. Bankscope.

2.1.6 Significance of the Study

The findings of this study will help the readers to understand the company specific and macro-level determinants that affects the profitability of Islamic banking and also how the factors are related to profitability. The study might change their generalized way of perception regarding the factors influencing bank profitability. The paper might also be used to develop better models to explain the profitability.

2.2 LITERATURE REVIEW

A number of researchers attempt to identify the major determinants of bank performance in their studies. While they aim to measure the bank performance, they used to consider bank profitability as the major performance indicator. Most of the studies suggest that return on asset (ROA), return on equity (ROE) and net interest margin (NIM) describe the bank profitability accurately. Whether it is a financial organization or a non-financial organization, both ROA and ROE measure an institution's ability to generate earnings from its investments. But they do not exactly represent the same thing. Together they provide a better representation of an organization's performance. On the other hand, NIM, which is generally related to financial organizations, i.e. bank and non-bank financial institutions gauges the percentage of net interest income over the total earning asset. For Islamic banks, as they do not grant loans, they cannot mention interest income in their income statement, instead they invest in different sectors, get return from the investments and mention investment income in their financial statements. So, net interest margin is actually net investment margin for Islamic banks, more specifically net investment income margin.

The profitability of bank is significantly correlated with different bank specific and macro-level variables. Under the bank specific variables, highly considered factors are bank size, reserve requirement, capital adequacy ratio, percentage of non-performing loan, liquidity ratio, cost to income ratio and so on. Under external or macro-economic factors, change in GDP, inflation rate, tax rate, unemployment rate etc. are used. Some authors consider dummy variables to see the relationship between profitability and different qualitative factors. General models used in the analyses are pooled OLS regression, fixed effect and random effect model. Most of the datasets of such studies are panel data and to test whether fixed effect or random effect model is appropriate, the Hausman test is applied. Popular statistical software used in the studies are Stata, R Code and SPSS. Excel is not specially designed for statistical analyses and cannot handle all types of data.

In a Tunisia based study, Chouikh and Blagui (2017) find that bank profitability is negatively correlated with board size. That means the more number of officials are present in the board of directors, the lower is the bank performance and vice versa. Instead of leading to wiser decision making, a larger board would result in ineffective initiatives. On the other hand, bank size is positively correlated with bank profitability. The higher the bank size, the better the bank performance. Finally, the exogenous variable privatization is evidenced to be statistically significant and positively correlated to bank performance. Therefore, State-owned banks should reconsider the option of being privatized. They consider ROA, ROE and Price to Book value (P/B) ratio as the indicator of profitability. The study applies panel-data model regressions to check relationship between endogenous and exogenous variables. Other than board size, bank size and privatization, they also consider cost of efficiency, capital to asset as bank specific variables and GDP growth rate and inflation as macro-level variables, but no significant relationship is found between bank profitability and these variables.

In another study based on Nigeria, Ozili and Uadiale (2017) argue that banks with high concentrated ownership have higher ROA, NIM and recurring earnings power while banks with dispersed ownership have the lowest ROA and have the highest return on equity. The result implies that the first type of banks have better operational performance where the second type of banks provide better returns to shareholders. They use static and dynamic estimation techniques to conduct the research. They employ four measures of bank profitability as a

function of capital adequacy, cost efficiency, regulatory capital ratio, asset quality and macro-economic growth rate.

Titko, Skvarciany and Jureviciene (2015) study the drivers of bank profitability by taking a sample from Latvian and Lithuanian banking sector where they found that there is a statistically significant positive relationship between bank profitability expressed by ROE and bank size expressed by the volume of deposits. In addition to that a statistically significant positive relationship is found between cost-to-income ratio and bank profitability expressed by NIM. Their regression analysis indicates a negative relationship between commission income as a percentage of total assets and number of branches. The researchers use a multiple linear regression analysis as a core method.

Another study that is conducted by Pervan, Pelivan and Arneric (2015) states that profitability from the previous year, bank size, solvency risk, intermediation, industry concentration, market growth and GDP growth are statistically significant variables with a positive influence on bank profitability while variables of credit risk, inflation and operating expenses management has a negative and statistically significant impact on profitability. The study is conducted for the 2002–2010 period taking the data from Croatian banking industry and ROA is used as an endogenous variable in the model of bank profitability. They apply a Generalized Method of Moment estimation proposed by Arellano and Bond.

A research based on the banking industry of Bangladesh, Samad (2015) claims that loan deposit ratio, credit risk, capital risk and bank efficiency are significant factors for determining the profitability of Bangladesh banking industry. Macro-level variables such as inflation rate and market structure behavior are excluded in this study. The author uses ROA to measure the profitability. Panel Ordinary least square is applied for estimating the impact of bank-specific characteristics and macro-level variables on bank profitability.

In another study based on the banking sector of Bangladesh, Hossain and Ahamed (2015) argue that variables like total interest income, non-interest income, capital, loans & advances,

operating expenditure, deposit, size and non-performing loans have some significant impact on the profitability. The study uses ROA, ROE and NIM as the measure of profitability. The study takes top 15 conventional private commercial banks' data from the period of 2012-2016 and banks are selected based on the asset size. The authors apply mixed effect model to test the hypotheses.

Petria, Capraru and Ihnatov (2015) consider a sample from EU 27 banking systems to assess the main determinants of banks' profitability. The study highlights that credit and liquidity risk, management efficiency, the diversification of business, the market concentration and the economic growth have influence on bank profitability. The profitability is measured by ROA and ROE. They use the Hausman test to select the appropriate estimation method between fixed effect and random effect model and then reach the decision to use fixed effect model as the appropriate method for their dataset.

In another study based on Macedonian banks Iloska (2014) concludes that profitability is positively affected by productivity, bank size, balance sheet structure, capitalization and non-interest income, and negatively by operating expenses, credit and liquidity risk. In the study, ROA is used as the endogenous variable and the author runs simple ordinary least squares (OLS) method. The study suggests that development of the Macedonian banking system depends on its efficiency, profitability and competitiveness and banks need to find a way to make the optimal utilization of their resources, while minimizing the expenses and losses.

Zhang and Dong (2011) claim that bank-specific variables such as capital ratio, loans and deposits are positively related to bank performance when the performance is measured by ROA. However, when ROE is used as performance indication, there exist to be a negative relationship between capital ratio and ROE. On the other hand, bank size is positively correlated with bank profitability when small-sized and large banks are taken into consideration. For medium-sized banks, the study finds a negative relationship between size and bank profit. Moreover, GDP is found to be positively correlated with bank profitability.

In another Bangladesh based study, Sufian and Habibullah (2009) state that loans intensity, credit risk, and cost have positive and significant impacts on bank performance, while non-interest income exhibits negative relationship with bank profitability. The dependent variables used in the study are ROA, ROE and NIM. They use unbalanced panel data and apply multiple linear regression model to test the relationship between bank profitability and the bank specific and macroeconomic determinants.

Hassan (n.d.) conducts a study on the determinants of Islamic banking profitability where he finds that the Islamic banks' profitability responds positively to the increases in capital and negatively to loan ratios. The study also indicates the importance of consumer and short-term funding, non-interest earning assets and overhead in promoting profits. The author suggests that reserve requirement does not have a significant impact on the profitability measures. Macro-level factor, GDP shows a strong positive correlation to the profitability where inflation rate does not have significant impact. Bank size is also negatively correlated to bank profitability. The study uses four measures of performance, the net non-interest margin, profit margin, return on asset, and returns on equity. The data used in the study are cross-country bank-level data.

Moreover, Haque and Tariq (2012), Weber (2005), Kapoor (2004), Molyneux and Wilson (2004), Mamatzakis and Remoundos (2003), Naceur (2003), Hoggarth, Milne and Wood (1998), Angbzo (1997), Berger (1995), Molyneux and Thornton (1992), Goddard, Molyneux and Thornton (1992) study on the determinants of bank performance and found significant relationship of profitability with core banking ratios and major macro-economic variables.

2.3 METHODOLOGY

2.3.1 Data

Seven-year (2010—2016) data of eight Islamic banks from the banking industry of Bangladesh are taken for the study. Data that used in the study are secondary data. Company specific data are collected from the annual reports of the banks. All the data taken in the study were not directly available in the financial reports. Some data, i.e. net investment margin and operating

efficiency are calculated by using the proper numerators and denominators given in the financial statements. For the bank size, natural logarithm of total asset is considered. Macro-level data are collected from World Bank Database. The type of the data used for the research are panel data that have both times series and cross sectional characteristics. Panel data can be classified into two sections, one is balanced panel data and another is unbalanced panel data. This study uses unbalanced panel data because one banks have the dataset for four years and all other have seven years of data.

2.3.2 The Variables

2.3.2.1 The Endogenous Variables

Three endogenous variables are taken as a measure of profitability. Most of the studies claim that these three variables can well explain the profitability of a banking organization.

Return on Assets (ROA)

Return on Assets equals net income after tax divided by total assets over a given period. A ROA of 5% means that the company generates ৳5 of net profit by employing every ৳100 of assets. The higher the ROA, the more efficient the company about using its assets.

Return on Equity (ROE)

Return on Equity equals net income divided by total common equity over a given period. A ROE of 10% means that the common stockholders have earned ৳10 for every ৳100 invested in the company. The higher the ROE, the more efficient the company about employing its equity.

Net Investment Margin (NIM)

The ratio is only relevant for financial organizations. NIM is commonly known as Net Interest Margin for conventional banking organizations. In Islamic banking, net Investment Margin equals investment income minus profit paid on deposits divided by total profit earning assets

over a given period. Simply put, NIM is the net investment income relative to the total amount of profit earning assets. The major portion of Islamic bank's profit earning assets consist of long term and short term investments. A NIM of 3% means that the company generates ৳3 of net investment income by employing every ৳100 of profit earning assets. For conventional banking organizations, the ratio equals interest income minus interest expense divided by total interest earning assets.

List of Endogenous Variables

Endogenous Variables	Formula
Return on Asset (ROA)	Net Income/Total Asset
Return on Equity (ROE)	Net Income/Total Equity
Net Investment Margin (NIM)	Net Investment/Profit Earning Asset

2.3.2.2 The Exogenous Variables

Total seven variables are considered as independent factors. These variables are classified into two sections, company specific or micro-economic exogenous variables and environment specific or macro-level exogenous variables. Five company specific and two macro-level variables are taken for this study. Studies suggest that these variables have significant impacts on the profitability of a banking institution.

Bank Specific Exogenous Variables

Size

Natural logarithm of total assets over a given period is considered as the size of an organization. For a banking institution, studies argue that logarithm of total investments or logarithm of total deposits can also be taken as the size of a bank. It is expected that the large the size of a bank, the more profitable it is. Because a large bank can attain economy of scale and can reduce the operating cost. Therefore, it is expected that $\partial\pi/\partial SIZE>0$

Capital to Risk Assets Ratio (CRAR)

CRAR equals bank's Tier 1 capital plus Tier 2 capital divided by total risk weighted assets over a given period. Tier 1 capital is bank's core capital, i.e. common equity and retained earnings. Tier 2 capital is bank's supplementary capital, i.e. subordinated debt instruments. Total risk weighted assets are calculated by multiplying bank's earning assets by appropriate risk-weight. For example, an Islamic bank can assign 100% risk weight to corporate investments and 20% risk weight to interbank deposits. CRAR ensures the efficiency and stability of a nation's financial system by lowering the risk of banks becoming insolvent. The ratio is calculated under the Basel III framework. Under the latest framework, current CRAR standard is 11.2% for all banks. The higher the ratio, the higher the risk aversion of a bank and the higher risk aversion means low profits. So, it is expected that $\partial\pi/\partial CRAR<0$

Liquidity

The liquidity of a bank can be measured by several ratios. In this study, investment to deposit ratio over a given period is taken as a measure of bank's liquidity. The ratio can be assessed by dividing the bank's total investments by its total deposits. In conventional banking, it is called loan to deposit ratio. A high ratio means that the bank may not have enough liquidity to cover any unforeseen fund requirements. At the same time, when a bank transforms a higher percentage of its deposit into investments, the bank is expected to generate more profits, thus $\partial\pi/\partial LIQUIDITY>0$

Non-Performing Investment (NPI)

Percentage of NPI equals non-performing investment divided by total investment over a given period. Non-performing investment is also called classified investment. In conventional banking, non-performing investment is called non-performing loan (NPL) or classified loan. It is the best measure of bank's credit risk. The higher the NPI, the lower the profit, therefore, $\partial\pi/\partial NPI<0$

Operating Efficiency

Operating Efficiency is calculated by dividing the operating expense by operating income over a given period. It is also called cost to income ratio. It shows how efficiently a bank can generates profit from its operations. It is expected that the higher the operating expense per dollar of income, the lower the bank profit, so, $\partial\pi/\partial EFFICIENCY<0$

List of Bank Specific Exogenous Variables

Bank Specific Exogenous Variables	Formula	Expected Effect
Size	Natural Logarithm of Total Asset	+
Capital to Risk Assets (CRAR)	Capital/Risk Weighted Assets	-
Liquidity	Total Investment/Total Deposit	+
Non-Performing Investment (NPI)	Non-Performing Investment/Total Investment	-
Efficiency	Operating Expense/Operating Income	-

Macro-Level Exogenous Variables

GDP Growth

Nominal GDP growth equals recent year GDP divided by previous year GDP minus 1. Then it is adjusted to inflation to get the real GDP growth. Studies suggest that the growth of economy creates more opportunities for investments and when more investments are made, the profitability of bank is expected to increase, thus $\partial\pi/\partial$GROWTH>0

Inflation

Consumer Price Index (CPI) is a popular measure of inflation. The higher the inflation rate, the higher interest rate. It is expected that higher interest rate increase banks' profitability as the interest rate spread will increase, therefore, $\partial\pi/\partial$INFLATION>0

List of Macro-Level Exogenous Variables

Macro-Level Exogenous Variable	Source	Expected Effect
Growth	World Bank Database	+
Inflation	World Bank Database	+

2.3.3 Summary of Variables

Variable	ROA	ROE	NIM	SIZE	CRAR	LIQUIDITY	NPI	EFFICIENCY	INFLATION	GROWTH
Minimum	-9.97%	1.44%	0.67%	23.23	-108.49%	60.08%	0.00%	23.50%	6.20%	5.60%
Maximum	3.54%	36.22%	4.60%	27.40	34.46%	113.00%	77.52%	301.65%	10.70%	7.10%
Mean	0.58%	12.98%	3.32%	25.49	0.55%	86.79%	11.83%	61.85%	7.44%	6.35%
SD	2.52%	6.35%	0.87%	1.08	32.74%	7.13%	22.50%	49.71%	1.43%	0.45%

2.3.4 The Hypotheses

Seven hypotheses are formed for the study. A hypothesis will be completely accepted if the coefficient estimate is statistically significant and its sign is shown as expected. It will be partially accepted if the coefficient estimate is not statistically significant but the sign is as predicted. Otherwise, a hypothesis will be rejected.

List of Hypotheses

Hypothesis	Description
H1	Profitability is positively and significantly correlated to bank size
H2	Profitability is negatively and significantly correlated to capital to risk assets
H3	Profitability is positively and significantly correlated to investment to deposit ratio
H4	Profitability is negatively and significantly correlated to non-performing investment
H5	Profitability is negatively and significantly correlated to operating efficiency
H6	Profitability is positively and significantly correlated to inflation rate
H7	Profitability is positively and significantly correlated to GDP growth

2.3.5 General Model of the Study

The general model attempts to measure the relationship between the endogenous variable (bank profitability) and the exogenous variables (company specific and macro-environment). The general model is estimated by the following equation:

$$PROFITABILITY_t = f\,(SIZE_t, CRAR_t, LIQUIDITY_t, NPI_t, EFFICIENCY_t, INFLATION_t, GROWTH_t)$$

Where profitability is a function of all these seven variables at time t. Three specific models are established to express three endogenous variables taken for the study.

Model 1

The first model of the study estimates the statistical relationship between the endogenous variable ROA and the seven exogenous variables. The equation is as follows:

$$ROA_t = \alpha_0 + \alpha_1 \times SIZE_t + \alpha_2 \times CRAR_t + \alpha_3 \times LIQUIDITY_t + \alpha_4 \times NPI_t + \alpha_5 \times EFFICIENCY_t + \alpha_6 \times INFLATION_t + \alpha_7 \times GROWTH_t + U_t$$

Where α_0 is the intercept or constant of the model, α_k $(k=1,2,3,\ldots,7)$ are the coefficients to be estimated, and U_t is the error term of the equation.

Model 2

The second model of the study estimates the statistical relationship between the endogenous variable ROE and the seven exogenous variables. The equation is as follows:

$$ROE_t = \beta_0 + \beta_1 \times SIZE_t + \beta_2 \times CRAR_t + \beta_3 \times LIQUIDITY_t + \beta_4 \times NPI_t + \beta_5 \times EFFICIENCY_t + \beta_6 \times INFLATION_t + \beta_7 \times GROWTH_t + V_t$$

Where β_0 is the intercept or constant of the model, β_k $(k=1,2,3,\ldots,7)$ are the coefficients to be estimated and V_t is the error term of the equation.

Model 3

The third model of the study estimates the statistical relationship between the endogenous variable NIM and the seven exogenous variables. The equation is as follows:

$$NIM_t = \gamma_0 + \gamma_1 \times SIZE_t + \gamma_2 \times CRAR_t + \gamma_3 \times LIQUIDITY_t + \gamma_4 \times NPI_t + \gamma_5 \times EFFICIENCY_t + \gamma_6 \times INFLATION_t + \gamma_7 \times GROWTH_t + W_t$$

Where γ_0 is the intercept or constant of the model, γ_k $(k=1,2,3,\ldots,7)$ are the coefficients to be estimated and W_t is the error term of the equation.

A significantly positive coefficient estimate shows a statistically significant positive relationship between the bank profitability and the corresponding factors. On the other hand, a significantly negative coefficient estimate shows a statistically significant negative relationship between the bank profitability and the corresponding factors.

2.3.6 Methods for Data Analysis

To analysis panel data, researchers generally use three methods. They are pooled regression, fixed effect or LSDV model and random effect model. If the pooled regression is used, it will not distinguish between the various banks that the data set have. Simply put, the model will combine all the banks together and will deny the heterogeneity or individuality that may exist among the eight banks. On the other hand, fixed effect model allows the heterogeneity or individuality among the banks by allowing to have its own intercept value. If all the banks have a common mean value for the intercept, the random effect model will be appropriate. The pooled regression model will not be considered for this study due to its major pitfall. The study will use fixed effect model or random effect model to estimate the relationships among endogenous and exogenous variables. But first it has to be find out that which method (fixed effect or random effect) is accurate for the taken dataset. Hausman test is a widely used test to choose the proper method of analyzing panel data. In this study, the Hausman test will be conducted three times for three model equations to see which method is appropriate for which equation. The hypotheses will be checked at a significance level of 0.05. This study uses Stata 13 to run all the tests and model equations.

2.4 DATA ANALYSIS AND FINDINGS

2.4.1 Hausman Test for Model 1 (ROA)

Null Hypothesis	Random Effect Model is appropriate
Alternative Hypothesis	Fixed Effect Model is appropriate

```
. hausman Fixed .
```

	Coefficients (b) Fixed	(B) Random	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
SIZE	-.0160474	-.0001345	-.0159129	.0028312
CRAR	-.0558462	-.1165032	.060657	.
LIQUIDITY	.0436173	-.0694457	.1130631	.
NPI	.2295759	-.2527322	.4823081	.0542306
EFFICIENCY	-.0013074	.0017256	-.003033	.
INFLATION	-.0546137	.0219308	-.0765444	.
GROWTH	.1016464	-.6679758	.7696222	.

```
                b = consistent under Ho and Ha; obtained from xtreg
 B = inconsistent under Ha, efficient under Ho; obtained from xtreg

    Test:  Ho:  difference in coefficients not systematic

                  chi2(7) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                          =       60.13
                Prob>chi2 =      0.0000
                (V_b-V_B is not positive definite)
```

Hausman Test Result for Model 1	Null Hypothesis Rejected

2.4.2 Model 1 Parameters

```
Fixed-effects (within) regression               Number of obs      =        53
Group variable: CODE                            Number of groups   =         8

R-sq:  within  = 0.8031                         Obs per group: min =         4
       between = 0.9318                                        avg =       6.6
       overall = 0.5751                                        max =         7

                                                F(7,38)            =     22.14
corr(u_i, Xb)  = -0.9888                        Prob > F           =    0.0000
```

ROA	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
SIZE	-.0160474	.0040144	-4.00	0.000	-.0241741	-.0079207
CRAR	-.0558462	.0175231	-3.19	0.003	-.0913199	-.0203725
LIQUIDITY	.0436173	.0221079	1.97	0.056	-.0011377	.0883724
NPI	.2295759	.064776	3.54	0.001	.0984438	.3607079
EFFICIENCY	-.0013074	.0057018	-0.23	0.820	-.0128502	.0102354
INFLATION	-.0546137	.0876577	-0.62	0.537	-.2320674	.1228401
GROWTH	.1016464	.2934735	0.35	0.731	-.4924597	.6957525
_cons	.3485084	.0883128	3.95	0.000	.1697284	.5272884
sigma_u	.10648418					
sigma_e	.00667082					
rho	.99609081	(fraction of variance due to u_i)				

```
F test that all u_i=0:     F(7, 38) =    17.36                 Prob > F = 0.0000
```

2.4.3 Hypothesis Acceptance or Rejection based on Model 1

Hypothesis	Exogenous Variables	Statistical Significance	Expected Effect	Estimated Effect	Result
H1	Bank Size	Significant	Positive	Negative	Rejected
H2	Capital to Risk Assets	Significant	Negative	Negative	Accepted
H3	Liquidity	Significant	Positive	Positive	Accepted
H4	Non-Performing Investment	Significant	Negative	Positive	Rejected
H5	Operating Efficiency	Insignificant	Negative	Negative	Partially Accepted
H6	Inflation	Insignificant	Positive	Negative	Rejected
H7	GDP Growth	Insignificant	Positive	Positive	Partially Accepted

2.4.4 Hausman Test for Model 2 (ROE)

Null Hypothesis	Random Effect Model is appropriate
Alternative Hypothesis	Fixed Effect Model is appropriate

```
. hausman Fixed .
```

	Coefficients			
	(b) Fixed	(B) Random	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
SIZE	-.0283411	-.0001246	-.0282165	.0209533
CRAR	-.0270514	-.036034	.0089826	.0525756
LIQUIDITY	.6206129	.6227786	-.0021656	.0901757
NPI	-.1650613	-.056318	-.1087433	.3466825
EFFICIENCY	-.0450421	-.0423136	-.0027286	.0179608
INFLATION	-.3655628	.0591269	-.4246897	.2797581
GROWTH	-1.829416	-3.194616	1.3652	1.10796

```
                b = consistent under Ho and Ha; obtained from xtreg
 B = inconsistent under Ha, efficient under Ho; obtained from xtreg

    Test:  Ho:  difference in coefficients not systematic

                  chi2(7) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                          =        3.21
                Prob>chi2 =      0.8647
```

Hausman Test Result for Model 2	Failed to Reject the Null Hypothesis

2.4.5 Model 2 Parameters

```
Random-effects GLS regression                   Number of obs      =        53
Group variable: CODE                            Number of groups   =         8

R-sq:  within  = 0.6860                         Obs per group: min =         4
       between = 0.9066                                        avg =       6.6
       overall = 0.7158                                        max =         7

                                                Wald chi2(7)       =    113.32
corr(u_i, X)   = 0 (assumed)                    Prob > chi2        =    0.0000
```

ROE	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
SIZE	-.0001246	.0080232	-0.02	0.988	-.0158498	.0156005
CRAR	-.036034	.0826307	-0.44	0.663	-.1979873	.1259193
LIQUIDITY	.6227786	.0844768	7.37	0.000	.4572071	.78835
NPI	-.056318	.1043312	-0.54	0.589	-.2608034	.1481674
EFFICIENCY	-.0423136	.0263249	-1.61	0.108	-.0939094	.0092822
INFLATION	.0591269	.4022027	0.15	0.883	-.729176	.8474298
GROWTH	-3.194616	1.209497	-2.64	0.008	-5.565186	-.8240463
_cons	-.1759886	.1996801	-0.88	0.378	-.5673544	.2153773
sigma_u	0					
sigma_e	.03728406					
rho	0	(fraction of variance due to u_i)				

2.4.6 Hypothesis Acceptance or Rejection based on Model 2

Hypothesis	Exogenous Variables	Statistical Significance	Expected Effect	Estimated Effect	Result
H1	Bank Size	Insignificant	Positive	Negative	Rejected
H2	Capital to Risk Assets	Insignificant	Negative	Negative	Partially Accepted
H3	Liquidity	Significant	Positive	Positive	Accepted
H4	Non-Performing Investment	Insignificant	Negative	Negative	Partially Accepted
H5	Operating Efficiency	Insignificant	Negative	Negative	Partially Accepted
H6	Inflation	Insignificant	Positive	Positive	Partially Accepted
H7	GDP Growth	Significant	Positive	Negative	Rejected

2.4.7 Hausman Test for Model 3 (NIM)

Null Hypothesis	Random Effect Model is appropriate
Alternative Hypothesis	Fixed Effect Model is appropriate

```
. hausman Fixed .
```

	Coefficients (b) Fixed	(B) Random	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
SIZE	.0030253	.0036612	-.000636	.0022595
CRAR	-.0057696	.0052553	-.011025	.
LIQUIDITY	-.0050657	.0078668	-.0129325	.00839
NPI	-.0512477	.0235948	-.0748426	.040572
EFFICIENCY	-.0136776	-.0135116	-.000166	.
INFLATION	-.0238225	.0031117	-.0269341	.
GROWTH	.3172885	.303148	.0141405	.0826646

```
                b = consistent under Ho and Ha; obtained from xtreg
 B = inconsistent under Ha, efficient under Ho; obtained from xtreg

    Test:  Ho:  difference in coefficients not systematic

                  chi2(7) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                          =        0.34
                Prob>chi2 =      0.9998
                (V_b-V_B is not positive definite)
```

Hausman Test Result for Model 3	Failed to Reject the Null Hypothesis

2.4.8 Model 3 Parameters

```
Random-effects GLS regression                   Number of obs      =        53
Group variable: CODE                            Number of groups   =         8

R-sq:  within  = 0.5230                         Obs per group: min =         4
       between = 0.5891                                        avg =       6.6
       overall = 0.5634                                        max =         7

                                                Wald chi2(7)       =     54.19
corr(u_i, X)   = 0 (assumed)                    Prob > chi2        =    0.0000
```

NIM	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
SIZE	.0036612	.0014761	2.48	0.013	.0007681	.0065543
CRAR	.0052553	.0122167	0.43	0.667	-.0186889	.0291996
LIQUIDITY	.0078668	.0122689	0.64	0.521	-.0161797	.0319134
NPI	.0235948	.0158256	1.49	0.136	-.0074228	.0546124
EFFICIENCY	-.0135116	.0039761	-3.40	0.001	-.0213045	-.0057186
INFLATION	.0031117	.0590418	0.05	0.958	-.1126081	.1188314
GROWTH	.303148	.1791522	1.69	0.091	-.0479838	.6542797
_cons	-.0808576	.0360266	-2.24	0.025	-.1514684	-.0102468
sigma_u	.00202857					
sigma_e	.00448483					
rho	.1698424	(fraction of variance due to u_i)				

2.4.9 Hypothesis Acceptance or Rejection based on Model 3

Hypothesis	Exogenous Variables	Statistical Significance	Expected Effect	Estimated Effect	Result
H1	Bank Size	Significant	Positive	Positive	Accepted
H2	Capital to Risk Assets	Insignificant	Negative	Positive	Rejected
H3	Liquidity	Insignificant	Positive	Positive	Partially Accepted
H4	Non-Performing Investment	Insignificant	Negative	Positive	Rejected
H5	Operating Efficiency	Significant	Negative	Negative	Accepted
H6	Inflation	Insignificant	Positive	Positive	Partially Accepted
H7	GDP Growth	Insignificant	Positive	Positive	Partially Accepted

2.5 CONCLUSIONS AND RECOMMENDATIONS

2.5.1 Conclusions

The study aims to find out the determinants of Islamic banking profitability in Bangladesh over a period of 2010—2016 and estimates the relationship between the bank profitability and seven candidate exogenous variables. Bank profitability is measured by ROA, ROE and NIM, and therefore, three models are proposed. The study uses panel data and fixed effect model or random effect model are applied to estimate all three equations. Based on the study, when bank profitability is measured by ROA, capital to risk assets is found out to be statistically significant and negatively correlated to the profitability. In addition, liquidity, which is measured by investment to deposit ratio in this study, appeared significant and shows positive relationship with bank profitability. Moreover, operating efficiency and GDP growth are found to be statistically insignificant but respectively negatively and positively related to profitability as expectation. On the other hand, bank size and non-performing investment observed significant but no positive relationship of bank size found with profitability and no negative relationship is estimated with non-performing investment to profitability. It is worth to mention that the fixed effect regression model is applied to run the ROA model because significant statistical value is noticed in Hausman test in favor of fixed effect model. When ROE is a measure of bank profitability, again liquidity is found to be significant and positively correlated to bank profitability. Under the model, capital to risk assets shows negative relation with the profitability but is observed statistically insignificant. In addition, operating efficiency is noticed to be insignificant but negatively related to profitability as the hypothesis. Inflation rate is observed to be positively related to the profitability but is measured to be insignificant. The model found GDP growth as statistically significant but no positive relation with profitability is noticed. Moreover, bank size is found to be insignificant and negatively correlated to the bank profitability. Random effect regression model was applied to run the ROA model because no significant statistical value is observed in favor of fixed effect model when the Hausman test is conducted. In the last model of the study, NIM is used to measure bank profitability. According to the Hausman test, random regression is found to be appropriate for this model. Under the model, bank size shows a statistically significant and positive correlation with bank profitability. The study also finds operating efficiency significant and negatively correlated to bank profitability. Consistently for the third time, liquidity is found to be positively correlated with bank profitability but it is not statistically significant this time. Inflation and GDP growth

are also positively correlated to profitability under NIM model but no significance is observed. In addition, capital to risk assets and non-performing investment both are statistically insignificant under this model and no negative and positive relation is found respectively with the profitability. To sum up, liquidity is found to be positively correlated to bank profitability in all our three models. Investment to deposit ratio is taken as the liquidity and it is obvious that the more investment a bank can made, the more profit it can generate. Operating efficiency is also observed to be negatively correlated to profitability as expectation. Operating efficiency is actually the operating cost to operating income ratio and higher the operating cost a bank incurs, the less return it receives. The study found negative relationship between the capital to risk assets and profitability in ROA and ROE model. It can be said that the more risk averse a bank is, the less profit a bank can made. In addition, inflation shows positive correlation with profitability in ROE and NIM model, where GDP growth is noticed to be positively related to bank profitability under ROA and NIM model. Economic growth creates more investment opportunities and inflation increases the rate of interest. Both eventually increase profitability. It is interesting to note that bank profitability can be highly affected if non-performing investment goes out of control. In this study, only ROE model is found to be negatively correlated with bank profitability, other two models show a positive relationship between NPI and profitability. Excluding ICB Islamic Bank Limited, the average NPI of Islamic Banking Industry is very low (3%) compared to NPL of overall banking industry in Bangladesh (10%). Therefore, such tight control of investment losses do not affect the profitability severely. Finally, the bank size is found to be positively correlated to bank profitability only in NIM model, other two model reject the hypotheses. In this study, bank size is measured by the total assets which is a sum of profit earning assets and non-profit earning assets. Besides profit earning assets, banks also need to own non-profit earning assets for their operations, i.e. fixed assets. These assets cannot directly generate income, instead they incur direct expenses. If the percentage of non-profit earning assets go high, it can decrease the bank profitability.

2.5.2 Recommendations

As it is seen that liquidity (investment-to-deposit ratio) always shows a positive relation with bank profitability, it is suggested that an investment-to-deposit ratio of around 80-90% will be a good target for banks to maintain depending on the bank's business model. If a bank maintain a very high investment-to-deposit ratio, i.e. around 100%, it can be a sign of not having enough liquidity to cover any unforeseen fund requirements. A ratio of greater than 100% is a risky

practice for banks because it means that the bank borrowed money which it reinvested at higher rates, rather than relying entirely on its own deposits. On the other hand, a low ratio indicates high liquidity and idle money in banks' vaults. The liquidity ratio of Islamic banking industry of Bangladesh is 87% that is not too high, not too low and in favor of bank profitability.

In addition to that operating efficiency is found to be negatively correlated to bank profitability in all the three models and the study recommends to control the operating cost as tightly as possible. A bank may reduce its operating cost by embracing efficient technology, i.e. banking software. Cost can be further reduced by centralizing the operating activities. This not only reduces the need for branch staff but typically increases productivity and quality. Moreover, banks should replace mass marketing with targeted promotions to the right customer with the right product message to reduce marketing cost.

This study also notices negative relationship between capital to risk assets and bank profitability. The more capital a bank holds relative to its risk assets, the less return it can generate because of its high risk aversion. Standard of CRAR under Basel III is set to 11.2% and banks should maintain a ratio of just some percentage above of the standard. On the other hand, maintaining a ratio lower than the standard indicates the higher risk of banks to become insolvent. Excluding the ICB Islamic Bank Limited, the overall Islamic banking industry's CRAR is 12.5% over the last seven year period indicates the sign of less risk and higher profitability.

Higher percentage of non-performing investment can severely affect the profitability. NPI does not affect the bank profitability till a certain level, but if it goes out of control, it brings huge losses. It is previously mentioned that 80-90% investment to deposit ratio is a good level to increase profitability. But if the investments are not quality investments, and they start defaulting, bank faces a huge trouble. Over the last seven years, the average investment-to-deposit ratio of ICB Islamic Bank Limited is 90%, where the percentage of NPI over the same period is 68%. There is no point of maintaining such a good liquidity ratio. By proper client profiling and efficient collateral management, banks can take control over the classified investments.

Finally, the study observes negative relationship between bank size and its profitability where bank size is the natural logarithm of total assets. As mentioned earlier, higher amount of non-profit earning assets in banks' portfolio generates no direct income but cost. Banks should focus on reshaping their portfolios by adding higher percentage of profit earning assets while try to keep the non-profit earning assets as low as possible.

2.5.3 Further Study

The paper has limitations. The author's intention is to continue the study in the future that will focus on the whole commercial banking sector of Bangladesh and will consider the data of a longer period. The further study will also take more company specific and macro-environment factors.

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APPENDIX

Bank Specific Data (2010-2016)

YEAR	BANK	ROA	ROE	NIM	CRAR	LIQUIDITY	NPI	EFFICIENCY
2016	EXIM BANK	1.06%	11.32%	3.41%	11.77%	89.38%	5.23%	45.94%
2015	EXIM BANK	0.88%	9.06%	3.58%	12.04%	87.22%	4.69%	41.49%
2014	EXIM BANK	1.16%	11.35%	3.64%	11.70%	88.84%	3.23%	41.25%
2013	EXIM BANK	1.06%	10.27%	3.07%	13.19%	86.79%	3.67%	39.58%
2012	EXIM BANK	1.45%	13.86%	3.76%	10.87%	84.22%	4.27%	34.03%
2011	EXIM BANK	1.65%	14.91%	3.43%	10.88%	92.42%	1.63%	38.61%
2010	EXIM BANK	3.54%	36.22%	3.66%	9.95%	98.26%	1.99%	23.50%
2016	ISLAMI BANK	0.59%	9.28%	3.78%	10.82%	86.43%	3.83%	76.00%
2015	ISLAMI BANK	0.44%	7.00%	3.79%	11.66%	83.59%	4.25%	75.00%
2014	ISLAMI BANK	0.67%	8.85%	3.64%	12.83%	79.88%	4.92%	74.00%
2013	ISLAMI BANK	0.96%	11.36%	4.07%	14.26%	82.35%	3.71%	75.00%
2012	ISLAMI BANK	1.27%	13.42%	4.58%	13.49%	85.18%	3.81%	76.00%
2011	ISLAMI BANK	1.35%	17.42%	4.60%	13.09%	89.47%	2.71%	73.00%
2010	ISLAMI BANK	1.47%	19.00%	4.02%	11.06%	90.17%	1.77%	72.00%
2016	SHAHJALAL	1.02%	12.40%	3.00%	11.54%	85.98%	4.70%	50.17%
2015	SHAHJALAL	0.98%	10.78%	3.30%	13.52%	82.77%	6.47%	53.89%
2014	SHAHJALAL	0.59%	6.60%	3.22%	13.61%	80.82%	7.87%	53.48%
2013	SHAHJALAL	1.00%	12.67%	3.02%	12.56%	84.32%	6.47%	46.46%
2012	SHAHJALAL	1.44%	17.01%	3.69%	12.31%	89.64%	2.96%	29.06%
2011	SHAHJALAL	1.26%	13.80%	2.97%	11.40%	93.00%	1.89%	35.26%
2010	SHAHJALAL	3.01%	30.71%	2.62%	10.08%	96.34%	1.91%	27.26%
2016	SOCIAL ISLAMI	2.06%	16.16%	4.21%	11.55%	91.41%	4.44%	40.83%
2015	SOCIAL ISLAMI	2.08%	16.00%	4.05%	12.33%	89.54%	3.84%	41.21%
2014	SOCIAL ISLAMI	2.36%	15.68%	3.86%	11.36%	86.64%	4.56%	40.93%
2013	SOCIAL ISLAMI	1.67%	11.01%	3.68%	11.58%	84.15%	5.35%	47.18%

2012	SOCIAL ISLAMI	2.75%	14.15%	3.99%	11.52%	81.23%	3.33%	34.40%
2011	SOCIAL ISLAMI	2.72%	11.51%	3.38%	13.17%	80.63%	3.93%	33.22%
2010	SOCIAL ISLAMI	2.39%	15.31%	3.54%	9.33%	81.78%	4.76%	37.77%
2016	FIRST SECURITY	0.51%	13.13%	2.81%	10.73%	82.37%	2.58%	53.57%
2015	FIRST SECURITY	0.31%	8.28%	2.44%	10.42%	80.96%	2.76%	59.98%
2014	FIRST SECURITY	0.38%	7.78%	2.39%	11.92%	83.49%	2.22%	56.77%
2013	FIRST SECURITY	0.42%	11.95%	2.71%	10.33%	81.95%	2.17%	54.06%
2012	FIRST SECURITY	0.69%	13.45%	2.70%	10.21%	87.62%	1.85%	48.00%
2011	FIRST SECURITY	1.75%	12.89%	2.62%	9.07%	88.90%	1.94%	41.90%
2010	FIRST SECURITY	1.89%	13.99%	2.54%	9.09%	92.51%	2.61%	42.28%
2016	AL-ARAFAH	1.23%	15.67%	4.23%	14.91%	88.50%	4.64%	35.60%
2015	AL-ARAFAH	1.08%	12.82%	4.37%	16.65%	88.59%	4.66%	36.44%
2014	AL-ARAFAH	1.10%	12.80%	4.36%	14.03%	84.58%	4.50%	33.99%
2013	AL-ARAFAH	1.31%	14.15%	4.25%	14.66%	88.74%	2.77%	35.02%
2012	AL-ARAFAH	1.30%	13.85%	4.29%	11.75%	90.56%	1.63%	31.89%
2011	AL-ARAFAH	2.06%	18.34%	4.56%	13.47%	89.07%	0.95%	26.25%
2010	AL-ARAFAH	2.65%	20.01%	1.87%	14.49%	93.43%	1.14%	29.19%
2016	ICB ISLAMIC	-2.21%	2.70%*	0.67%	-108.49%	86.00%	71.89%	301.65%
2015	ICB ISLAMIC	-1.11%	1.44%*	1.32%	-98.76%	83.00%	76.14%	206.04%
2014	ICB ISLAMIC	-1.33%	2.98%*	1.39%	-97.27%	77.00%	77.52%	166.48%
2013	ICB ISLAMIC	-4.76%	7.29%*	1.89%	-89.97%	82.00%	73.31%	180.20%
2012	ICB ISLAMIC	-7.02%	12.25%*	4.00%	-73.33%	89.00%	60.78%	89.88%
2011	ICB ISLAMIC	-9.97%	23.63%*	3.31%	-45.23%	113.00%	57.27%	94.68%
2010	ICB ISLAMIC	-7.29%	23.40%*	2.77%	-36.63%	102.00%	61.60%	111.68%
2016	UNION BANK	1.16%	14.13%	3.95%	11.62%	90.44%	0.07%	44.15%
2015	UNION BANK	0.94%	9.55%	3.49%	13.27%	82.07%	0.00%	49.31%
2014	UNION BANK	1.11%	2.39%	2.53%	14.31%	81.33%	0.00%	53.64%
2013	UNION BANK	1.44%	1.94%	2.84%	34.46%	60.08%	0.00%	38.67%

**Loss on net debt*

Source: Financial Statements & Author's Calculations