Volume 19 Issue 18
Originally issued as C5

Global Journal of Management and Business Research: C Finance
Volume 19 Issue 5 Version 1.0 Year 2019
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals
Online ISSN: 2249-4588 & Print ISSN: 0975-5853

Analysis of the Factors Affecting Banking Profitability in Bangladesh

By Md. Mamunur Rashid, Asif Mahmud Nahid & Md. Ahsan Habib
Universitas Mercu Buana

Abstract- The banking sector of Bangladesh is one of the major contributors to the Bangladesh economy with the commercial sector playing a vital role in the financial sector. This paper investigates the impact of bank-specific variables on bank profitability in Bangladesh from 2011-2017. For this purpose, the data of 30 banks are collected. Correlation, regression analysis and time series analysis are done with the collected data of the 30 banks. ROA is taken as representatives of bank's profitability i.e. this is the dependent variables. Non-performing loans, Loan to Deposit Ratio, Equity to Asset ratio and Interest Expense to Income ratio are taken as independent variables to find out what are the effects of these variables on profitability. From the correlation analysis, we have found that if LDR, NIE-INC and EQUITTA increase, ROA also increases. Whereas, increase in NPL results in decrease of ROA. We established one regression model in terms of profitability, considering the other variables as independent variables. This paper also mentions the current banking condition of Bangladesh and how important banking sector is, for its economy.

Keywords: *major contributor, bank profitability, ROA, NPL.*

GJMBR-C Classification: *JEL Code: E50*



Strictly as per the compliance and regulations of:

© 2019. Md. Mamunur Rashid, Asif Mahmud Nahid & Md. Ahsan Habib. This is a research/review paper, distributed under the terms of the Creative Commons Attribution-Noncommercial 3.0 Unported License http://creativecommons.org/licenses/by-nc/3.0/), permitting all non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

Analysis of the Factors Affecting Banking Profitability in Bangladesh

Md. Mamunur Rashid [α], Asif Mahmud Nahid [σ] & Md. Ahsan Habib [ρ]

Abstract- The banking sector of Bangladesh is one of the major contributors to the Bangladesh economy with the commercial sector playing a vital role in the financial sector. This paper investigates the impact of bank-specific variables on bank profitability in Bangladesh from 2011-2017. For this purpose, the data of 30 banks are collected. Correlation, regression analysis and time series analysis are done with the collected data of the 30 banks. ROA is taken as representatives of bank's profitability i.e. this is the dependent variables. Non-performing loans, Loan to Deposit Ratio, Equity to Asset ratio and Interest Expense to Income ratio are taken as independent variables to find out what are the effects of these variables on profitability. From the correlation analysis, we have found that if LDR, NIE-INC and EQUITTA increase, ROA also increases. Whereas, increase in NPL results in decrease of ROA. We established one regression model in terms of profitability, considering the other variables as independent variables. This paper also mentions the current banking condition of Bangladesh and how important banking sector is, for its economy.

Keywords: major contributor, bank profitability, ROA, NPL.

I. Introduction

After the independence, only few banks existed in Bangladesh: 6 nationalized commercialized banks (NCB), 3 state-owned specialized banks and 9 foreign banks. But after the introduction of private banks in 1980, the banking industry of Bangladesh developed significantly. At present, in total, 63 scheduled and non-scheduled banks are operating in Bangladesh.

Banking industry is a vital source of socio-economic development in our country. It forms the core of the money market and facilitated flow of fund by mobilizing resources for productive investments which in turn contributes to economic development. The financial sector of Bangladesh is mostly dominated by banks. Banks are still considered the most reliable for depositing one's savings or surplus. Banking sector contributes to a good portion of the GDP of Bangladesh. The banking sector was booming rapidly until the financial crisis of 2010, when it faced a huge loss. At present, growth of the banking sector in Bangladesh have declined by 1.22 percentage in the outgoing fiscal year 2017-2018 amid series of scams in the banking sector with growing number of non-performing loans. The sector's contribution declined to 10.54 percent from 11.12 per cent in 2018. If the banking industry's performance declines, or if it fails to function properly, this may affect other sectors and ultimately, the whole economy. There may be an economic downfall. Banks give loans to other sectors, businesses, startups, etc. so that these borrowers can use the borrowed money to continue their production, create new business opportunities and thus contribute to the economy. If banks fail to lend to these deficit units, these opportunities to produce and manufacture may fail. So, it is important for the banks to function properly and grow at the same time.

In this paper, we will come to know the determinants of a bank's profitability, what are the factors that determine whether a bank will flourish or fail. By knowing these factors, we might be able to take decisions regarding the strength or condition or financial position of a bank from its balance sheet.

II. Literature Review

Many researches have been conducted on the topic-profitability determinants of banks or factors that affect bank profitability based on banking sectors of different countries. There are also many articles on the same based on banks in Bangladesh. The factors of these researches have been both bank-specific and macroeconomic.

Researchers S Gul, F Irshad, K Zaman (2011) conducted their research on top 15 commercial banks of Pakistan over the period 2005-2009. In their study, they found out that size, loan, deposits, INF and GDP have a positive relationship with ROA, while capital and market capitalization (MC) have a negative relationship with ROA. They also found that size, capital, loan, deposits and GDP have a negative relationship with NIM, while INF and MC have a positive relationship with NIM.

M.S. Saeed (2014) conducted a research on the impact of bank-specific, industry specific and macroeconomic variables on bank profitability of 73 commercial banks in UK before, during and after the financial crisis of 2008(2006-2012). This study concluded that bank size, capital ratio, loan, deposits, liquidity, and interest rate have positive impact on ROA

Author α σ: Department of Business Administration in Finance & banking, Bangladesh University of Professionals, Mirpur, Dhaka, Bangladesh. e-mails: mamun.finance.banking.01@gmail.com, nahid16221034@gmail.com
Author ρ: Department of Business Administration in Marketing, Fareast International University. e-mail: habibahsan001997@gmail.com

© 2019 Global Journals

and ROE while GDP and inflation rate have negative impact.

A Dietrich, G Wanzenried (2011) in their study, analyzed the bank-specific, industry specific and macroeconomic factors affecting bank profitability of 372 commercial banks in Switzerland over the period from 1999 to 2009. The results were similar to the other researches done on this topic.

Similar researches have been done all over the world such as A Anbar, D Alper (2011) in Turkey, F. Sufian (2009) in Malaysia, T Olweny, TM Shipho (2011) in Kenya, Sufian and Noor (2012) in India, Liu and Wilson (2010) in Japan, Jaleel and Peng(2015) in Pakistan and many more.

Researchers of Bangladesh have also contributed to this topic. Md. Saimum Hossain and Faruque Ahamed in their study, investigated only the bank-specific factors affecting banking profitability from 2012-2016 and concluded that the earnings indicators, capital strength, and industry impact have positive relationship with ROE but NPL has a negative relationship with ROE. TIN, OPEX, and CAP have a positive relationship with net interest margin (NIM)where as NII has negative relationship.

M.M. Rahaman and Sharmin Akhter (2015) studied the bank-specific factors on Islamic banks' profitability over the period 2009-2013 including 8 Islamic banks of Bangladesh. They found that bank-size and deposit have significant negative impact on the return on assets (ROA), while equity is found to have positive significant impact. Loan and expense management are found to be insignificant in affecting the profitability of the selected banks.

III. Methodology

a) *Regression:* We used the econometric regression model mentioned below to run our multiple regressions. Using the collected data in our regression model, we will get our results.

$$Y = \alpha + \beta 1X1 + \beta 2X2 + \beta 3X3 + \beta 4X4 + \varepsilon$$

Here,

Y= dependent variable/profitability of the bank/ ROA/ ROE/NIM

A = intercept of the y-axis

B_n= coefficient of the respective variables

X1 = NPL

X2= EQUITTA

X3 = LDR

X_4= NIE-INC

b) *Correlation:* The correlation analysis is also done by using MS. Excel. The data of 30 banks over 7 years are given as input and the strength and direction of the dependent variables due to the change in independent variable is found out.

IV. Data Used

In this paper, we analyzed the factors affecting bank profitability by running correlation, regression and doing time series analysis.

The required data for the correlation analysis, regression analysis and time series analysis are collected from the annual report of 30 banks currently operating in Bangladesh over the time 2011-2017. The required financial ratios are computed to represent the variables used for the analysis.

For the analysis, the following variables are taken into account:

Variables	Measure	Proxy
Dependent Variables:		
Return on Asset (ROA)	Net profit after tax/Total asset	Profitability
Independent Variables:		
Non-Performing Loans (NPL)	NPL/Total Loans	Asset Quality
Equity to Total Asset (EQUITTA)	Total Equity/Total Asset	Capitalization
Loan to Deposit Ratio (LDR)	Total Loans/Total Deposit	Liquidity Risk Management
Net Interest Expenditure to Income (NIE-INC)	Ratio of Expenditure to income	Cost efficiency

a) *Dependent Variable: Profitability*

As the dependent variable of our study, we have chosen two different measures that represent profitability, which are Return on Asset (ROA) and Return on Equity (ROE).

ROA: ROA of a company indicates how profitable a company is relative to its total assets or how efficiently a bank manages its assets/resources to generate return.

b) *Independent Variable*

We have selected the following bank-specific independent variables as the potential determinants of the banks' profitability.

Asset Quality/Non-performing loans: Non-performing loans are the loans that the debtor did not pay back or did not make payment for a period of usually at least 90 days for commercial banking loans and 180 days for consumer loans. Here,

© 2019 Global Journals

NPL represents the asset quality of a bank. NPLs hamper a bank's business. The lending capability of the bank reduces due to the increase in NPL. To offset these bad debts, banks need to create cushion funds from their income. All kinds of NPLs reduce the profitability of the banks and banks encounter problem of low capital base which badly affects the banking sector. NPL has become a matter of concern for the banks since the last decade. The NPL ratio was highest in 2013 with a rate of 7.2%. NPL is expected to have negative impact on ROA the profitability of the bank.

Capitalization/EQUITTA: Capitalization is a quantitative measurement of a bank's capital structure. A bank generally has two types of capital: i) actual capital and ii) regulatory capital. Actual capital consists of equity and long term debt. The actual capital of a bank is measured by as the ratio of equity to total assets and also known as capital ratio and capitalization (EQUITTA). This coefficient is expected to have positive effect on ROA.

Liquidity Risk Management/LDR: In our study, the liquidity of the banks is represented by LDR. LDR means the amount of loans a bank gives out compared to its total deposit at a certain time. If LDR is high, it means liquidity of the bank is low. Less liquidity means that the bank will face problems if unforeseen fund requirements arise. But if the bank is more liquid, it means that it is keeping idle funds which could have been used to generate return otherwise. Liquidity is expected to have a positive impact on ROA.

Cost efficiency/NIE-INC: Cost efficiency means how well a bank can minimize its cost and earn more return at the same time. This cost efficiency can be calculated by net interest expense to income ratio. The less the NIE-INC ratio, the more cost efficient the bank is. Cost efficiency is expected to have a positive impact on both ROA.

V. Findings and Analysis

To derive results on the factors that affect the banking profitability of Bangladesh we have performed three key analysis with our dependent and independent variables. That is

1) Correlation Analysis
2) Regression Analysis

a) Correlation Analysis

	ROA	*NPL*	*LDR*	*NIE-INC*	*EQUITTA*
ROA	1.00				
NPL	-0.89	1.00			
LDR	0.55	-0.65	1.00		
NIE-INC	0.26	-0.19	0.03	1.00	
EQUITTA	0.81	-0.70	0.46	0.17	1.00

The correlation Analysis table gives us an idea of the strength and direction of a linear relationship between the independent variable's that is the NPL, LDR NIE-INC & EQUITTA and movement of the dependent variable.

Interpretation of correlation analysis:

ROA: From the analysis, we found that the independent variables- LDR, NIE-INC and EQUITTA are positively related to ROA. It means that when these independent variables increase, the ROA also increases and when these variables decrease, the ROA decreases. LDR is moderately correlated, NIE-INC has a weak relation and EQUITTA is strongly correlated with ROA. Whereas, NPL is negatively correlated to ROA. ROA decreases with the increase in NPL. ROA has a strong negative linear relation with NPL.

b) Regression Analysis

Keeping in mind our two dependent variables we have conducted three regression analysis. The Model that we have used for our regression analysis is

$$Y = \alpha + \beta 1X1 + \beta 2X2 + \beta 3X3 + \beta 4X4 + \varepsilon$$

Regression Analysis using ROA as measure of profitability:

Summary Output:

Regression Statistics	
Multiple R	0.930518119
R Square	0.86586397
Adjusted R Square	0.844402205
Standard Error	0.010440655
Observations	30

© 2019 Global Journals

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	4	0.017591371	0.004397843	40.34449056	1.47E-10
Residual	25	0.002725182	0.000109007		
Total	29	0.020316553			

	Coefficiets	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.02	0.02	0.90	0.38	-0.03	0.07	-0.03	0.07
NPL	-0.28	0.05	-5.29	0.00	-0.39	-0.17	-0.39	-0.17
LDR	-0.01	0.02	-0.32	0.75	-0.05	0.04	-0.05	0.04
NIE-INC	0.01	0.01	1.11	0.28	-0.01	0.02	-0.01	0.02
EQUITA	0.05	0.01	3.45	0.00	0.02	0.08	0.02	0.08

Interpretation of the regression analysis: The first thing we are going to interpret is the overall regression accuracy. That can be done with R Square and Adjusted R square. The R square represents the percentage of variance of the output variable that is ROA is explained by the variables in the Input that is the dependent variables. Here we can see that the R-Square is 86.58%. Therefore, the 86.58% of the output variable is explained by the input variables.

The adjusted R-Square is more conservative than the R-Square. So, its value is always less than R-Square. Here, the value is 84.44%. Therefore, the overall regression accuracy can deemed to very high. Whenever a new variable will be added, it increases the predictive power of the overall regression analysis.

Next, we will evaluate if regression output is not by chance. This can be derived by the significance of F. The smaller the F the greater the probability that the output of the regression is not by chance. Here, the Significance F is 0.0000147. That is there is a 0.0000147 chance that the output of the regression is by chance. We can conclude that the regression is reliable since it has a very small Significance of F.

Next, we are going to look at the reliability of the regression lines co-efficient. This can be derived by looking at the P-Values. The smaller the P-Values the higher the chances are that the value of the co-efficient of the variables are not by chance.

Profitability in terms of ROA:

$$Y=0.02+(-0.28)*NPL+(-0.01)*LDR+0.01*NIE\text{-}INC+0.05*EQUITTA$$

VI. Conclusion

We have analyzed the key variables that affect the banking profitability of Bangladesh. We identified the variables that indicate the banking profitability & termed them as dependent variables. Then we identified the variables that are responsible for the changes in dependent variables and termed them as independent variables. The dependent variable is ROA. The independent variables are NPL, LDR, EQUITTA and NIE-INC.

We performed three analyses to develop a solid foundation for our results. These are Correlation Analysis and Regression Analysis.

With the help of our three analyses we have identified which variables increases the profitability of Banks & which variables reduce them.

We have reached the conclusion based on our time series analysis that the overall banking industry is not at a healthy stage & that all the key indicators of the industry are downward slopping.

References Références Referencias

1. (PDF) Determinants of Profitability of Commercial Banks in Bangladesh. (2018, January 1). Retrieved from https://www.researchgate.net/publication/317561088_Determinants_of_Profitability_of_Commercial_Banks_in_Bangladesh.
2. http://www.kepler.digital/banking-system-of-bangladesh.

© 2019 Global Journals