

Effect of Liquidity and Bank Size on the Profitability of Commercial Banks in Bangladesh

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ABSTRACT

Nowadays Modern economy cannot be thought without banks. The banks of Bangladesh have great contributions to the development of this country. This study concentrated on the commercial banks in Bangladesh to determine the effect of liquidity and bank size on the profitability of the banks during the year 2011-2015. Seven commercial banks were selected and descriptive as well as correlations analysis statistics were used to conduct the study. Data from the annual reports of the banks were analyzed. The results stated that loan to asset ratio and bank size had a positive relation with return on asset (ROA) which was the indicator of profitability. The results also showed that deposit to asset ratio had a negative impact on the ROA of the selected banks. Although there were relationships among liquidity, bank size and profitability but liquidity and bank size did not have a significant influence on the profitability of the banks.

JEL Classification Code: G 21

Key words: Commercial banks, liquidity, bank size, return on asset

INTRODUCTION

The banking sector is the most growing and influential industry in the economy of Bangladesh. In most cases the banking industry defines the development aspect of an economy. In the competitive banking world, banks are surviving through enhancing their performance and efficiency. Bank's profitability depends on some internal and external factors. These factors make an effort to fluctuate the net earnings of a bank. This study investigated the effect of two internal factors which are liquidity and bank size on the return on asset (ROA) of the selected commercial banks. Bank's ability to pay depositors within a short time is called liquidity and this is essential to operate the regular banking process without interruption. The size of total asset can be defined as bank size and this factor has much influence on banking profitability.

Objective of the Study

The main objective to conduct this study was to identify the influences and relationship of the determinants of

profitability of banks such as liquidity and bank size on ROA of some selected Bangladeshi commercial banks.

LITERATURE REVIEWS

Liquidity helps a bank to reduce the chance of bank's failure to pay its depositors in regular transactions (Kumer and Sayani, 2015). Alshatti (2015) stated that it is essential to assure proper liquidity management for increasing the profitability of the banks.

Onuonga (2014) investigated six commercial banks in Kenya to determine the effect of internal factors those affect the profitability of the banks. He found that bank size, capital strength, ownership, operational expenses and diversification had a significant effect on the profitability which was measured by ROA.

Goddard et al. (2014) determined the profitability of banks through incorporation size, risk, diversification and ownership type. Their results stated that the relation between bank size and profitability was weak but the



relationship between capital asset ratio and profitability of banks was positive.

Larty et al. (2013) investigated 9 (nine) listed banks from Ghana aiming at determining the relationship between profitability and liquidity for the year 2005-2010. They used ratio analysis, time series, correlations and regression analysis to find out the results. From their study, they found that the relationship between profitability and liquidity was positive but insignificant during that period.

Munir et al. (2012) conducted a study on the performance of the public sector banks in Pakistan. They selected some variables those were used to determine the banks' performance and the variables were total assets, advances, investments, deposits, profits after tax and ROA.

Ongore and Kusa (2013) studied on the determinants that affect the performance of the commercial banks in Kenya. They used return on equity, return on asset and net interest margin as the bank performance indicators whereas they capital adequacy, management efficiency, asset quality and liquidity as the internal factors and GDP growth rate and inflation rate as external factors for the study. Their study revealed that liquidity management and external variables did not have a significant effect but other than these all the variables had a significant effect on the performance of the 37 banks in Kenya for the period of 2001-2010.

Kedia (2016) used the non-performing asset, credit to deposit ratio, net interest income and operating expenses as independent variables and net profit as dependent variable to analyze the profitability of public sector banks in India.

Ayanda et al. (2013) investigated the Nigerian banking industry. They found that the size of the banks and cost efficiency did not have significant but credit risk and capital adequacy had significant on the profitability of the selected Banks in Nigeria.

Samad (2015) examined 42 Commercial Banks in Bangladesh to find out the determinants of the profitability of banks. He stated that bank size and macro economic variables were insignificant to profitability but bank-specific factors such as equity capital to total asset, loan to deposit ratio, loan loss provision to total asset and operating expenses had a significant effect on the profitability of the banks in Bangladesh.

Qin and Pastory (2012) conducted a study to measure the profitability of commercial banks in Tanzania. The results from the study indicated that liquidity and asset quality had a positive effect but level of nonperforming loans and capital adequacy had a negative effect on the profitability of the banks.

Dawood (2014) evaluated the profitability of commercial banks in Pakistan for the period 2009-2012. The internal factors of the study were management policies, capital ratios and risk management whereas inflation and

government policies were the external factors. The profitability of the banks was determined by ROA which was the dependent variable of the study. The findings of the study suggested that cost deficiency, liquidity and capital adequacy had an influence on the profitability but bank size did not have any impact on the profitability of the banks in Pakistan.

Fisseha (2015) analyzed the profitability of commercial banks on the basis of bank size, capital adequacy, liquidity risk, credit risk, management efficiency, labor efficiency, inflation rate and real GDP rate.

Saad and Zhengge (2016) conducted a study to find out the effect of organizational factors such as liquidity, asset utilization, leverage, market share position and firm size on the ROA ROE of financial service firms.

RESEARCH METHODOLOGY AND DESIGN

Researchers collected annual reports of some commercial banks in Bangladesh and then randomly selected seven Commercial Banks to conduct the study which were -

- AB Bank Limited
- Bank Asia Limited
- Dhaka Bank Limited
- Eastern Bank Limited
- Mercantile Bank Limited
- Premier Bank Limited and
- Prime Bank Limited

The study investigated the banks for the year 2011-2015 and annual reports of the banks and journals were used as secondary sources of data. Loan to asset ratio (LA) and deposit to asset ratio (DA) were used as liquidity measurement and natural logarithm of total asset (log TA) were used as bank size where the return on asset (ROA) was the profitability indicating variable. The equations of the ratios are as follows:

- i. Loan to Asset Ratio (LA) = $\frac{\text{Total Loans}}{\text{Total asset}}$
- ii. Deposit to Asset Ratio (DA) = $\frac{\text{Total Deposit}}{\text{Total asset}}$
- iii. Return on Asset (ROA) = $\frac{\text{Earnings available to common shareholders}}{\text{Average Total Asset}}$

Researchers used the statistical tools such as mean, median, standard deviation (SD), minimum, and maximum and correlation analysis to analyze the result. Researchers used SPSS 16 software to determine the result.

Hypothesis:

H₀: Liquidity and bank size do not have a significant effect on profitability.

H₁: Liquidity and bank size have a significant effect on profitability.

RESULTS AND ANALYSIS

Table 1 represents the loan to asset ratio, deposit to asset ratio, natural logarithm of total asset and returns on asset for the period from 2011-2015 successively. From table 2, we can see that the mean and standard deviation of the variables for each bank during the period and table 3 summarizes accumulate descriptive statistics (mean, median, standard deviation, minimum and maximum) of all the selected conventional banks.

Table 1: Ratio analysis of seven selected banks

Year	LA	DA	Bank Size (log TA)	ROA
AB Bank Limited				
2011	0.6636462	0.7501419	11.1886606	0.0096517
2012	0.6475884	0.7971181	11.2443199	0.0088615
2013	0.7014528	0.7704926	11.3216994	0.0057022
2014	0.7444174	0.7983287	11.3947394	0.0065583
2015	0.7540453	0.7446594	11.4577893	0.0054468
Bank Asia Limited				
2011	0.7054392	0.8052371	11.0724098	0.0182971
2012	0.6613812	0.7800845	11.1499434	0.0065536
2013	0.6539310	0.8098695	11.2176607	0.0086877
2014	0.6512439	0.7641815	11.2650392	0.0115279
2015	0.6159759	0.7539732	11.3534653	0.0124466
Dhaka Bank Limited				
2011	0.7233940	0.8118731	11.0213431	0.0229806
2012	0.6794301	0.8039984	11.1258588	0.0066089
2013	0.6902629	0.7976681	11.1625652	0.0142034
2014	0.6484368	0.7814320	11.2035097	0.0137537
2015	0.6668989	0.7820529	11.2485004	0.0089778
Eastern Bank Limited				
2011	0.6894772	0.6396793	11.0702755	0.0255121
2012	0.6589448	0.6218180	11.1674486	0.0180850
2013	0.6533170	0.7399744	11.1991058	0.0166122
2014	0.6919507	0.6729820	11.2391507	0.0128941
2015	0.7035874	0.6693445	11.2812408	0.0125235
Mercantile Bank Limited				
2011	0.6834497	0.8062571	11.0669044	0.0172302
2012	0.6112897	0.7727179	11.1840267	0.0101687
2013	0.6725071	0.8332908	11.1616745	0.0132800
2014	0.6933210	0.7983437	11.2281455	0.0145249
2015	0.6889934	0.8037205	11.2643010	0.0150848
Premier Bank Limited				
2011	0.6640984	0.8097675	10.8747780	0.0071358
2012	0.6387836	0.8204471	10.9124011	0.0077021
2013	0.5860916	0.8282460	10.9538215	0.0091554
2014	0.6279439	0.8309578	11.0475723	0.0095445
2015	0.6947652	0.8283386	11.1187207	0.0079135
Prime Bank Limited				
2011	0.7054960	0.7951034	11.3031867	0.0208692
2012	0.6929629	0.7640053	11.3768853	0.0122979
2013	0.6476376	0.8219985	11.3900915	0.0084281
2014	0.5957465	0.7989235	11.4088321	0.0089486
2015	0.6109931	0.7685768	11.4039341	0.0071358

Source: Authors

Table 2: Mean and standard deviation of the Banks

LA		DA		Bank Size (log TA)		ROA	
Mean	SD	Mean	SD	Mean	SD	Mean	SD
AB Bank Limited							
.702	.047	.772	.025	11.321	.109	.007	.002
Bank Asia Limited							
.658	.032	.783	.025	11.212	.108	.012	.005
Dhaka Bank Limited							
.682	.028	.795	.014	11.152	.086	.013	.006
Eastern Bank Limited							
.680	.022	.669	.045	11.191	.080	.017	.005
Mercantile Bank Limited							
.670	.034	.803	.022	11.181	.075	.014	.003
Premier Bank Limited							
.642	.041	.824	.009	10.982	.100	.008	.001
Prime Bank Limited							
.651	.049	.790	.024	11.377	.043	.012	.006

Source: Authors

Table 3: Descriptive statistics of all the Banks (2011-15)

	LA	DA	Log TA	ROA
Mean	0.6691	0.7764	11.2023	0.0119
Median	0.6699	0.7897	11.1914	0.0115
SD	0.0206	0.0502	0.1268	0.0034
Minimum	0.6423	0.6688	10.9815	0.0072
Maximum	0.7022	0.8236	11.3766	0.0171

Source: Authors

From these 3 tables it is observed that the average ROA of AB Bank Limited, Bank Asia Limited, Dhaka Bank Limited, Eastern Bank Limited, Mercantile Bank Limited and Prime Bank Limited were 0.72%, 1.15%, 1.33%, 1.71%, 1.41%, 0.83% and 1.15% respectively whereas the average ROA of all the banks was 1.19% during 2011-2015. The mean and median of LA were 0.6691 and 0.6699 whereas the variation in results which was determined by SD of LA was 0.02. The minimum LA was of Premier Bank Limited and the maximum LA was of AB Bank Limited. Deposit to asset ratio had a mean value of 0.7764 with an SD of 0.05. Return on asset of the banks had the least standard deviation. The maximum DA of 0.8236 came in Premier Bank Limited and the minimum DA of 0.6688 came in Eastern Bank Limited. The bank size which was determined by the logarithm of total asset was the largest of Prime Bank Limited and was the smallest of Premier Bank Limited. Among the determinants total assets had the maximum and loan to asset ratio had the minimum deviation in results.

In table 4 the Pearson correlation analysis of LA, DA, log TA and ROA is summarized. ROA had a positive correlation of $r = 0.064$ with LA and $r = 0.001$ with log TA but had a negative correlation of $r = -0.624$ with DA. LA was also negatively correlated with DA. LA and log TA had a positive correlation but there was a negative correlation of $r = -0.233$ between DA and log TA.

Table 4: Correlation analysis

		Correlations			
		ROA	LA	DA	Log TA
ROA	Pearson Correlation	1	.065	-.624	.001
	Sig. (2-tailed)		.890	.135	.998
	N	7	7	7	7
LA	Pearson Correlation	.065	1	-.415	.367
	Sig. (2-tailed)	.890		.355	.418
	N	7	7	7	7
DA	Pearson Correlation	-.624	-.415	1	-.233
	Sig. (2-tailed)	.135	.355		.616
	N	7	7	7	7
Log TA	Pearson Correlation	.001	.367	-.233	1
	Sig. (2-tailed)	.998	.418	.616	
	N	7	7	7	7

The result shows an insignificant relationship between profitability and liquidity and Dawood (2014) also found out that liquidity had a weak correlation with ROA. But Samad (2015) found liquidity as a significant factor for determining profitability. This study also found that the Bank size did not have much effect on the profitability and the effect was same as of Kedia (2016), Samad (2015), Dawood (2014) and Goddard et al. (2014). This table also indicates that the variables had relationships with one another, but the relationships were not significant. For this reason the null hypothesis was accepted. These relationships among the variables are insignificant and do not have a major consequence in the overall profit of the banks.

CONCLUSION

The paper examined two profitability determinants which are clearly stated as liquidity and bank size of seven commercial banks throughout 2011-2015. Mean, median, standard deviation (SD), minimum, maximum and correlation analysis statistics were used to determine the results of the study. The findings from the study indicated that the loan to asset ratio (LA) positively affected the profitability indicator ratio (ROA) of the banks. It was observed that the larger the bank size, the greater the Return on Assets of the banks. On the other hand, there was a negative impact of deposit to asset ratio (DA) on the profitability of the banks. Overall the correlation results indicated that the liquidity and the size of the banks did not significantly influence the bank's profitability. This study can be proved as a true initiative to indicate the effect of asset management and size of the bank in estimating the ROA of a bank.

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