INFLUENCE OF CAPITAL ADEQUACY ON THE GROWTH OF BANKING SECTOR IN BANGLADESH

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Abstract

Basel Committee on Banking Supervision determines today's regulatory framework for bank capital adequacy. Holding adequate capital is emphasized so that banks can safeguard themselves against default risk and many other risks. This study focuses on impact of holding enough capital on growth of banking sector. That is, by reading this article one will be able to know how holding adequate capital fasters the growth of banking industry. The study has shown the relationship among capital adequacy, solvency, credit risk and profitability. All the variables have positive impact on capital adequacy. To show the relationship factor analysis, regression analysis and using secondary data have been conducted. Scenario of capital to risk weighted asset have been shown, to reveal the true picture. Capital adequacy under BASEL has helped to reduce large bank's dominance which basically ensures the growth of a bank. This study will show why holding enough capital is momentous and what are the indicators that influence capital adequacy.

Keywords:

Capital Adequacy, Solvency, Credit Risk, Profitability

1. INTRODUCTION

Capital is the main weapon to cushion a bank from any kind of risk in the process of financial intermediation especially for credit and liquidity risk. Measuring capital adequacy is a hard-hitting task. The current regulatory framework for assessing bank capital adequacy is under review by the Basel Committee on Banking Supervision. An experiential analysis of the relationships between different capital ratios and bank failure recommends that two simple ratios: the leverage ratio and the ratio of capital to gross revenue may worth a role in the modified framework. How much capital is adequate for a bank depends for several things and if the bank fails to assess it properly then it is going to be in big despair. Capital requirements have efficiently replaced reserve requirements as the main restraint on the behavior of banks, over the last decade. Several statistical tools and several ratios have been used to reflect the impact of capital adequacy on the growth of banking sector. No organization can move forward without equity capital; bank is not an exception.

Minimum capital requirement is set by BASEL II which is 10% of RWA. 50% of which contains Tire 1 capital. However, some of the banks have already adopted BASEL III, which includes capital buffer and countercyclical buffer which will be more helpful in the time when economy has more credit in the market. Six state-owned banks, three private commercial banks, and one foreign bank have a combined capital shortfall of 18,388 crore as of March 2019 as a result of failure to meet the minimum regulatory capital requirements. This is why holding enough capital has become a crucial factor for banks for its survival. Otherwise, it will be difficult for the banks to sustain in the

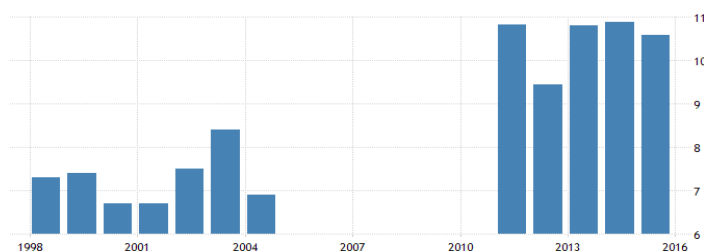market, as capital deficiency may have a negative impact on profitability of banks, Ceteris paribus.

Fig.1. Capital to Risk Weighted Asset (Source: World Bank)

2. REVIEW OF LITERATURE

Capital adequacy emphases safeguarding depositors and other creditors from the probable losses that a bank might experience and holding a sufficient amount, for a bank. It assists fascinating all probable financial risks associated with market, credit, operation, interest rate, reputation, liquidity, strategy, environment etc. As per Basel-III, banks in Bangladesh are instructed to maintain the Minimum Capital Requirement (MCR) at 10% of the Risk Weighted Assets (RWA) or BDT 4 billion as capital, whichever is higher.

Under the Supervisory Review Process (SRP), banks have to maintain a level of adequate capital which is more than the minimum required capital. This "higher level" of capital for the banks is usually determined by SRP and SREP (Supervisory Review Evaluation Process, the central bank's assessment). The collective amount of capital of the banking sector in Bangladesh was BDT 280.58 billion as on December 2009 which increased and became BDT 945.61 billion at the end of December 2017.

Capital adequacy assists bankers and regulators to engross any potential risk that bank may face. Capital has a vital role in dipping the number of bank failures. It also plays crucial role for minimizing various risk components in banking industry. Besides, adequate capitalization is an important variable for banks and NBFIs as well. Banks must have enough capital to provide funds in times of need and for growth.

Beck and Cull [17] claimed that in Sub-Saharan Africa, banking sector experienced a significant change. Tough due to recessionary effect, regulations and the exercise of immense caution were exercised, banks had to cope with vigorous situations in their attempt to pamper up their profitability to survive. This caused many banks to look deeply in their efforts to enhance profitability.

Ayaydin and Karakaya [4] conducted a study on effect of capital on Turkish banks' profitability, and they found both negative and positive relation between capital and profitability.

Study of Lee and Hsieh [10], revealed that the relationship between bank capital and profitability has recently become a matter of concern, as the level of capital may give rise to both constructive and adverse effect on banks' profitability.

Saeedi and Mahmoodi [1], Tsangyaa et al. [11], Zeitun and Tian [9] found both positive and negative effects between capital and profitability.

On the other side, Saeed et al. [13], David and Olorunfemi [5] found positive relation between capital and profitability.

Banks as financial mediators acquire their capital through owners' funds also known as equity capital, reserves and share capital [16]. The profit making capability of banks depends on the cautious amalgamation of assets and liabilities to meet the liquidity needs imposed by the environment like the pecuniary and banking policies [15].

When banks get together, they establish a smaller network compared with competition as opening new branches damages rival by grabbing or attracting their clients, also considered as cartel. By harmonization, banks can evade this problem. However, cerasi experimental analysis divulges the dimness in explaining the response process of structure-performance relation.

According to Bernauer and Koubi [12] in Nigeria, the Central Bank of Nigeria (CBN) as an apex Bank has the legal compulsion to control banks' capitalization as a way of extenuating their solvency problems which may subvert domestic and international financial system.

In the banking sector, capital is usually monitored and regulated by an apex Bank to minimize bank solvency crisis Bernauer [8]. The theorem of capital sufficiency has its focus on actions and regulations from the apex Bank towards guaranteeing that banks have adequate capital to look after their numerous financial constraints [14].

It is assumed that with adequate capital a bank will be able to soak up its losses. Bank's capital therefore depends on a number of factors such as size of the bank, riskiness in its operations, the market forces, the credit policy, its management capacities, its portfolio (assets and cash), and growth rate [6]. All these variables act as influential forces. For example, if a bank wants to grow, with amplified deposits and earning assets, it has to enlarge its capital base as well as keep the risk level stagnant [15].

Klein [6] and Monti [7] reflected a bank as a firm maximizing its NPV (net present value) of assets, and established a milestone model of banking, considering banking behavior. Klein [6] assumed that banks upsurge profits for the sake of intermediation action.

To conduct the study, we have taken help of Capital adequacy ratio to reveal the impact of capital on the sustainability of banks. Capital ratios have long been a precious weapon for measuring the safety and soundness of banks. The informal use of ratios by bank supervisors and regulators goes back well over a century Mitchell [2]. When capital ratios were initiated in ruling in Gilbert, Stone and Trebing [3], they were applied in a diverse way. The regulatory prerequisite set a minimum level of capital that the institution had to hold. And this basically makes sure the sustainability of the bank in todays' competitive banking sector.

3. RESEARCH QUESTIONS

The study will satisfy following questions:

1. Why is adequate capital crucial for banks?
2. How is solvency, credit risk and profitability related with capital adequacy?
3. How can sufficient capital cushion banks from risks?

4. OBJECTIVES OF THE STUDY

The study is conducted for the following purposes:

• To expose to importance of capital on the sustainability of a bank.
• To find out the relationship between solvency and capital adequacy.
• To find out how credit risk and capital adequacy are related.
• To divulge the way profitability and capital adequacy are associated.

5. RESEARCH METHODOLOGY

5.1 SAMPLE SIZE AND SOURCES OF DATA

For the study 8 scheduled private conventional banks among 55 scheduled banks operating in Bangladesh (Fig.2) have been selected. 5 years data (2012-2016) have been collected for calculating Capital adequacy ratio.
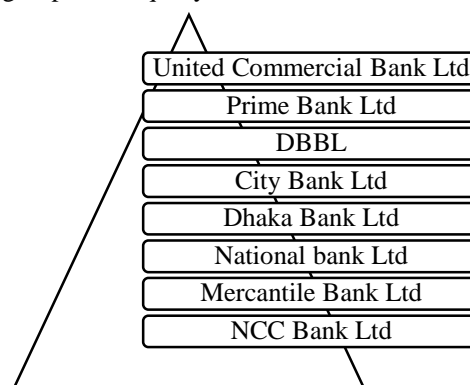

Fig.2. Private Conventional Banks

The study is based on both qualitative and quantitative data which is collected from annual audited financial statements of the sample banks.

For the study a structured questionnaire was given among the particular sample to collect data which is considered as a primary source of data. A non-comparative scale questionnaire has created by using a seven-degree Likert scale consisting of such values.

Table.1. Likert Scale

Scale	Label
1	Strongly Disagree
2	Moderately Disagree
3	Slightly Disagree

4	Neutral
5	Slightly Agree
6	Moderately Agree
7	Strongly Agree

As the study is concerned with the scheduled conventional banks, all the employees of the targeted conventional banks are potentially constituted the sampling frame as a population. For the survey, questionnaire was given to the 80 bank personnel of 8 commercial banks, 10 respondents from each banks. The survey has been done at Dhaka city only.

Table.2. Demographic Information of Respondents

Gender	Male	Female		
	56	24		
Age	25-34 years	35-44 years	45-54 years	> 55 years
	39	38	2	1
Working Experience	< 1 year	1-3 years	4-6 years	7-9 years	> 10 years
	4	16	22	22	16

The secondary data which is used in this research is quantitative in nature. Different articles and websites of the selected sample banks are used as secondary source of data.

5.2 INSTRUMENTATION

To rationalize the research following factors have been selected;

- Effect of capital adequacy on solvency
- More capital indicates more solvency
- Panic run is resolved by capital adequacy
- Credit risk can be minimized
- More capital more credit
- Enough capital assures better credit risk management
- Holding more capital reduces profitability
- But the above factor has a positive impact in the long run
- Enough capital ensures the stock holders about company's solvency
- Ensures growth
- Prevents default risk and
- Capital adequacy increases profitability in long run

For the study descriptive statistics, ranking factors and factor analysis techniques have been used. KMO test has been used to verify reliability. For all the analysis SPSS 16.0 has been used. Graphical presentation has also been shown to focus on CAR. Regression analysis has been done to figure out the relationship among the variables. For this following variables are selected in Table.3.

Table.3. Category and label of variable

Category of variable	Label of variable(s)
Independent variables	Solvency
	Credit Risk
	Profitability
Dependent variable	Capital Adequacy

5.3 RESEARCH HYPOTHESIS

H_0: There is no significant relationship among the selected variables.

H_1: There is a significant relationship among the selected variables.

Table.4. Variables and outcomes

Variables	Expected outcome
Solvency	Significant relationship
Credit Risk	Significant relationship
Profitability	Significant relationship

5.4 VARIABLES EXPLAINED

- *Solvency*: The ability of a bank to meet its long-term debts and financial obligations.
- *Credit Risk*: The possibility of a loss resulting from a borrower's failure to meet financial obligation.
- *Profitability*: The financial benefit realized when revenue generated from a business activity exceeds the expenses.
- *Capital Adequacy*: Holding a portion of capital which may be considered sufficient.

6. ANALYSIS AND RESULTS

The Fig.2 shows the trend of CAR of the selected banks from 2013- 2017. The result shows that except Prime bank all the banks CAR fluctuated over the last 5 years.
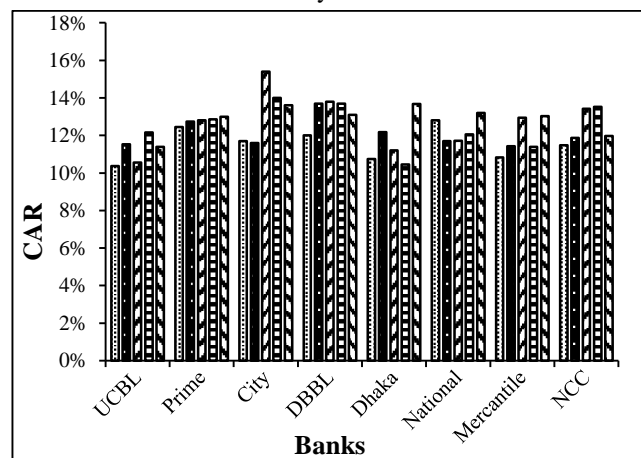

Fig.3. CAR of Selected Banks from 2013-2017

UCBL is holding less Capital compared to rest of the banks. CITY banks' CAR was the highest in the year 2014, this might be due to political vulnerability, so the bank held more capital to cushion itself from risks. By analyzing the primary data using SPSS 16.0 following results are found.

6.1 EXTRACTION METHOD - PRINCIPAL COMPONENT ANALYSIS

Table.5. Results of principal component analysis and reliability test

Variable	Items	Factor Loading	KMO test of adequacy	Bartlett's test of Sphericity	Sig.	Cronbach Alpha
Solvency	Q1	0.737	0.575	8.530	.036	.638
	Q2	0.667				
	Q3	0.636				
Credit risk	Q4	0.920	0.50	65.884	.000	.700
	Q5	0.755				
	Q6	0.704				
Profitability	Q7	0.813	0.576	33.674	.000	.604
	Q8	0.716				
	Q9	0.705				
Capital Adequacy	Q10	0.827	0.594	32.621	.000	.614
	Q11	0.818				
	Q12	0.610				

Source: Field survey, 2017

Satisfactory correlation has shown among the items of each variables as the indicator of Kaiser-Meyer-Olkin measure of sample adequacy for individual variance is found 0.5 and above. Individual variances, solvency, credit risk, profitability, capital adequacy, are found 0.575, 0.5, 0.576 and 0.594 respectively, which shows data set is appropriate for further analysis. Bartlett's test for sphericity of all the constructs have also shown that the overall importance of the correlation matrices is satisfactory. Cronbach alpha values of all the constructs are above 0.6. So the data of this study represents good internal consistency. The value of factor loading for each items is also good which means these are fit for the analysis. The measurements reveal that data set is reliable.

Table.6. Model summary

Independent Variable	Dependent variable	R	F	Sig.	D	VIF	Tolerance	Condition Index
Solvency	Capital Adequacy	0.642	10.562	.000	1.718	1.049	0.953	26.143
Credit Risk						1.260	0.794	10.119
Profitability						1.308	0.764	15.752

The coefficient of correlation shows that the selected independent variables have explained 64.2% of the dependent variable (R value). The result of F-test in the Table.3 shows that all of the independent variables have significant positive impact on the capital adequacy. Significance is also assured (value of significance is 0). Value of *D* test is 1.718, as it is below 2 so is

can be said, no autocorrelation exists in here. Other conditions have also been fulfilled in this analysis.

Table.7. Results of Hypothesis Testing

Independent Variable	Dependent variable	Mean	Standard deviation	Beta	T	Sig.
Solvency	Capital Adequacy	6.0958	0.68373	0.190	1.926	.05
Credit Risk		4.9542	1.18564	0.243	2.251	.027
Profitability		5.3458	0.90699	0.324	2.939	.004

Depending on the result is can be said that, solvency has positive and significant influence on capital adequacy Credit risk also has strong or significant relationship with dependent variable which is capital adequacy. The same comment is applicable in case of profitability that is, profitability and capital adequacy are significantly related. Depending on the result of T test and value of significance, we can easily reject the null hypothesis i.e. there is a significant relationship among the variables.

Table.8. Capital Adequacy Ratio

Year	2013	2014	2015	2016	2017
UCBL	10.37%	11.53%	10.56%	12.16%	11.39%
Prime	12.45%	12.74%	12.80%	12.85%	13.00%
City	11.70%	11.60%	15.40%	14.00%	13.60%
DBBL	12.00%	13.70%	13.80%	13.70%	13.10%
Dhaka	10.74%	12.18%	11.20%	10.46%	13.67%
National	12.80%	11.69%	11.71%	12.05%	13.19%
Mercantile	10.83%	11.43%	12.95%	11.39%	13.03%
NCC	11.47%	11.87%	13.42%	13.52%	11.97%

7. CONCLUSION

Capital without any doubt is the crux for a financial institution. Bank is not an exception. Banks need to hole enough capital for their own interest. This study shows that there are significant relationship among solvency, credit risk, profitability and capital adequacy. Though holding more than enough capital may reduce the profitability in the short run because banks will be required to hold more liquid, but it will definitely have a positive blow in the long run. Earlier the desired rate of capital was calculated by leverage ratio, but as it has some problems so it was replaced by Capital Adequacy Ratio (CAR) (refer Table.8). As per CAR banks are required to hold capital as per risk weighted asset, which safeguards banks from being insolvent. BASEL basically emphasizes on holding adequate capital to reduce vulnerability in banking sector. BASEL I was replaced by BASEL II as it failed to meet determining sufficient capital requirement and reducing large banks' dominance, so it was replaced by BASEL II. BASEL II is replaced by BASEL III which includes capital buffer and counter cyclical buffer in addition which will hopefully protect banks when there is too much capital in market, that is, when banks will be more exposed towards credit risk.

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