Volume: 4, Issue: 11
Page: 1-13
2020

ISSN 2520-4750 (Online) & ISSN 2521-3040 (Print)

International Journal of Science and Business

Effects of Firm Specific Factors on Profitability of Non Bank Financial Institutions in Bangladesh: Evidenced from Dhaka Stock Exchange (DSE)

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Abstract:
As the arena of the NBFIs is widening day by day in Bangladesh, it has attracted many investors of the country for which the profitability analysis of these NBFIs is getting popularity. This paper intends to analyze the firm-specific profitability indicators of the NBFIs in Bangladesh. To conduct this study, panel data of the nineteen NBFIs have been collected for the last 10 years (from 2007 to 2017). The main objectives of this paper to identify the fundamental determinants and to assess their contribution to the NBFIs' profitability. Three measures of profitability- ROA, ROE and NIM, have been considered as the dependent variables in this paper. The fixed effect model was used in Model I- ROA and Model II- ROE. But the appropriate model for the Model III- NIM is undecided as the panel data for this model did not meet the asymptotic assumptions. To address this problem, Panel Corrected Standard Error (PCSE) Regression Method has been used in this study. The paper has been concluded by saying that ROE and NIM of the NBFIs are not influenced by their deposits and size which indicates that the ROE and NIM of the NBFIs are not sensitive to the sources from the NBFIs collect their funds. Non bank financial Institution should focus on the generation of capital from market using financial instruments with more diversified portfolios. Returns in these institutions can be backed by internally generated capital fund. However, sustainable growth in non bank institution needs to raise a minimum portion of deposit from the market with deliberate earnings from more systematic and dynamic asset class available in the market. Utilization of assets and earning s of mortgage loan and other financial assets should get more attention in Bangladeshi non bank financial institutions.

Keywords: Capital Strength, Internal, Measures, NBFIs, Profitability, Size.

IJSB
Accepted 30 September 2020
Published 04 October 2020
DOI: 10.5281/zenodo.4065124

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1. Introduction

The economic growth of a country mainly depends on the financial development in that specific country which starts with the development of the banking institutions. The banks have been established to perform the acts as intermediaries in an economy by collecting and mobilizing funds from the depositors and allocating these funds in profitable usages. But due to the structural limitations and the lack of flexibility in the regulations, their spaces to provide financial services have been confined and they have boundaries where they can expand their operations. So, to support the economic growth of the country by overcoming these limitations, the non-bank financial institutions (NBFI) have emerged. In Bangladesh, they are licensed and regulated under the Financial Institutions Act of 1993. With the changes in time, the NBFIs in Bangladesh got popularity along with the established banks in the country. For example, after the banking sectors, NBFIs are considered the second highest sources of different types of loans and other financial services. The profitability of these NBFIs is mainly influenced by the macroeconomic factors and the firm-specific factors. This study will examine the firm-specific factors that may affect the profitability of the NBFIs of Bangladesh.

Rationale of the study

Due to their growing importance in the economic development and complementary roles along with the baking services, NBFIs have attracted a number of investors whose curiosity about the operations and the profitability of the NBFIs has been increased over the time. So, in the recent times, the assessment of their financial performance has been a prime concern of the stakeholders. A number of research works have been performed to identify the primary indicators of the profitability of the banks. But there are a few research works on the fundamental determinants of the profitability of the NBFIs using the evidence from Bangladesh especially considering the recent advancements and the growing competitions in this sectors.

Objectives of the study

The aim of this study is to conduct a detailed analysis of the determinants on the financial performance of the NBFIs in Bangladesh. The specific objectives are-To measure the profitability of the selected Non-Bank Financial Institutions. To determine the contributions of the determinants on the profitability of the NBFI sector. To identify the most significant factor influencing the profitability of the NBFI sector.

Limitations of the study

Insufficient accessible data due to the confidentiality in the NBFIs. Main sources are the annual reports of the NBFIs which is a chief limitation of the study as the concerned author present information in the annual reports in their own ways.

2. Review of the Literature

Kanas, Vasiliou & Eriotis(2012) examined the impacts of the internal and the external factors influencing the bank profitability. In this study, the bank-specific variables, the size of the banks, credit risks and efficiency of the management in respect of the expense relative to the total assets (the higher the ratio, the less efficient the management is) have a negative influence on the profitability of the banks. The diversification measured by the non-interest income divided by the total assets and the capital strength or the lower banks. Among the external variables, only the inflation negatively impacts the banks' profitability where the growth of the economy, the growth in the money supply and the financial development measured by the capitalization in the stock market positively stimulate the ROA of the Philippines' banks. The impacts of the internal variables on the ROA of the banks are

statistically significant but the external variables did not significantly explain the variations in the banks' profitability. Tan (2016) concluded based on the evidence from Malaysia that the credit risks and the loan concentration are negatively related to the profitability level but the capitalization level, proportion of the non-interest income, operational expenses show positive relations to the NBFIs' profitability. Among the economic variables studied in this paper, the economic growth and the inflation rate have negative and positive impacts respectively on the profits of the NBFIs in Malaysia. Ofoeda (2017) also examined the determinants of the bank profits using a panel data for the Greek banks from the period of 1985 to 2001. This study provides hints that profitability may not exist to a greater extent especially as the market is competitive. Among the internal factors, all of the factors except the size of the banks influenced the profitability of the banks similar to the expectations. In addition, the business cycle has positive but asymmetric influences on the profitability level of the banks which is significant when the cycle is in the upward trend. Andreev & Danilov (2014) worked on the determinants of commercial bank profitability of Malaysia. According to this research, the composition of the asset and the deposit, the capital, the management of the expenses, the liquidity, the size of the banks, inflation rate, growth in the market, interest rate, market share and the regulation have a significant contribution to the net profits of the banks. Moreover, the expense management issue was emphasized in maximizing the profitability level as this variable has been proved to be the highest significant variable in this study. Venegas (2018) published a paper titled as 'The Determinants of European Bank Profitability' based on the sample data of 1994-1998 and the finding of the study is that the concentration and the market share of the banks have a positive effect on their performance or the profitability. The concept of type explanation has been used in identifying the policy implications. Godlewski & Sanditov (2017) conducted a survey on the top five banks in the United States concluded that the equity portion in the capital structure and the changes in the external income is positively related to the profitability of the banks as is measured by the return on equity (ROE). Among the other selected internal variables, the size of the banks expressed by the total assets has more significant impacts both in economic growth and downturns.

A research paper was written by Hartwell (2015) on the banks in Turkey. The study used unconsolidated data of the selected banks on a quarterly basis. The data was collected between 2005 and 2010. The writer concluded that the extent of capitalization measured by the equity to total asset ratio is positively related to the profitability of the banks and the NPL to total loans and advances have reverse impacts. Andreev & Danilov (2014) selected 15 Bangladeshi commercial banks and concluded that the concentration of the market and the risk of the banks do not significantly explain the return on equity of the banks. But the market size of the banks provides enough justification for the banks' profitability in the banking industry of Bangladesh. Hassan (2015) examined the relationship between the capitalization of the stock market and the banks' profitability. They found a reverse relationship between these two variables which indicates that the equity and the financing by banks seem to be substitutes instead of complements. A research related to the leverage positively influence the net income of the profitability of the banks was done on the banks of Ukraine which was conducted based on 3236 quarterly observations. The findings of the research were that the Ukraine banks had a number of loans of low quality and they were unable to make profits even though its deposit was growing in large volume. However, they managed to make money from the exchange rate movement. Acaravci, S. K. and Çalim, A. E. (2013) based their research on the private commercial banks. The findings of their study

were that the deposits influence the profitability insignificantly where the profitability is reduced by the non-performing loans and the capital adequacy influence the profitability significantly and positively.

3. Methodology

Sampling technique

At present, there are 23 non-bank financial institutions listed on the Dhaka Stock Exchange (DSE). Among these, listed financial institutions, there are 19 institutions that are listed for more than 10 years. These 19 institutions have been selected as the sample for this study. The reason to apply this sampling technique is to collect financial data from these institutions for a number of periods which will enable to apply some statistical models that require a large data set of the samples.

Time horizon

To serve the purpose of this study, the annual data of the selected NBFIs have been collected from 2008 to 2017 (10 years). This has provided us with a total of 190 observations.

Sources of data

The data has been collected from the secondary sources. The annual reports from the websites of the particular NBFI have been used to gather financial data of that institution. The website of the Dhaka Stock Exchange (DSE) has also been used the time to time for different purposes.

Methods to be used

Multicollinearity test

When the predictor variables of a model are correlated with each other, the multicollinearity problem occurs. Due to this problem, the variances of the estimated coefficients may be increased or may be sensitive to the slight modifications in the model. However, it does not influence the model's predictive power as an entire bundle of all of the predictors. Rather it affects the individual impacts of the independent variables on the dependent variables. Whether there are multicollinearity problems in the collected data used for this study has been tested using **Pearson Correlation Co-efficient Test** and **Variance Inflation Factors (VIF) Test**. According to this test, there will be multicollinearity problems if the correlation coefficient of two predictors is equal to or greater than 0.80.

Heteroscedasticity test

One of the assumptions in the linear regression analysis of the time series data is that the variances of the errors should be homogenous for all of the observations. There are a number of tests to perform the Heteroscedasticity Test for the model among which **Breusch-Pagan Test** has been used in this study. This test is a Chi-square test where the null hypothesis is that the variances are homoscedastic. So, heteroscedasticity appears only if the null can be rejected.

Autocorrelation test

When there are dependencies among the observations of the model, autocorrelation or serial correlation occurs which is not expected. Because it violates the independence assumption of the linear regression analysis. It may occur due to the time lag or collecting data from an identical source instead of selecting randomly. Breusch-Godfrey LM test for autocorrelation or serial correlation is used to test the presence of the autocorrelation in this study. The null hypothesis of this test is that there is no serial correlation. The null can be rejected at the 5% significance level which demonstrates the presence of the autocorrelation in the data set.

Multiple regression analysis

The **Hausman Test** has been used to assess whether there are any endogenous variables in the model. It helped to choose the ideal model to analyze the panel data set of the samples. To analyze the panel data, both the random effect model and the fixed effect model can be used. But when all the independent variables are fixed and represent some ratios, it is better to use the fixed effect model. Thus, **Fixed Effect Model** has been used to check the explanatory powers and directions of the selected variables on the profitability indicators. In addition to the fixed effect model, another model namely, **Panel Corrected Standard Error (PCSE) Regression Model** have also been used to analyze the impact of the predictor variables on the dependent variables. The reason for using this model is to generate the best estimates correcting the heteroscedasticity and autocorrelation problem in the data set.

Selected variables

The variables used in this study are listed below:

Table 1: List of the variables

Variables	Notation	Description	Expected Sign
Dependent Variables			
Profitability	ROA	Net profit to total asset	
	ROE	Net profit to total equity	
	NIM	Net interest margin to total assets	
Independent Variables			
Earnings	TIN	Total interest income to total asset	+
	NII	Non-interest income to total asset	+
Operating cost	OPEX	Operating expense to total asset	-
Asset Structure	DPST	Total deposit to total asset	+/-
Capital Strength	CAP	Total equity to total asset	+
Industry Impact	SIZE	Logarithm of total asset	+/-

Source: Field Study

Dependent variables

The dependent variable of this study is the profitability of the NBFIs. There are a number of measures of the profitability from which three measures have been selected to conduct this study. They are return on assets (ROA), return on equity (ROE) and net interest margin (NIM). ROA indicates the efficiency of the organizations in using their assets, both real and financial, to generate the return. ROE is the measures of return that is available for the equity holders of the firms. And lastly, NIM is the measure of net interest income (total interest income minus total interest expense) per unit of assets of the firms.

Independent variables

The explanatory variables that have been selected for this study are the firm-specific or internal variables. These variables have been used as the proxy of earnings, efficiency of the management, asset structure, capital strength, and industry impact on the firms. An important to be noted here that to scale the data used in this study to maintain comparability, all the variables have been divided by the comprehensive variable (total asset).

Model specification

Using the selected variables, the models that are relevant to this study to analyze the hypothesized relationship between the variables are-

$$ROA = \alpha + \beta 1TIN_{i,t} + \beta 2NII_{i,t} + \beta 3OPEX_{i,t} + \beta 4DPST_{i,t} + \beta 5CAP_{i,t} + \beta 6SIZE_{i,t} + \varepsilon \ldots (I)$$

$$ROE = \alpha + \beta 1TIN_{i,t} + \beta 2NII_{i,t} + \beta 3OPEX_{i,t} + \beta 4DPST_{i,t} + \beta 5CAP_{i,t} + \beta 6SIZE_{i,t} + \varepsilon \ldots (II)$$

$$NIM = \alpha + \beta 1TIN_{i,t} + \beta 2NII_{i,t} + \beta 3OPEX_{i,t} + \beta 4DPST_{i,t} + \beta 5CAP_{i,t} + \beta 6SIZE_{i,t} + \varepsilon \ldots (III)$$

4. Analysis and Discussion

Descriptive statistics

The descriptive statistics of the collected data is given below:

Table 2: Descriptive statistics

Variable	Observation	Mean	Standard Deviation	Minimum Value	Maximum Value
ROA	190	0.0163411	0.059091	-0.72443	0.1339506
ROE	190	0.1060043	0.2464764	-2.151562	1.047376
NIM	190	0.0273778	0.0215304	-0.0755049	0.1073524
TIN	190	0.1000865	0.0283913	0.013274	0.2302256
NII	190	0.0251615	0.0283222	-0.0120205	0.1464582
OPEX	190	0.0166487	0.0127091	0.0039324	0.1099755
DPST	190	0.4840905	0.1421642	0.0050377	0.8829967
CAP	190	0.167013	0.1080797	-0.6916619	0.5055355
Size	190	23.31751	0.9150298	20.97387	25.89024

Source: Software Output

From Table 2, it is evident that, on an average, the profitability of the NBFIs in Bangladesh is 1.63% and 2.74% when it is measured by the ROA and NIM respectively. But it improves up to 10.60% if the ROE is taken as the proxy for the profitability of the NBFIs. However, the average of the total interest income of the selected NBFIs is approximately 10% and the non-interest income is 2.52% where the average OPEX is 1.66%. The asset structure of the NBFIs contains deposits equals 48.41% of their total assets and equity up to 16.70%. The standard deviation of the size of the NBFIs is the highest of all which indicates that the size of the companies in this particular industry is very much diverse from each other. These companies vary in their practice regarding the capital structure, capital strength also which have been represented by the DPST and CAP respectively. The standard deviation of the ROA is the highest of all the profitability measures. It indicates that the NBFIs are very much diversified in their capital structure, leverage for which their ROEs deviate so much though the other measures of profitability (ROA and NIM) are close.

Multicollinearity test

Pearson correlation coefficient test

Table 3: Results of Pearson correlation coefficient test

Variables	TIN	NII	OPEX	DPST	CAP	Size
TIN	**1.00**					
NII	-0.32	**1.00**				
OPEX	0.19	0.37	**1.00**			
DPST	-0.02	-0.25	0.05	**1.00**		
CAP	-0.04	0.36	-0.02	-0.47	**1.00**	
Size	-0.38	0.13	-0.08	0.48	-0.12	**1.00**

Source: Software Output

The results shown in the above table indicate that there are no multicollinearity problems among the predictors used in this study as no correlation coefficient is less than 0.80.

Variance inflation factors (VIF) test

Though there is no particular value at which the multicollinearity problems can be detected, VIF exceeding 10 is regarded as representing the multicollinearity within the data set. But forany model which is not strong, the concerning limit of the VIF may be as small as 2.5.

Table 4: Results of VIF test

Variable	VIF	1/VIF
DPST	1.84	0.54
NII	1.84	0.54
Size	1.66	0.60
TIN	1.44	0.69
OPEX	1.44	0.69
CAP	1.43	0.70
Mean VIF	**1.61**	

Source: Software Output.

The VIF value for the variables used in this study indicates that the multicollinearity problems do not exist in this model.

Heteroscedasticity test

In Model I- ROA, the null hypothesis of this model is rejected at the 5% significance level which is the evidence of heteroscedasticity. According to the p-value, there is heteroscedasticity problem in the Model II- ROE which may lead to the erroneous results if not corrected. Here the p-value for Model III- NIM is more than 5% for which reason, the null hypothesis (H0) cannot be rejected. So, the variances are not homogenous and as a result and the data set does not have any heteroscedasticity problem. The summary of the Breusch-Pagan Test is shown in Table 5.

Table 5: Results of Heteroscedasticity test

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity Ho: Constant variance		
Model	**chi2(1)**	**Prob > chi2**
Model I-ROA	1327.93	0.00
Model II-ROE	109.51	0.00
Model III-NIM	0.57	0.45

Source: Software Output.

Autocorrelation test

The summary of the autocorrelation test using the Breusch-Godfrey LM test is-

Table 6: Results of Autocorrelation test

Breusch-Godfrey LM Test for Autocorrelation		
Model	**chi2**	**Prob > chi2**
Model I-ROA	14.269	0.0002
Model II-ROE	128.000	0.7202
Model III-NIM	70.380	0.0000

Source: Software Output.

As the p-value for Model I- ROA is less than 5%, the null is rejected and so, it can be said that there is autocorrelation among the observations of the model. In the case of Model II-ROE, the null hypothesis of no serial correlation cannot be rejected as the p-value is greater than 5%. So, this model does not have any autocorrelation problem. In Model III- NIM, the autocorrelation problem prevails as the p-value is less than 5%.

Multiple regression analysis

The multiple regression analysis section has been divided into three parts- Hausman test, fixed versus random effect analysis and finally the panel corrected standard error regression analysis.

Hausman test

To decide whether to use the fixed effect model or random effect model, the Hausman Test has been conducted. If the null hypothesis of the model can be rejected at the 5% significance level, it would indicate that the differences in the coefficients of the variables are due to some systematic reasons. So, the fixed effect model would be appropriate in this scenario. Otherwise, the preferred model would be the random effect model. The results of the Hausman Test are shown below:

Table 7: Summary of Hausman test

Model	chi2(6)	P-value	Decision
Model I-ROA	36.17	0.00	Fixed Effect Model
Model II-ROE	38.56	0.00	Fixed Effect Model
Model III-NIM	-321.11	N/A	N/A

Source: Software Output.

As the p-value is less than 5%, the null hypothesis is rejected which justifies the use of the fixed effect model when the profitability is measured by the ROA. The P-value of the Hausman Test for the ROE as the profitability measure of the NBFIs is less than 5%, the null hypothesis has been rejected which indicates that the differences in the coefficients are systematic. So, the appropriate model to analyse the data set is the fixed effect model instead of the random effect model. When the NIM has been taken as the proxy of the profitability of the NBFIs, the output of the Hausman test provides a negative Chi2 value as the data of this model do not meet the asymptotic assumptions of the test and for this reason, the P-value is not available in this model. So, it cannot be concluded whether the fixed effect model or random effect model will be applicable in the model where profitability has been represented by NIM.

Fixed effect versus random effect analysis

Table 8: Summary of fixed effect analysis

Variables	Model I-ROA		Model II-ROE	
	Coefficient	P-value	Coefficient	P-value
TIN	0.46	0.00	4.04	0.00
NII	1.00	0.00	4.80	0.00
OPEX	-1.04	0.00	-4.24	0.02
DPST	0.14	0.00	-0.41	0.09
CAP	0.53	0.00	-1.33	0.00
Size	0.01	0.19	0.02	0.65
Constant	-0.40	0.01	-0.40	0.70
R-sq	0.58		0.15	
Prob > F	0.00		0.00	

Source: Software Output.

From the output of the Hausman Test shown in the above, the fixed effect model has been selected for the first two models but neither the fixed effect model nor the random effect model can be chosen for the Model III. So, the output of the fixed effect model for the first two models will be analyzed here. Instead, both the fixed effect and the random effect model has been run using the STATA software for all of the three models.

$$ROA = \alpha + \beta 1TINi, t + \beta 2NIIi, t + \beta 3OPEXi, t + \beta 4DPSTi, t + \beta 5CAPi, t + \beta 6SIZEi, t + \varepsilon \; .. \; (I)$$

From the output of the fixed effect model used for the ROA of the NBFIs, it can be said that the selected predictors except one seem to be significant at the significance level of 5%. The coefficient of the predictors indicates that the earnings variables, both TIN and NII, asset

structure (DPST), capital strength (CAP) and industry impact (Size) have a positive influence on the ROA of the NBFIs where the management efficiency represented by OPEX negatively influence the NBFIs' profitability measured by ROA. However, among the independent variables, the industry impact proves to be statistically insignificant in predicting the profitability of the NBFIs as its P- value is greater than 5%. The overall R^2 is around 58% which indicates that 58% of the variation in the ROA is explained by the independent variables of this model. And there is evidence that this model is valid as the F-value is less than 5%. In a word, the goodness of fit of this test is quite good in predicting the ROA (profitability) of the NBFIs.

ROE= α + β1TINi, t + β2NIIi, t + β3OPEXi, t + β4DPSTi, t + β5CAPi, t + β6SIZEi, t + ε...(II)

Among all of the independent variables in this model, OPEX, DPST and CAP representing the management efficiency, the asset structure and the capital strength respectively, are negatively related to the ROE of the NBFIs. However, among these variables, the evidence implies that the contribution of the asset structure, DPST, on the ROE of the NBFIs is not statistically significant. The other three variables, TIN, NII and Size have a positive impact on the ROE and are statistically significant except the Size of the NBFIs indicating the industry impact on the NBFIs' profitability. The goodness of the fit of this model low as the R^2 is 15% but it is a valid model justified by the F-value of less than 5%.

NIM= α + β1TINi, t + β2NIIi, t + β3OPEXi, t + β4DPSTi, t + β5CAPi, t + β6SIZEi, t + ε .(III)

As the P-value from the Hausman test for this third model is not available, so, which model would be applicable to analyze the model cannot be decided. So, especially, for this model along with the other two model also, the Panel Corrected Standard Error Regression Method has been discussed in the next segment.

Panel corrected standard error (PCSE) regression model

As there are some heteroscedasticity problems and autocorrelation problems in the collected data set, the estimated coefficients using either fixed effect or random effect model may not provide unbiased results. So, to get more accurate estimates, it is important to somehow correct the data set or use a model that would estimate the coefficients after correcting the biases in the data set. In this circumstances, the use of the Panel Corrected Standard Error (PCSE) Regression Model is a good choice to solve these problems.

Table 9: Summary of PCSE analysis

Variables	Model I-ROA		Model II-ROE		Model III-NIM	
	Coefficient	P-value	Coefficient	P-value	Coefficient	P-value
TIN	0.86	0.00	3.24	0.00	0.53	0.00
NII	0.62	0.00	4.73	0.00	-0.08	0.19
OPEX	-0.63	0.06	-4.16	0.06	0.14	0.17
DPST	0.08	0.00	-0.02	0.91	-0.01	0.39
CAP	0.39	0.00	-0.52	0.19	0.07	0.00
Size	0.01	0.03	0.02	0.23	0.0003	0.85
Constant	-0.35	0.00	-0.68	0.20	-0.04	0.22
R-squared	0.65		0.21		0.64	
Prob > chi2	0.00		0.00		0.00	

Source: Software Output.

ROA= α + β1TINi, t + β2NIIi, t + β3OPEXi, t + β4DPSTi, t + β5CAPi, t + β6SIZEi, t + ε ..(I)

Among the six variables used in the model to determine the internal factors that may influence the profitability of the NBFI industry, only the operating expenditures of these firms scaled by the total assets is negatively related to their profitability which indicates that the management is not efficient enough in controlling the operating costs of the NBFIs. But it

is unfortunate that the P-value for this variable is greater than 5% which does not provide enough evidence that this result is significant to draw a conclusion. Apart from this variable, the other variables have positive influences on the NBFIs' profitability and their respective P values support the results. However, the goodness fit of the model represented by the R^2 measure indicates that the variation in the dependent variable can be explained the variations in the independent variables by 65%. So, this model is good enough to explain the profitability of the NBFIs.

ROE= α + β1TINi, t + β2NIIi, t + β3OPEXi, t + β4DPSTi, t + β5CAPi, t + β6SIZEi, t + ε ..(II)

The output of the panel corrected standard error model indicates that the TIN, NII, Size variables can positively explain the ROE of the NBFIs. This result is significant for TIN and NII variables according to the P-value as they are less than 5%. But the P-value for the Size variable is 0.23 which signifies that the positive relationship between the ROE and the Size of the NBFIs is not significant. And the negative coefficients of the rest of the variables provide evidence of their negative relationship with the dependent variable, ROE but their relationship is not significant according to their P-values which are above 5%. The R^2 of this model is 23% only which indicates that the goodness of fit of the model is not good. So, the profitability of the NBFIs measured by the ROE cannot be predicted well using this model.

NIM= α + β1TINi, t + β2NIIi, t + β3OPEXi, t + β4DPSTi, t + β5CAPi, t + β6SIZEi, t + ε..(III)

The last measure of profitability used in this study is the NIM which is significantly positively related to the TIN and CAP of the NBFIs according to the PCSE model results summarized in the last table. There is another variable, Size, which also has a positive contribution to the NIMs of the NBFIs but this result is not justified by the P-value as a significant variable influencing the NIMs. Besides, the other variables like NII, OPEX, and DPST cannot also significantly explain the NIMs of the NBFIs as their P-value is above the threshold level of 5%. The R^2 of this regression model suggests that the goodness of fit of this model is good as it is more than 50%.

5. Findings

From the analysis of this study, it is clear that there a number of factors internal to the NBFIs that can influence their profitability. The findings related to the relationship between each of the variables and the profitability measures of the NBFIs are discussed in the following:

ROA= α + β1TINi, t + β2NIIi, t + β3OPEXi, t + β4DPSTi, t + β5CAPi, t + β6SIZEi, t + ε ...(I)

In the first model, the proxy of the profitability for NBFIs is return on assets (ROA). Both the fixed effect model and the PCSE model were used to assess the relationship between ROA and the predictor variables. The findings of the regression results using these techniques are summarized in Table 10.

Table 10: Summary result of Model I (ROA)

Variable	Expected Sign	Fixed Effect Model		PCSE Model	
		Actual Sign	Significance	Actual Sign	Significance
TIN	+	+	√	+	√
NII	+	+	√	+	√
OPEX	-	-	√	-	×
DPST	+/-	+	√	+	√
CAP	+	+	√	+	√
SIZE	+/-	+	×	+	√

Source: Software Output.

From the summary table, it can be seen that the actual signs of each of the variables were similar to the expected signs in both of the fixed effect model and the PCSE model. But the industry impact represented by the size of the NBFIs were not significant to the ROA according to the fixed effect model. The rest of the variables were both significant and similar to the hypothesized signs indicating that they are able to influence the ROA of the NBFIs significantly. On the other hand, all the variables were significant according to the PCSE result of this model except the operating expenditure. It indicates that the profitability, especially the ROA of the NBFIs may be negatively related to the operating expenses but their positive relationship is also possible. The logic of this findings is that the productivity of the employees increases with the increase in the operating expenses which helps to improve the ROA of the NBFIs.

$ROE = \alpha + \beta 1TINi,t + \beta 2NIIi,t + \beta 3OPEXi,t + \beta 4DPSTi,t + \beta 5CAPi,t + \beta 6SIZEi,t + \varepsilon$..(II)

Like the first model, both the fixed effect and the PCSE methods were used to analyze the relationship between the ROE and the defining variable.

Table 11: Summary result of Model II (ROE)

Variable	Expected Sign	Fixed Effect Model		PCSE Model	
		Actual Sign	Significance	Actual Sign	Significance
TIN	+	+	√	+	√
NII	+	+	√	+	√
OPEX	-	-	√	-	×
DPST	+/-	-	×	-	×
CAP	+	-	√	-	×
SIZE	+/-	+	×	+	×

Source: Software Output.

In the fixed effect model, the actual signs of each of the variables were similar to what was expected. Among these variables, total interest income, non-interest income, operating cost, and the capital strength can significantly influence the ROE of the NBFIs where the other two variables, deposit and the size of the NBFIs, are not significant to this model. According to the PCSE model, only the total interest income and the non-interest income are significant to this model and the rest of the variables are not significant enough to influence the ROE though their resulted signs were according to the expectation except the capital strength. That means the capital strength of the NBFIs may positively influence their ROEs which is not demonstrated in this model.

$NIM = \alpha + \beta 1TINi,t + \beta 2NIIi,t + \beta 3OPEXi,t + \beta 4DPSTi,t + \beta 5CAPi,t + \beta 6SIZEi,t + \varepsilon$ ..(III)

When the net interest margin was taken as the proxy of the NBFI profitability, only PCSE regression model has been used. Because the database of this third model does not meet the asymptotic assumptions of the Hausman test and so, whether fixed effect or random model is to use was undecided. However, according to the PCSE model, the actual sign of TIN, DPST, CAP and Size matched to that of the expectation. But among these four variables, only the TIN and the CAP were significant in the model. On the other hand, though NII and OPEX did not meet the expected sign, they were not significant either to describe the NIM of the NBFIs.

Table 22: Summary result of Model III (NIM)

Variable	Expected Sign	PCSE Model	
		Actual Sign	Significance
TIN	+	+	√
NII	+	-	×
OPEX	-	+	×
DPST	+/-	-	×
CAP	+	+	√
SIZE	+/-	+	×

Source: Software Output.

So, the overall findings of this paper are that the selected predictor variables can influence the profitability of the NBFIs in either of the measurements of the profitability. But their contributions to the profitability depends on what variable has been chosen as the proxy to measure the profitability. However, the most significant influential factor internal to the NBFIs is the total interest income which is positively related to the profitability of the NBFI industry irrespective of what profitability measures have been considered. But whether there is any trade-off between the assets and the profitability of the NBFIs which is one of the objectives of preparing this paper, cannot be answered from this analysis as it depends on what proxy of the profitability has been used. Instead, the analysis indicates that when the profitability is measured by the ROA, it increases with the size of the NBFIs but this predictor variable is totally irrelevant in case of ROE and NIM.

6. Conclusion

Both the banks and the NBFIs are an integral part of an efficient financial system of a country. In Bangladesh, the banking sector currently dominating the non-banking sectors although the situation has been improved from the previous days. However, this study aimed to reveal some of the predictor variables of the profitability of the NBFIs and the directions of their relationships. The predictor variables in this study all are internal to the NBFIs. Among the internal variables, only 6 variables have been considered as the predictor variables in this study. Of the variables considered here, interest income, non-interest income, and capital strength are very much influential factors in determining the profitability of the NBFIs. These three variables have positive impacts on the NBFIs' profitability. Another significant variable in this study was the operating expenses of the NBFIs which has a negative impact on the measures of the profitability of the NBFIs. But the analysis of this study provided some mixed results about the significance and the direction of the relationship in case of the amount deposit and the size of the NBFIs. Though there are a few studies related to the profitability indicators of the NBFIs, especially in the developing countries like Bangladesh, the results of this study are similar to that of the previous studies. It issurprising to see that two of the profitability proxies, ROE and NIM, is not influenced by the deposit and the size of the NBFIs which may contradict some other studies. This trend in Bangladesh can be justified by saying that the NBFIs in the country is not dependent on the sources of funds to make a profit. Perhaps, they are focusing more on the ways to serve their client which can uplift their profitability.

References

Andreev, M., & Danilov, Y. (2014). , (General Characteristics of the Non-Bank Financial Intermediation Sector Obtained from the Surveys of Non-Bank Financial Institutions). *SSRN Electronic Journal*. doi: 10.2139/ssrn.2597641

Andreev, M., & Danilov, Y. (2014). , (Problems of Regional Development of Non-Bank Financial Institutions Identified in the Course of Poll). *SSRN Electronic Journal*. doi: 10.2139/ssrn.2597667

Doumpos, M., Gaganis, C., & Pasiouras, F. (2016). Bank Diversification and Overall Financial Strength: International Evidence. *Financial Markets, Institutions & Instruments*, *25*(3), 169-213. doi: 10.1111/fmii.12069

Godlewski, C., & Sanditov, B. (2017). Financial Institutions Network and the Certification Value of Bank Loans. *Financial Management*, *47*(2), 253-283. doi: 10.1111/fima.12197

Hartwell, C. (2015). Après le déluge: Institutions, the Global Financial Crisis, and Bank Profitability in Transition. *Open Economies Review*, *26*(3), 497-524. doi: 10.1007/s11079-015-9349-9

Hassan, M. (2015). Issues and Challenges of Non-Bank Financial Institutions in Bangladesh. *Asian Business Review*, *2*(1), 61. doi: 10.18034/abr.v2i1.317

Kanas, A., Vasiliou, D., & Eriotis, N. (2012). Revisiting bank profitability: A semi-parametric approach. *Journal Of International Financial Markets, Institutions And Money*, *22*(4), 990-1005. doi: 10.1016/j.intfin.2011.10.003

Ofoeda, I. (2017). Corporate governance and non-bank financial institutions profitability. *International Journal Of Law And Management*, *59*(6), 854-875. doi: 10.1108/ijlma-05-2016-0052

Tan, Y. (2016). The impacts of risk and competition on bank profitability in China. *Journal Of International Financial Markets, Institutions And Money*, *40*, 85-110. doi: 10.1016/j.intfin.2015.09.003

Venegas, P. (2018). Risk Scoring for Non-Bank Financial Institutions. *SSRN Electronic Journal*. doi: 10.2139/ssrn.3280738

Appendix

Table 3: List of the selected NBFIs

Serial	Name	Starting Year	Listing Year	Age of Starting	Age of Listing
1	BD Finance	1999	2007	18	10
2	BIFC	1996	2006	21	11
3	Delta Brac Housing	1996	2008	21	9
4	Fas Finance	2001	2008	16	9
5	First Finance	1993	2003	24	14
6	ICB	1976	1977	41	40
7	IDLC	1985	1992	32	25
8	ILFSL	1996	2007	21	10
9	IPDC	1981	2006	36	11
10	Islamic Finance	2001	2005	16	12
11	Lanka Bangla	1997	2006	20	11
12	Midas Fin	1995	2002	22	15
13	Peoples Leasing	1996	2005	21	12
14	Phoenix Finance	1995	2007	22	10
15	Premier Leasing	2001	2005	16	12
16	Prime Finance	1996	2005	21	12
17	Union Capital	1998	2007	19	10
18	United Finance	1989	1994	28	23
19	Uttara Finance	1995	1997	22	20

Cite this article:

Abu Kalam & Monzurul Islam Utsho (2020). Effects of Firm Specific factors on Profitability of Non Bank Financial Institutions in Bangladesh: Evidenced from Dhaka Stock Exchange (DSE). *International Journal of Science and Business, 4*(11), 1-13. doi: https://doi.org/10.5281/zenodo.4065124

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