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Key Factors behind the Profitability of Conventional Banks in Bangladesh

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Abstract:

This study is an empirical investigation of key factors behind the profitability of Conventional Banks in Bangladesh during 2009-2013. By using simple regression model the empirical findings suggest that capital ratio, total loan as a percentage of total assets and staff expenditure as a percentage of total assets are highly correlated with profitability whereas total expenditure as a percentage of total assets and cost income ratio are highly negatively correlated with profitability. The study also suggests that bank size, operating efficiency; savings deposits as a percentage of total assets, branch, liquidity ratio and assets management have no significant relationship with profitability.

Keywords: Profitability, Internal Determinants, Conventional Banks

1. Introduction

The economy of Bangladesh is a mixed economic system. As well as mix economic system the banking system is also a mix system where both conventional and Islamic banks are operating competitively. In the banking sector Islamic banking system was introduced by the launching of Islamic Bank Bangladesh Ltd (IBBL) in 1983. After independence and before 1983 the banking system is totally based on conventional system. By the success of the Islamic banking system some conventional banks opened new wings from which they serve Islamic banking system. Not only opened new wings but also they introduced many Islamic, services, deposit and investment (in Islamic banking system credit/loan is known as investment) products. Though they opened and introduced Islamic bank wings and Islamic products and services but the whole banking system of them is fully conventional system. After independence Bangladesh had 6 nationalized commercialized banks, 2 State owned specialized banks and 3 foreign Banks. Now the number is 56 scheduled banks (these banks get license to operate under Bank Company Act, 1991) and 4 non scheduled banks (these banks are established for special and definite objective and operate under the acts that are enacted for meeting up those objectives). Among 56 scheduled banks 31 are conventional banks. Here conventional bank means the bank which banking systems are operated on the basis of interest based system. Only 23 conventional banks are listed in Dhaka Stock Exchange (DSE).

In most of the earlier researches in Bangladesh were about the comparison between conventional and Islamic banking performance. No studies are found with this study. Since the banking system of Bangladesh has been dominated by the conventional banking system so it becomes important to analyze the profitability of conventional banks. In this study 17 conventional banks have been selected as research sample among 23 listed conventional banks. This study shows the impact of some key factors which are collected from the balance sheet and income statement of respective banks on the conventional banking profitability and also helps the conventional banks to take precautions on these factors.

Rest of the study proceeds as follow: Literature review is presented in section II, followed by research objectives in III and methodology in section IV, results and analysis in V while section VI concludes.

2. Literature Review

A large number of studies have been done about determinants of bank profitability. Most of these studies used both internal and external factors influencing profitability. Among them some were on the basis of internal factors (Khan et al., 2011; Olweny & Shipo, 2011; Javaid, 2011; Akhtar et al., 2011; Almazari, 2014) and some were on the basis of internal and external factors (Naceur, 2003; Haron, 2004; Alexious & Sofoklis, 2009; Davydenko, 2010; Ali et al., 2011; Scott & Arias, 2011; Ramadan, 2011; Sastrosuwito & Sushi, 2011; Zeitun, 2012; Ongore & Kusa, 2013; San & Heng, 2013;).

Naceur (2003) analyzed the impact of bank's characteristics, financial structure and macroeconomic indicators on bank's net interest margins and profitability in the Tunisian banking industry for the 1980-2000 period and found that interest margins on bank loans had positive significant effect, size had negative significant and inflation and growth rates had no significant effect on bank profitability.

Alexiou and Sofoklis (2009) investigated the effects of bank-specific and macroeconomic determinants of bank profitability, using an empirical framework on six Greek banks. They suggested that banks' size had a significant positive relationship with profitability where credit risk, cost income ratio, bank liquidity and bank productivity had a significant negative relationship with profitability.

Davydenko (2010) examined the determinants of bank profitability in Ukraine by using a panel of individual banks' financial statements from 2005 to 2009 and found that provisions for loans, administrative expenses as percent of total assets and deposits measured relatively to banks size had a strong negative effect on profitability where capital is positive and significant impact on profits. They did not find any significant relationship between inflation and profitability.

Al-Tamimi (2010) analyzed influential differences in UAE's Islamic and conventional national banks during the period 1996-2008. By using regression model they ROE and ROA as dependent variables and GDP per capita, size, financial development indicator (FIR), liquidity, concentration, cost and number of branches as independent variables found that liquidity and concentration were the most significant determinants of conventional national banks' performance while cost and number of branches were the most significant determinants of Islamic banks' performance.

Khan et al. (2011) explored the determinants of bank profitability in Pakistan on 16 banks by using fixed effect model and random effect model over the period 2000 to 2010. In their study they divided banks into two groups where they found that bank size, loan growth, deposits to asset ratio, deposit to loan ratio had significant positive relation where net interest margin, tax and overhead expenses had negative significant relation with profitability.

Ali et al. (2011) examined the profitability indicators of public and private commercial banks of Pakistan explored in 2006-2009 where return on assets (ROA) and return on equity (ROE) were used as profitability measures. They found that asset management and economic growth had positive and significant relation with profitability in both models.

Scott and Arias (2011) analyzed banking profitability determinants on top five bank holding companies in the United States. They found that positive relationship between the return of equity and capital to asset ratio as well as the annual percentage changes in the external per capita income.

Ramadan et al. (2011) investigated the nature of the relationship between the profitability of banks and the characteristics of internal and external factors on 10 banks of Jordan over the period 2001-2010. They found that profitability tends to be associated with well-capitalized banks, high lending activities, low credit risk, and the efficiency of cost management.

Sastrosuwito and Sushi (2011) analyzed the determinants of post crisis Indonesian banking system profitability, covering the period 2001-2008. They found that expenses management, capitalization, and loan intensity significantly affect bank performance and macroeconomic environment had no significant impact on profitability due to insignificant result.

Zeitun (2012) investigated some influential factors like foreign ownership, banks-specific variables, and macroeconomic factors on Islamic and conventional banks in Gulf Cooperation Council (GCC) countries; during the period 2002-2009 where two samples are used. She found that bank's equity is important in explaining and increasing conventional banks profitability only, cost-to-income had a negative and significant impact on Islamic and conventional banks performance, foreign ownership does not improve Islamic and conventional banks performance, bank's age and banking development have no effect on bank performance, GDP is positively correlated to bank's profitability, while inflation is negatively correlated to bank's profitability.

Ongore and Kusa (2013) analyzed the impact of the determinants of financial performance of 37 commercial banks in Kenya by using linear multiple regression model and Generalized Least Square. They found that bank specific factors (capital adequacy, management efficiency, liquidity management) significantly affect the performance of commercial banks in Kenya, except for liquidity variable.

San and Heng (2013) investigated the impact of bank-specific characteristics and macroeconomic conditions on Malaysian commercial banks financial performance, during the period of 2003 to 2009. They measured profitability by the return on assets, return on equity and net interest margin and found that equity assets ratio and liquidity ratio had significant positive relationship with return on assets, bank size had positive significant relationship with return on equity loan loss reserves to gross loans ratio had negative significant relationship with return on assets and net interest margin.

Chavarin (2014) analyzed on the determinants of 45 commercial bank profitability in Mexico and found that the profitability of commercial banking is persistent by control of operating expenses, the charging of commissions and fees, and the level of capital and also found that market entry barriers and obstacles to competition as a relatively high persistence of profitability.

3. Objective of the Study

The main objective of this study is to measure the impact of key factors on profitability of the conventional banks from 2009 to 2013.

4. Methodology

4.1. Data

The article is mainly based on secondary data which are collected manually from the annual report of the respective conventional banks' website over the period 2009-2013.

4.2. Profitability Measure

The ratios that have been selected and used for profitability measure are:

Model	Ratio	Measure	Previous Studies
Model-1	ROA= Net Income after tax / Total assets	It measures the return as a percentage of total assets.	Naceur (2003); Haron (2004); Alexious & Sofoklis (2009); Sastrosuwito & Sushi (2011); Ali et al. (2011); Zeitun (2012); Ongore & Kusa (2013) San & Heng (2013); Eljelly (2013)
Model-2	ROE = Net profit after tax / Total Equity	It measures net profit after tax as a percentage of the money shareholders have invested.	Alexious & Sofoklis (2009); Ali et al. (2011); Suminto &Yasushi (2011); Zeitun (2012); Ongore & Kusa (2013) San & Heng (2013)
Model-3	NIM = Net interest income / Total assets	It measures the net interest income as a percentage of total assets.	Naceur (2003); Ongore & Kusa (2013) San & Heng (2013)
Model-4	ROD = Net profit after tax / Total deposit	It measures net profit after tax as a percentage of customers' deposit.	Rosly & Bakar (2003); Samad (2004); Ika & Abdullah (2011)
Model-5	PER = Profit after tax / Total Expenditure	It measures net profit after tax as a percentage of total expenditure.	Samad (2004)
Model-6	NPBCR = Net profit before tax / Capital and Reserves	It measures the net profit before tax as a percentage of capital and reserves.	Haron (2004)
Model-7	NPACR = Net profit after tax / Capital and Reserves	It measures the net profit after tax as a percentage of capital and reserves.	Haron (2004)
Model-8	NPBTA = Net profit before tax / Total Assets	It measures the net profit before tax as a percentage of total assets.	Bourke (1989); Molyneux & Thornton (1992); Haron (2004)
Model-9	TITA = Total Income / Total Assets	It measures the total income as a percentage of total assets.	Haron (2004)

Table 1

Following regression models were proposed to measure the profitability:

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\begin{aligned} &\text{Model-1: ROA} = \alpha + X_1\beta_1 + X_2\beta_2 + \dots & X_n\beta_n + \epsilon_n \\ &\text{Model-2: ROE} = \alpha + X_1\beta_1 + X_2\beta_2 + \dots & X_n\beta_n + \epsilon_n \\ &\text{Model-3: NIM} = \alpha + X_1\beta_1 + X_2\beta_2 + \dots & X_n\beta_n + \epsilon_n \\ &\text{Model-4: ROD} = \alpha + X_1\beta_1 + X_2\beta_2 + \dots & X_n\beta_n + \epsilon_n \\ &\text{Model-5: PER} = \alpha + X_1\beta_1 + X_2\beta_2 + \dots & X_n\beta_n + \epsilon_n \\ &\text{Model-6: NPBCR} = \alpha + X_1\beta_1 + X_2\beta_2 + \dots & X_n\beta_n + \epsilon_n \\ &\text{Model-7: NPACR} = \alpha + X_1\beta_1 + X_2\beta_2 + \dots & X_n\beta_n + \epsilon_n \end{aligned}
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Model-8: NPBTA = $\alpha + X_1\beta_1 + X_2\beta_2 + \dots X_n\beta_n + \epsilon_n$

$Model-9: TITA = \alpha + X_1\beta_1 + X_2\beta_2 + \ldots \ldots X_n\beta_n + \epsilon_n$

4.3. Internal Factors

Internal factors are the factors that are prejudiced by assessment made by the bank's management. The internal factors which have been selected for this study are as follows:

Internal Factors	Measure	Previous Studies
SZE	It measures the capital adequacy of the bank.	Alexious & Sofoklis (2009); Sastrosuwito & Sushi(2011); Ali et al. (2011); Khan et al., (2011); Ali et al., (2011); Zeitun (2012); San & Heng (2013)
CR	It measures the portion of total capital and reserves as a percentage of total assets.	Naceur (2003); Alexious & Sofoklis (2009); Sastrosuwito & Sushi(2011) San & Heng (2013)
TLTA	It measures the portion of total loan and advances as a percentage of total assets.	Naceur (2003); Vong & Chan (2006); Sastrosuwito & Sushi(2011); Khan et al., (2011); Ramadan (2011)
OE	It measures the operation efficiency of the bank.	Sastrosuwito & Sushi(2011) Ali et al. (2011); Sastrosuwito & Suzuki, (2011); Ali et al., (2011)
CIR	It measures the operating expenses as a percentage of total operating income.	Alexious & Sofoklis (2009); Zeitun (2012); San & Heng (2013)
SETA	It measures the portion of staff expenses as a percentage of total assets.	Bourke (1989); Molyneux & Thornton (1992); Haron (2004); Al-Tamimi (2010)
BNH	It measures the total number of branch of the selected banks.	Hester & Zoellner (1966); Emery (1971); Haron (2004); Al-Tamimi (2010)
TETA	It measures the portion of total expenditure as a percentage of total assets.	Haron (2004)
SATA	It measures the portion of savings accounts deposits as a percentage of total assets.	Haron (2004)
LIQ	It measures the portion of the bank's liquid assets to meet liabilities.	Bourke (1989); Molyneux and Thornton (1992); Haron (2004); Alexious & Sofoklis (2009); Eljelly (2013)
AM	It measures the operating income as a percentage of total assets.	Ali et al., (2011); Akhtar et al. (2011); Akhtar et al. (2011)

Table 2

5. Result and Analysis

The results of the regression analysis for nine models are shown in the following tables:

• Table-3

Table 3 exhibits the results of the regression models used to measure the profitability of the conventional banks during the period of 2009-2013.

Model	Adjusted R ²	F-value	P-value
ROA	0.451	6.692	0.00
ROE	0.366	4.996	0.00
NIM	0.439	6.410	0.00
ROD	0.483	7.468	0.00
PER	0.537	9.008	0.00
NPBCR	0.647	13.694	0.00
NPACR	0.380	5.236	0.00
NPBTA	0.652	13.965	0.00
TITA	0.300	3.965	0.00

Table 3

The adjusted coefficient of determination (adjusted R^2) for NPBTA, NPBCR, PER, ROD, ROA and NIM is higher than NPACR, ROE and TITA. Higher adjusted R^2 indicates that the variability in profitability of conventional banks is well explained by the linear relationship with all internal variables.

Table-4

Table 4 represents the results of all models used to measure the profitability and the correlation of internal variables and their impact on profitability.

Model	Significant level 0%	Significant level 1%	Significant level 5%	Not Significant
ROA		CR (0.120)	TETA (-0.191), TLTA (0.039)	SZE, OE, CIR, SETA, BNH, SATA, LIQ, AM
ROE			TETA (-2.065), TLTA (0.424)	SZE, OE, CIR, SETA, BNH, SATA, LIQ, AM, CR
NIM		SETA (1.317)		TETA, TLTA, SZE, OE, CIR, BNH, SATA, LIQ, AM, CR
ROD	CR (0.201)		TETA (-0.272)	TLTA, SZE, OE, CIR, BNH, SATA, LIQ, AM, SETA
PER	CR (1.638), TETA (-4.512)			TLTA, SZE, OE, CIR, BNH, SATA, LIQ, AM, SETA
NPBCR	CIR (-0.770)		TETA (-2.463), TLTA (0.590)	SZE, OE, BNH, SATA, LIQ, AM, SETA, CR
NPACR			TETA (-2.814)	SETA, TLTA, SZE, OE, CIR, BNH, SATA, LIQ, AM, CR
NPBTA	CR (0.149), TLTA (0.076), CIR (-0.062)		TETA (-0.214),	SETA, SZE, OE, BNH, SATA, LIQ, AM
TITA	TETA (0.764)	Table 4	CR (0.176)	TLTA, SZE, OE, CIR, BNH, SATA, LIQ, AM, SETA

Table 4

The effects of internal variables

This study found that capital ratio (CR) had a positive significant relationship with profitability measured by the return on assets (ROA), return on deposits (ROD), net profit after tax as a percentage of total expenditure (PER), net profit before tax as a percentage of total assets (NPBTA) and total income as a percentage of total assets (TITA). This positive relation indicates that a bank's performance can be improved if it is well-capitalized. The positive relationship between profitability ratio and capital ratio is similar to the findings of Bourke (1989), Molyneux & Thorton (1992), Stienherr & Huveneer (1994), Goddard et al. (2004) and Haron (2004). The study has also found that there is no significant relationship with profitability measured by the return on equity (ROE), net interest income as a percentage of total assets (NIM) and net profit after tax as a percentage of capital and reserves (NPACR).

In the study it has been found that total loan as a percentage of total assets (TLTA) had a significant positive relationship with profitability measured by the return on assets (ROA), return on equity (ROE), net profit before tax as a percentage of capital and reserves (NPBCR) and net profit before tax as a percentage of total assets (NPBTA). This indicates that with more loan and advances the chances of profitability will be high. Our result is also similar to the findings of Naceur (2003). There has been also found no significant relationship between TLTA with profitability measured by the net interest income as percentage of total assets (NIM), return on deposits (ROD), net profit after tax as a percentage of total expenditure (PER), net profit after tax as a percentage of capital and reserves (NPACR) and total income as a percentage of total assets (TITA) which is also similar to the findings of Kunt & Huizinga (2000).

In term of cost income ratio (CIR), a significant negative relationship has been found with profitability measured by the net profit before tax as a percentage of capital and reserves (NPBCR) and net profit before tax as a percentage of total assets (NPBTA) which is the similar to the finding of Bourke (1989), Molyneaux & Thornton (1992), Athanassoglou et al (2006), Alexiou & Sofoklis (2009), Zeitun (2012). It suggests that more efficient bank performs better. Besides negative relationship there has been no significant relationship found with profitability measured by the return on assets (ROA), return on equity (ROE), net interest income as a

percentage of total assets (NIM), return on deposits (ROD), net profit after tax as a percentage of total expenditure (PER) and total income as a percentage of total assets (TITA).

For the staff expenditures as a percentage of total assets (SETA), it has been shown that there is a significant positive relationship with profitability measured by the net interest income as a percentage of total assets (NIM). In the profitability measurement by the ROA, ROE, ROD, PER, NPBCR, NPBCR, NPBTA and TITA, there has been no significant relationship is found which is supported by the Al-Tamimi (2010).

For the total expenditure as a percentage of total assets (TETA), it has been shown that there is a significant negative relationship with profitability measured by the return on assets (ROA), return on equity (ROE), return on deposits (ROD), net profit after tax as a percentage of total expenditure (PER), net profit before tax as a percentage of capital and reserves (NPBCR), net profit before tax as a percentage of total assets (NPBTA) which is backed by the Molyneux & Thorton (1992). Alike Bourke (1989), Molyneux & Thornton (1992) and Naceur (2003) there has been significant positive relationship is found with profitability measured by the total income as a percentage of total assets (TITA). The study also found no significant relationship between TETA with profitability which is similar to the findings of Haron (2004).

The study has found some interesting findings in terms of bank size (SZE), operating efficiency (OE), branch (BNH), savings deposits as a percentage of total assets (SATA), liquidity ratio (LIQ) and asset management (AM). There is no significant relationship has been found with profitability in terms of these variables. These findings are also similar to Athanasoglou et al. (2008), Sastrosuwito & Suzuki (2011) in regards of SZE, Kwast & Rose's (1982), Chavarin (2014) in regards of OE, Al-Tamimi (2010) in terms of BNH, Haron (2004) in terms of SATA, Haron (2004), Chong et al. (2012), Muda et al. (2013), in terms of LIQ.

6. Conclusion

The total banking sector of the Bangladesh has been captured by the conventional banks. So it becomes important to investigate the profitability of the conventional banking in terms of their internal factors. This study critically investigated the internal factors of the conventional banks which are very sensitive to the profitability of the conventional banks. The study found capital ratio, total loan and advances as a percentage of total assets and staff expenditure as a percentage of total assets had a great significant impact on the profitability of the conventional banks. The study has also found insignificant positive relationship regarding saving deposits as a percentage of total assets and operation efficiency on profitability and this would help the researchers to investigate in future. The study has considerable policy relevance. If the conventional banks maintain adequate capital could improve the profitability as well as if the banks maintain the loan and advances portfolio efficiently could also accelerate the profitability.

In the study some limitations were faced. The data availability was one of the limitations. For data limitation we excluded some listed conventional banks. Another limitation was that there is no similar study was found in Bangladesh.

Further studies could include more variables such as different deposits (current accounts, fixed deposits) as a percentage of total assets, market capitalization, and loan provisions as a percentage of total assets. Further the study could cover internal and external variables in determining profitability. Another possible study is assessment of difference between conventional and Islamic banks in terms of internal factors determinants of profitability.

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Appendix

SL. No.	Bank Name	SL. No.	Bank Name
1.	AB Bank Ltd.	14.	Prime Bank Ltd.
2.	Bank Asia Ltd.	15.	Premier Bank Ltd.
3.	BRAC Bank Ltd.	16.	Sotheast Bank Ltd.
4.	The City Bank Ltd.	17.	United Commercial Bank Ltd.
5.	Dutch-Bangla Bank Ltd.		
6.	Dhaka Bank Ltd.		
7.	Eastern Bank Ltd.		
8.	IFIC Bank Ltd.		
9.	Jamuna Bank Ltd.		
10.	Mercantile Bank Ltd.		
11.	Mutual Trust Bank Ltd.		
12.	National Bank Ltd.		
13.	ONE Bank Ltd.		