

MEASUREMENT OF CAPITAL ADEQUACY OF AB BANK LIMITED

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Abstract: This paper attempts to analyze the core areas of capital adequacy of the AB Bank Limited. Tools like ratio analysis, index analysis, trend analysis, multiple regression analysis were used in the research. Main analysis part is divided into two sections. One covers the theoretical framework of capital adequacy measurement and the other covers the analysis and interpretation of capital adequacy. Here both these sections scrupulously analyzed the total capital, core capital and the supplementary capital position of the AB Bank Limited from the year 2008 to year 2012 with proper statistical table and graphical presentation through using aforementioned methodologies. Basic focus has been given on the year 2012 for gathering interrelated knowledge of the procedure of capital adequacy measurement of the bank. AB Bank Limited is efficient, organized and regulated to the Bangladesh Bank guidelines to keep the minimum capital for all sorts of creditors the bank has. Capital provides funds for the bank's growth and development of new services and facilities as well as serving as a regulator.

Keywords: Bank, Capital Requirements, Ratios, Reserves, Capital Adequacy, Regression JEL Classification Numbers: G01, G21, G28, G33

1. INTRODUCTION

AB Bank Limited is one of the major banks in the country. Many commercial banks are operating in this country and playing a vital role in the economic progress through mobilization of funds from savings units to deficit units; AB Bank Limited is one of them. To supervise every bank's management performance Bangladesh Bank regulates performance measurement rating like CAMELS rating as standard rating system. The banks should follow the regulations & guidelines of Bangladesh Bank for ensuring banking business secured. Bangladesh Bank has recently introduced new guidelines for Minimum Capital Requirement (MCR) for every bank operated in the country. The new MCR is 10% on the calculation of the Total Risk Weighted Assets (RWA). If banks hold more capital, they can more easily confront the unforeseeable risks and more likely to control the market share. Capital adequacy measurement under the Bangladesh Bank guideline is needed for banks to safe their banking business for longer term growth and survival in shorter period. Capital requirement threshold for banks has been raised from 9% to 10% of the total risk weighted assets and core capital requirement has also been raised from 4.5% to 5% in the recent year. In the recent years AB Bank Limited has maintained the sufficient CAR as guided by the Bangladesh Bank; it seems to in the upward sign for the bank industry. This entire paper is on the basis of theoretical framework guidelines, calculation of capital, scope of the total capital and total risk based weighted assets & also covering the strengths and weaknesses as well as opportunities and threats of the bank. The research covers the area of the total capital adequacy measurement for a bank; through ratio analysis and also using different statistical tools.

2. OBJECTIVES OF THE RESEARCH

The objectives of this research are as follows-

- To evaluate the current capital condition of the AB Bank Limited to run its operation smoothly.
- To evaluate the current capital position of the bank for sustaining in long run.

3. RESEARCH METHODOLOGY

3.1 Technique Used in this Research:

- Ratio Analysis
 - Capital Adequacy Ratio (CAR)
 - Core Capital Ratio
- Supplementary Capital Ratio
- Different statistical tools.

3.2 Data Collection Process:

3.2.1 Primary sources of data:

Collection of data from Bank Officials

3.2.2 Secondary sources of data:

- Annual researchs of AB Bank Limited from year 2008 to year 2012.
- Internet
- Daily News Paper, Journals and Periodicals
- Bangladesh Banks guidelines

4. PROBLEM STATEMENT OF THE RESEARCH

CAMELS rating are one of the most popular methods to make performance rating. Among the components of CAMELS Capital Adequacy is the first and most fundamental tool to measure the performance. Capital adequacy covers mainly core capital and the other things are supplementary capital and additional supplementary capital and also relate with risk weighted assets these components can estimate the capital performance of one bank. Every bank should need to maintain minimal capital to manage any devastated situation may incur in future. Sufficient capital can manage the bank solvency in rational point. Capital gives the bank enough funds to be chartered, organized and running operation before customer deposits are collected. Initial expenditures like land acquisition, structuring building and equipping all facilities are made up even before the opening day of formal operation. Adequacy of capital of the bank can give the shareholders cushion. It saves the investors money which invested in that bank. Every banks main concern is to keep the depositors money safe and certain. Inadequate capital may force the bank to go unwelcome situation.

5. RATIONALE OF THE RESEARCH

Banking business is very much competitive now-a-days. So security and proper distribution of money as loan disbursement are very much essential. Bank management uses the depositors' money as huge source of fund. Banks should follow the guidelines, regulations, techniques and methodology originated by the Central Bank to provide the security of the depositor's fund. Capital is the safeguard for the depositor's deposited amount. Capital adequacy verifies the sufficiency of the bank's capital. This research is entirely covering the basic framework of capital adequacy of a bank and its calculation overview and also gives the elementary idea about one bank's capital adequacy. Moreover, this research would give the idea regarding the elements of the different sort of capital and their importance to the bank capital reserve provision.

6. SCOPE AND LIMITATIONS OF THE RESEARCH

Capital adequacy analysis gives an idea about maintenance of adequate capital. Sometimes a bank with relatively high level of capital may fail, if the other components of its balance sheet have not been properly managed. Thus, regulators must evaluate other characteristics of banks in addition to capital adequacy. For preparing this research I faced some limitations such as difficulties with primary data collection. The analysis is only for the last five years. It may provide better result, if the analysis is done for more years.

7. LITERATURE REVIEW

In general, financial performance of NBFIs and banks are measured by analyzing financial ratios, benchmarking and measuring performance against financial budget and/or mix of these methodologies (Avkiran, 1995). CAMELS rating system is commonly used to measure the financial performance of banking sector (Nimalathasan, 2008). The performance of Malaysian Islamic bank carried out by using financial ratios (Samad and Hassan). The South African commercial banks performance measured by financial ratios analysis (Kumbiari and Webb, 2010). Performance of selected Indian commercial banks has done by view growth in asset, profit, revenue, investment and deposit (Jaladhar, Anchula and Achari, 2011). EVA (Economic Value Added) is a modern financial measurement tool which determines whether a business is earning more or less than its original cost of capital (Gabriela et al, 2009). While analyzing performance of AXIS bank in terms of capital adequacy ratios and correlation analysis is used (Shrivastava et al, 2011). The analysis includes CAMELS rating and multivariate regression analysis for comparing financial performance commercial banks (Jha and Hui, 2012). The financial performance of commercial bank measured in terms of capital adequacy and methodology used as ordinary least square method (Onaolopo and Olufemi 2012). The importance of capital adequacy lies on the fact that it assists to spread the cost of prudent business conduct and deters the criminally minded. Umoh (1991), explains that, a bank requires capital adequacy for the same reasons other businesses many require capital. However, since banks deal with other people's moneys are safe. Nwankwo (1991) emphasized that the key element of capital is the only elements common to all countries' banking system. It is wholly visible in the published account as it is the basis market judgments of capital which are made, it has crucial understanding on profit margins and banks ability to compete. Oluoyemi (1996), stated that, capital plays a significant role in the banking sector of an economy. The need for capital adequacy for banks pressing problems not only in Nigeria but also to a very large extent in many other countries globally. Ayodele (1988), for instance suggests that over the period 1952-1975 in the banking industry, a relatively large number of banks that failed was due to under capitalization. An emphasis by Bank of International Settlement (B.I.S) that, capital is one of number factors to be weighted in assessing the strength and weakness of the equity values of a banks future net earning. This implies that capital is the total assets less total liabilities. It also stressed that capital is required in sufficient quality to enable banks perform its functions effectively and to maintain public confidence. Ekundayo (1999) believed that, adequacy of capital will help to enhance and stricture the financial resources of an organization with a view to enlarging the size of long-term funds available to the company. The basis for this, was to fill a hole, provided by working capital and funding capital projects. He explained that a hole could exist through persistent losses, deterioration on quality of assets, under-provisioning and fraud. The fresh injection of funds could them serve to provide working capital, computerization programs etc. He noted that the larger the capital base of any company the easier for it to absorb any effects of sudden mishaps, the greater the size of the business the bank can handle, the lesser the risk the bank is likely to have. Thus capital adequacy has an effect on bank's performance.

Banking literature of bank capital and capital adequacy are expanding with bank failures. Sinkey (1975) identified several characteristics of problem banks and compared with a control group banks by using the data from the year 1969 to year 1971. The characteristics were expressed in financial ratios. ANOVA was performed in four measures of capital adequacy and significant differences were found. Apilado and Gies (1972) examined and performed hypothesis testing for capital adequacy using several measures of capital adequacy from the period of 1935 to 1969. Their tests were found significantly different. Cotter also (1966) compared mean test of the failed banks with the successful banks during 1921-1933. Test results showed that there is significant variation among individual banks within groups. Estrella, Park, and Persistiani (2000) examined bank failure during 1988-1992 within the current regulatory framework of Basel Accord. Their examination of relationship between capital ratios and bank failure suggests that in addition to risk-weighted ratio, leverage ratio and gross revenue ratio are significant factors in predicting bank failure.

8. MEASUREMENT OF BANK'S CAPITAL ADEQUACY

Every bank needs sufficient capital for running the business in appropriate way. The capital is essential for operating the business efficiently and mostly focus on absorbing its all obligated risks. Capital adequacy focuses on the total position of bank's capital and protects its depositors from the potential shocks of losses that the bank might incur. Every financial

institution need to meet minimum capital requirements because it plays a significant role to support their daily operations and to ensure the long-term capability of the organization. Capital absorbs financial and operating losses which can be treated as cushion against the risk of failure until management can find out the bank's problems and restore the profitability of the bank. The capital requirement is a bank regulation that sets a framework on the way banks should handle their capital. International committee of Basel on banking supervision influences each country's capital requirements for banks. In 1988, the Committee decided to introduce a capital measurement system which is commonly referred to as the Basel Accord. This framework is now being replaced by Basel-II which is a new and significantly more complex capital adequacy framework. While Basel-II significantly alters the calculation of the risk weights, it leaves alone the calculation of the capital.

To measure the whole things of capital adequacy, this research is focused on AB Bank Limited for making some sort of reasonable analysis and comments as per needed.

8.1 Central bank's role in capital adequacy measurement:

Bangladesh Bank has supreme authority to take any policy decision, changing rules & regulations etc. for commercial banks in the country as the Central Bank of Bangladesh. Bangladesh Bank is taking necessary requirements whenever their need to change any guidelines, procedures, process, regulations and supervision authority for all the commercial banks. To make the depositors' money safe and wider the banking operations central bank influences the commercial banks activities through changing the standard guidelines based upon Basel – II framework. Based on the collected information of the capital adequacy, here find that Central Bank changed the minimum capital requirement at every interval whenever it needed. BB sets all the related weighted assets average for the easy calculation of the RWA for the banks. Whenever central bank surveys that there has needed sufficient capital to operate the banking business and also for protecting the money of all the related parties from getting rid of any uncertainty, it's needed to reserve adequate capital. The recent circular commends on maintaining the 'Minimum Regulatory Capital' as a prime precondition. It sets individual bank's responsibility to develop an internal capital adequacy assessment process and to set capital targets that are commensurate with the bank's risk profile and control environment. At now CAR requirement is 10% for all commercial banks which is needed to be maintained strictly.

8.2 Capital Adequacy of Banks under Basel - I Framework:

In recent days the most important issue for the bank is raising and maintaining adequate capital according to the framework of capital adequacy as prescribed under Basel - II accord. In the mid 80s, the Central Bank governors of some developed countries established the Basel Committee on Banking Supervision following the collapse of a small German bank in 1974 which was active in the international banking.

The committee observed that a level playing field in the matters of banking capital was necessary. An agreement was finalized among the central bank governors and members of the Basel Committee in 1987. In the following year i.e. in July 1988, the Basel Committee published first landmark accord in the name of 'International Convergence of Capital Measurement and Capital Standards', which was shortly known as Basel-I Accord. It became fully enforceable from January 1, 1993.

In Bangladesh, Basel-I accord was adopted in 1996 through the guidance and BRPD circular of the Bangladesh Bank. After practicing a few years of Basel I, the Basel Committee published the first draft of Basel-II very comprehensively and amended form in June, 1999. The second consultative paper of Basel-II was published in January, 2001 and the final Accord was published in June, 2004. The banking sector started parallel run of Basel-II on January 01, 2009 and a full-fledged run of Basel-II is going on from January 01, 2010.

8.3 Capital Adequacy of Banks under Basel - II Framework:

Basel-II accord is a concept of three-tier capital. This concept is used for complying with the requirements which are designed to encourage the banks to strengthen their positions of capital considering the risk, market discipline and review process of supervision. In Basel-II accord, total capital of a bank is segregated as Tier - I, Tier - II and Tier - III capital.

Tier - I capital, is also considered as core capital, mainly comprises of the highest quality capital elements that include the amount of funds contributed by owners of the bank in exchange of shares or stock as paid-up capital, share premium account which represents the excess value of a share above its par value and it is non-repayable in nature, statutory reserve which should be at least 20% of profit before tax until the reserve and share premium account become equal to bank's paid-up capital, the balance of general reserve, retained earnings after making payment of appropriation items including dividend, the bank's minority interest in subsidiaries, non-cumulative irredeemable bank Limited preference shares where company has to pay a fixed rate of dividend and account of dividend equalization which is maintained to ensure payment of dividend every year at a certain rate.

Tier - II capital is also called supplementary capital which covers items that fall short of some features of the core capital in terms of readiness and supporting quality of the capital. This capital includes provision of unclassified advances and loans, special mentioned account and off-balance exposures, 50% of asset revaluation reserves, all other preference shares except those listed under core capital, subordinated debt that do not have liquidity date and is limited to use up to 30% of Tier - I capital, exchange equalization account that arises from exchange gain for devaluation of local currency with foreign currencies and up to 50% of revaluation reserve of securities that is hold for transaction motive.

Tier - III capital, is another sort of supplementary capital which is essential for meeting requirements of partial capital of market risk of a bank which may arise from trading book. This type of capital consists of subordinated debt which means unsecured debt mainly extended to the borrowers by its sponsors. Subordinated debt-holders have prior claim over common and preference shareholders on the bank's earnings and assets.

The sum of the above mentioned three tiers of capital shall be at least 10% of risk weighted assets of on-balance sheet and off-balance sheet items of a bank. This amount of capital is called the adequate capital of a bank.

8.4 Importance of Capital Adequacy Requirements:

- Adequate capital provides funds for the organization's growth and development of new services and facilities as well as serving as a regulator.
- Adequate capital increases public confidence in a bank and reassures its creditors / depositors of its financial strength.
- Capital provides the funds needed to get the bank chartered, organized and operating before deposits come flowing in.
- It helps absorbing major financial risks like credit risk, market risk, foreign exchange risk, interest rate risk and risk involved in off-balance sheet operations.
- It protects the deposit insurance system from serious losses.

9. ANALYSIS

9.1 Calculation of Total Risk Weighted Assets (RWA)

9.1.1 Risk Weighted Assets (RWA) for AB Bank Limited:

BASEL - II is the guideline to calculate RWA for the bank which is supervised by the Bangladesh Bank. In 2012, AB Bank Limited had Tk. 1, 09,858.37 million total assets including off balance sheet items and the amount of total Risk Weighted Assets (RWA) is Tk. 70,448.60 million. On this amount of RWA the bank reserves 10% of required capital to confront the related risks. Basically the whole scenario of RWA is based on the year 2012. In that year the bank maintained Tk. 1, 09,858.37 million total assets including off balance sheet items. As the bank calculated the total riskiness of its assets through correspondent risk weights, the calculation exposed Tk. 70,448.60 million as RWA. According to the guidelines there have 4 major categories of risk weights of the respective assets. For calculating the minimum required capital on RWA according to the Bangladesh Bank guidelines, AB Bank Limited held Tk. 7044.8 million in the year 2012. Here in this section we only discuss about the RWA, more discussion on the required capital will be given in later part.

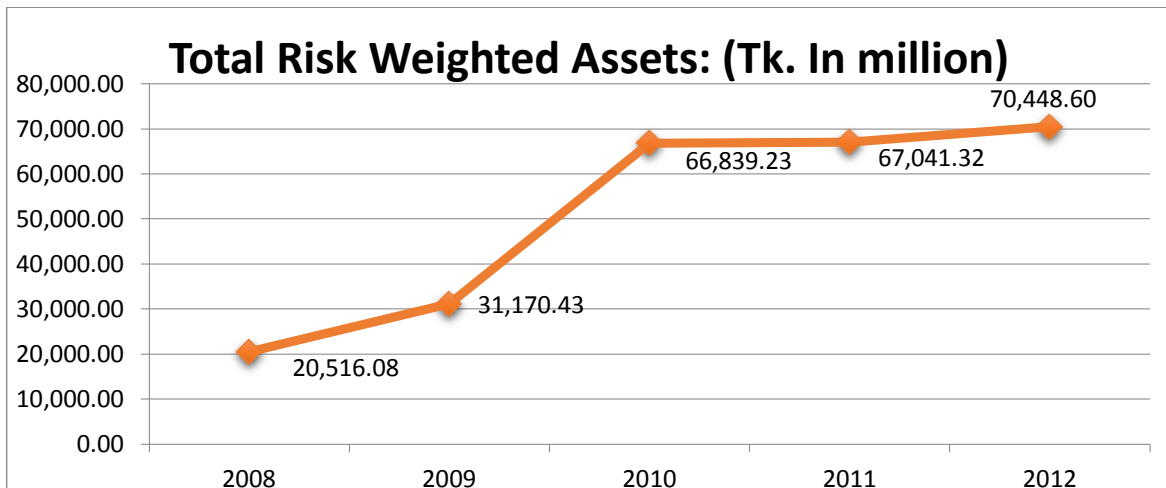


Figure 1: Risk Weighted Assets of 5 years

This graph shows the amount of the Risk Weighted Assets of the 5 years from year 2008 to year 2012. In the year 2008 RWA was Tk. 20516.43 million. We see there is an increasing trend of RWA maintained by the bank. In the year 2012 the RWA is Tk. 70448.60 million which is more than double from the year of 2009. This indicates that this bank is in the proper process of maintaining RWA for absorbing or mitigating the uncertain risks may arise at any time. For the variations in the assets classification by the bank it can easily observe that all the assets are not having the similar risks. Different types of assets have the different category risks. There has some classification about the maintenance of risk weighted assets. This increasing trend of the AB Bank Limited shows that they are very much cautious about the total earning assets as generating the bank's earnings. Increasing trend of the bank's RWA prefers the highest regulated cautions of reducing all the related risks may arise from the bank's uncontrolled operations. This analysis can be formulized by calculating the changing position of RWA from year to year. A graph of year to year percentage change of RWA is given below-

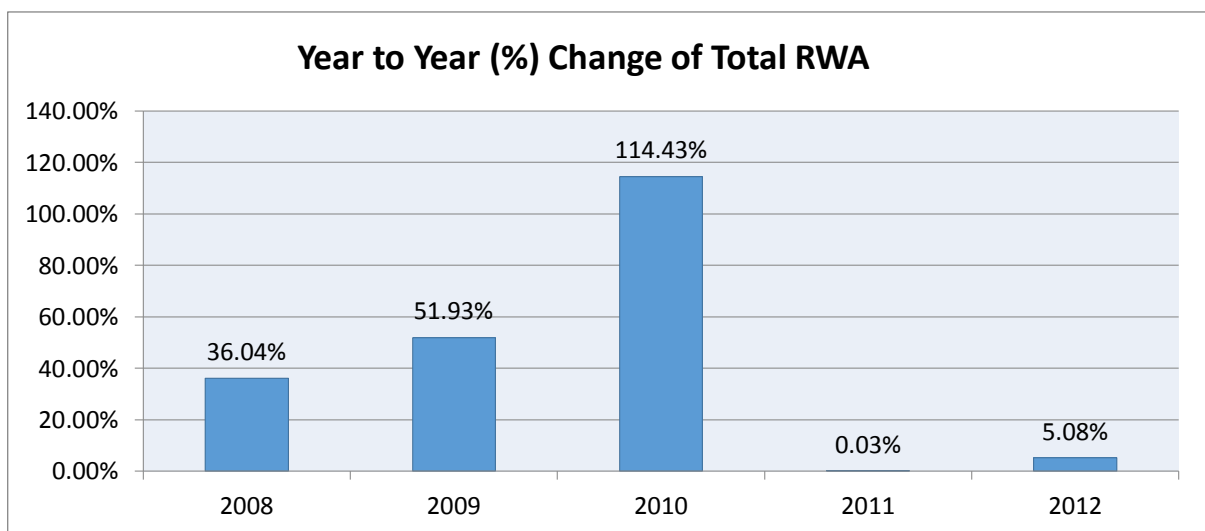


Figure: 2

The bars of the chart show the increasing trends of percentage change of RWA. This graph clearly shows that the year 2010 has the highest percentage change of RWA from the year 2008 to 2012. In the year 2012 the bank has kept Tk. 70,448.60 million RWA and this year changing position is 5.08%. This indicates that the bank is becoming more aggressive in case of risky assets. So the bank needs to keep more reserve as required capital which will be discussed later.

9.1.2 Index Analysis of Risk Weighted Assets (RWA):

Here index analysis has been done to get more idea about the change in the Risk Weighted Assets (RWA). For calculation the year 2007 has been taken as the base year.

Year	2007	2008	2009	2010	2011	2012
RWA (Tk. in million)	Tk. 15,081.07	Tk. 20,516.43	Tk. 31,170.05	Tk. 66,839.02	Tk. 67,041.40	Tk. 70,448.60
% change from Base Year 2005	100%	136.04%	206.70%	443.33%	444.50%	467.10%

TAB bank Limitede: Index Analysis of RWA

From the above Index Analysis it can easily understand that there is a big change of risky assets from the base year for this bank. Calculation demonstrates 467.10% change in year 2012 from the base year 2007. This is a signal to the bank that the bank should have to make efficient use of total risky portfolio assets to overcome the uncertain losses relate to its assets. This bank is more about concern about asset utilization to different suitable projects.

9.2 Calculation of Total Capital of AB Bank Limited

9.2.1 Total Capital for AB Bank Limited:

In the year 2012 AB Bank Limited held Tk. 8,605.55 million as total capital. It shows that every year the bank has increased a huge amount in its capital base. The capital base for the last five years (2008 to 2012) is shown in graph.

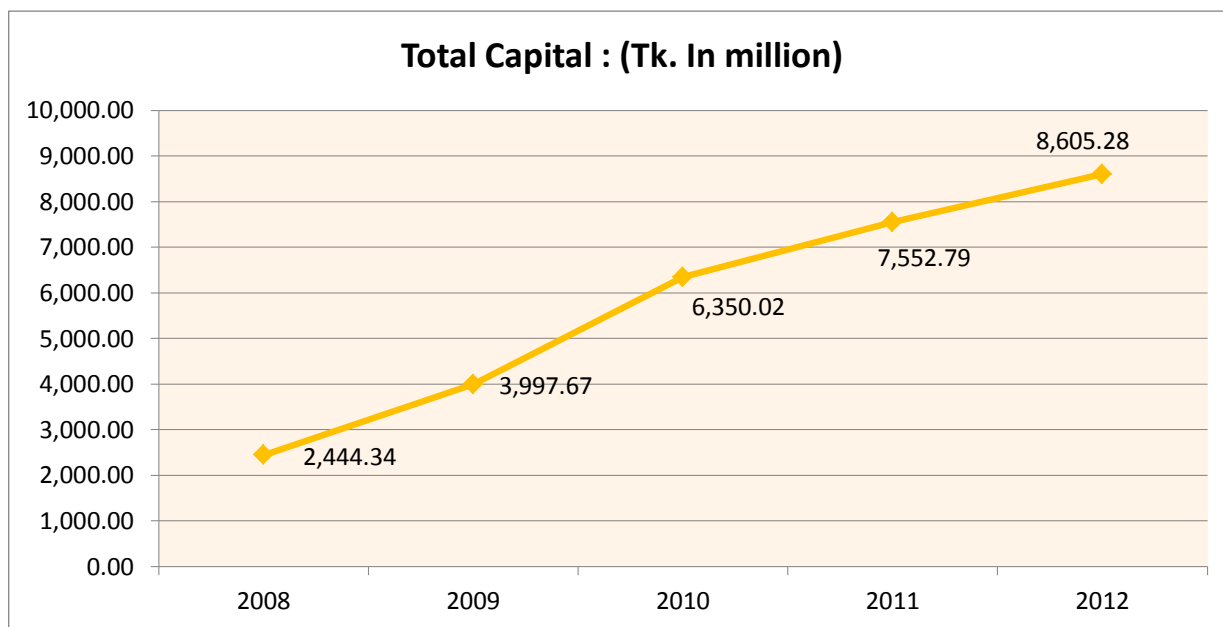


Figure: 3

The actual capital held by AB Bank Limited is the summation of core capital and supplementary capital. At the end of the year 2012, the total or actual capital of AB Bank Limited was Tk. 8,605.55 million. The amount is much greater than the year 2008. In the last year this bank has huge capital accumulation Tk. 8,605.55 million which is far beyond from the last four years. The increasing trend indicates that this bank has much more control in the capital utilization in different prospects. Paid up capital, statutory reserve, retained earning etc. are the main indicator of capital increasing. In the year 2012 the bank has 13.93% increases in the actual capital holding compared to the previous year 2011.

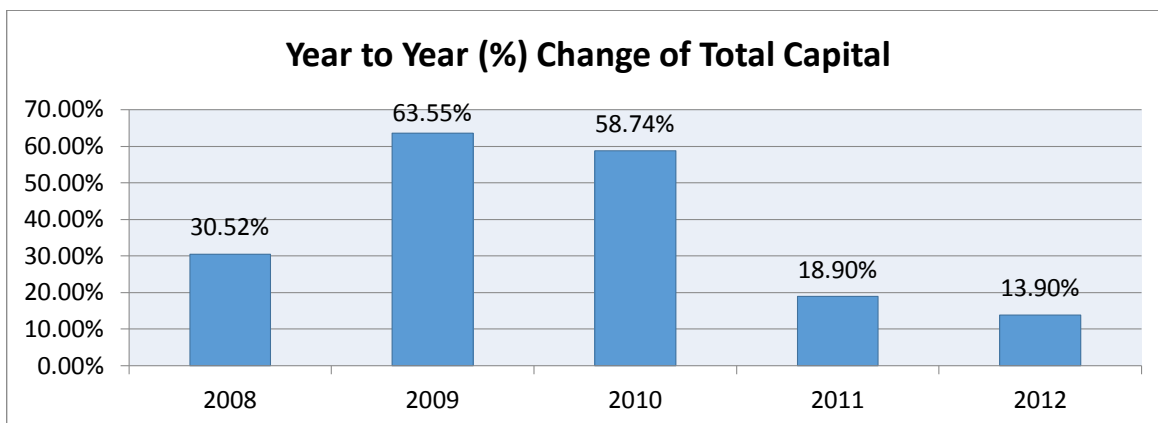


Figure: 4 Year to Year % change of Total Capital

The graph shows that the year 2009 has the highest percentage change in total capital which is 63.55%. Then it has decreased to 13.90% in 2012. After that the percentage change in total capital has decreased last two years. This is happening because this bank is increasing its paid up capital, statutory capital, other reserves, provision and so on. The next highest percentage change is in the year 2010 which is 58.74%. At the time of calculation of the total capital, it has been found that the bank maintains different types of the capital base at different amount during these five years.

9.2.2 Index Analysis of Total Capital:

This bank's capital changing information can be discussed through index analysis, changing from base year 2007.

Year	2007	2008	2009	2010	2011	2012
Total Capital (in million)	Tk. 1872.72	Tk. 2444.34	Tk. 3997.66	Tk. 6346.02	Tk. 7552.79	Tk. 8605.28
% change from Base Year 2007	100%	130.50%	213.50%	338.90%	403.30%	459.45%

AB Bank Limited: Index Analysis of Total Capital

This table illustrates that in the year 2012 the bank capital is much higher than the other preceding years which are 459.45% change from the base year 2007. This indicates that this bank is in increasing trend in core capital and supplementary capital. The increasing trend also shows that this bank's capital flows are flourishing year to year. This increasing trend is possible whenever there is higher trend in paid up capital, operating capital and also reserve provision of bank. Here also find out that Central Bank guidelines regulate that every banks need to keep 10% minimum capital. This requirement is based on the 10% of Total Risk Weighted Assets. So as the Risk Weighted Assets of the bank are increasing year to year, the total capital is also increasing to keep pace with the Risk Weighted Assets.

9.2.3 Core Capital Ratio:

Core Capital ratio derived from dividing the total core capital by the total risk weighted assets. Bangladesh Bank has set the standard core capital ratio 5% which should be followed by every bank.

Core Capital in 2012:

Paid – up Capital	4,487.53 million
Statutory Reserve	1,404.45 million
Right Issue Subscription Money	734.40 million
Retained Profit	629.61 million
Total Core Capital	7,256.39 million

AB Bank Limited’s total core capital is consisting of the summation of Paid - up Capital, Statutory Reserve, Right Issue Subscription Money and Retained Profit. This bank has Tk. 7,256.39 million core capital in 2012 and also has Tk70, 448.60 million risk weighted assets. At the year 2012, the bank’s major portion of core capital came from paid up capital requirements which is $(\text{Tk. } 4,487.53 / \text{Tk. } 7,256.39) = 61.84\%$. Statutory reserve is $(\text{Tk. } 1,404.45 / \text{Tk. } 7,256.39) = 19.35\%$, Right Issue Subscription Money is $(\text{Tk. } 734.40 / 7,256.39) = 10.13\%$ and $(\text{Tk. } 629.61 / \text{Tk. } 7,256.39) = 8.61\%$ as retained profit of core capital. So, this bank’s core capital base mostly depends on the amount of paid up capital.

The core capital ratio of this bank in 2012 is:

Core Capital Ratio = $(\text{Tk. } 7,256.39 \text{ million} / \text{Tk. } 70,448.60 \text{ million}) = 10.30\%$

The core capital ratio 10.30% indicates that the bank has 10.30 Taka as core capital against its 100 Taka Risk Weighted Assets. The customary prerequisite for core capital ratio is 5% which is set up by the Central Bank. So in this point this bank has sufficient core capital to mitigate its risks which give a cushion to the depositors, outside creditors and investors. The core capital ratio 10.30% also indicates that the bank is parallel in the direction of managing its risky assets and it has enough core capital to absorb its potential risks.

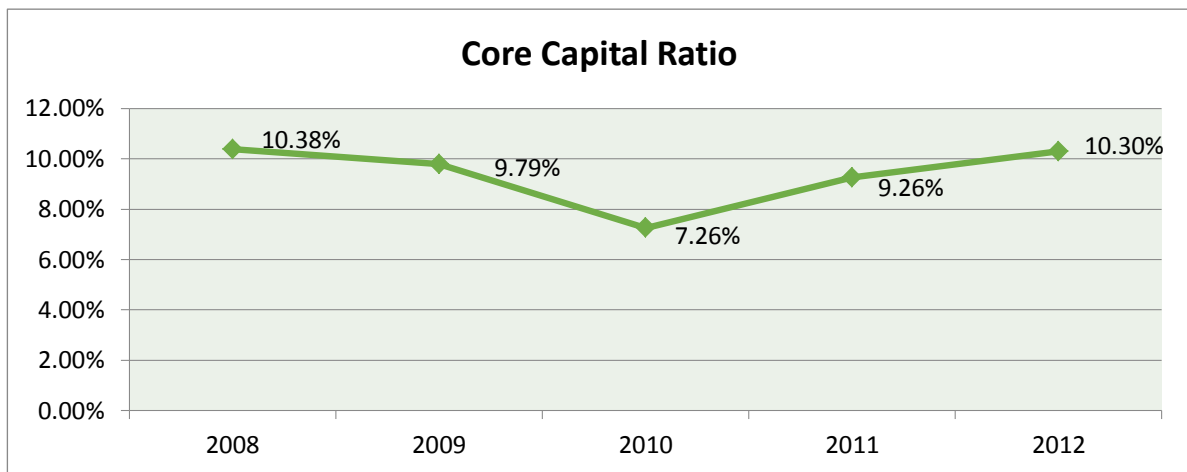


Figure: 5 Core Capital Ratio

Moreover core capital is primary concern for a bank because the shortage of capital may make the bank insolvent. This may give negative aspects to the potential depositors and investors. The regulatory requirement for core capital ratio is 5%. Here the graph shows that in every year the bank has maintained a good core capital ratio which is more than the regulatory requirement. But one thing to be observed the ratio has decreased from year to year. The reason is that the bank’s Risk Weighted Assets has increased more than core capital in every year. So the bank should be more careful about this core capital ratio.

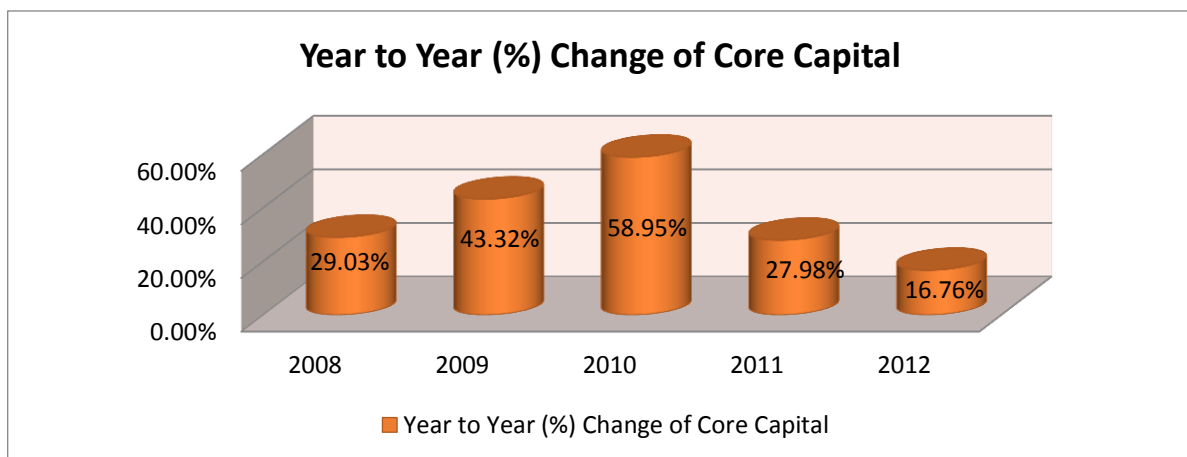


Figure: 6 Year to Year % change of Core Capital

This graph illustrates that in the year 2010, the bank has the highest percentage change in core capital. In 2012 the change was the lowest. After that year the change in core capital has decreased gradually. In 2010 the change in core capital is 58.95%. This is a good indication of the bank's efficiency in maintaining core capital. But last two years it represents low percentage changes.

9.2.3.1 Index Analysis of Core Capital:

To find out the percentage change from the base year amount of core capital, here also includes the index percentage changing analysis.

Year	2007	2008	2009	2010	2011	2012
Core Capital	Tk. 1651.47	Tk. 2131.02	Tk. 3054.14	Tk. 4854.55	Tk. 6214.34	Tk. 7256.39
% change to Base Year (2007)	100%	129.03%	184.97%	294.02%	376.39%	439.49%

AB Bank Limited: Index Analysis of Core Capital

This index analysis shows that in year 2012 there is 439.49% change in Core Capital compared to the Base Year 2007. This is four times greater than the base year. So the core capital of AB Bank Limited is increasing year to year significantly. This also shows the higher growth in paid up capital, general & statutory reserve and as well retained earnings of AB Bank Limited.

9.2.4 Supplementary Capital Ratio

Supplementary Capital ratio derived from dividing the total core capital by the total risk weighted assets. Bangladesh Bank has set the standard Supplementary capital ratio as 5% which should be followed by every bank.

Supplementary Capital in 2012:

General provision maintained against unclassified loans	814.82 million
General Provision for Off-balance sheet items	106.31 million
Revaluation Reserve on Govt. Securities	101.59 million
Assets Revaluation Reserve	321.75million
Assets Equalization	0.00 million
Total Supplementary Capital	1,348.89million

AB Bank limited has Tk. 1348.89 million supplementary capitals and Tk. 70,448.60 million of total risk weighted assets. So, the supplementary capital ratio is 1.91%.

This capital ratio 1.91% indicates that this bank kept Tk. 1.91 as supplementary capital against its Tk. 100 risk weighted assets. This ratio is much lower than the standard level 5% which has set up by the Central Bank. This bank's supplementary capital includes general provision on unclassified loans, general provision for off balance sheet exposure; asset revaluation etc. To formulate an assessment of the Supplementary Capital Ratio with other previous years there may find out some more comments on this.

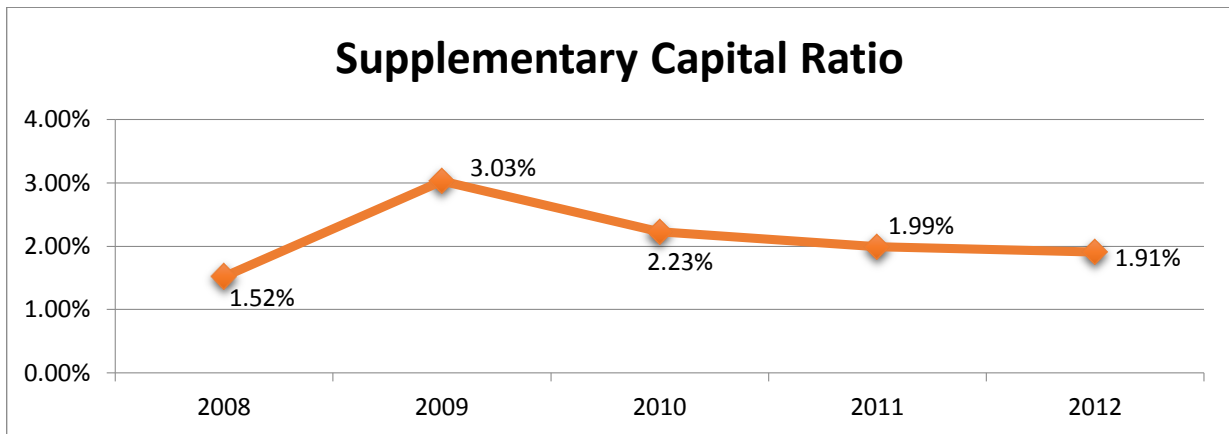


Figure: 7 Supplementary Capital Ratio

This graph shows that there is an increasing trend in supplementary ratio from the year 2008 to year 2009. But from 2010 to year 2012 it has gradually decreased. The standard requirement of supplementary capital ratio is 5% for all the banks operating in the country. So the ratio is very much lower than the standard requirement of supplementary capital ratio. The reason is that the bank was very much concern to maintain a good core capital than the supplementary capital.

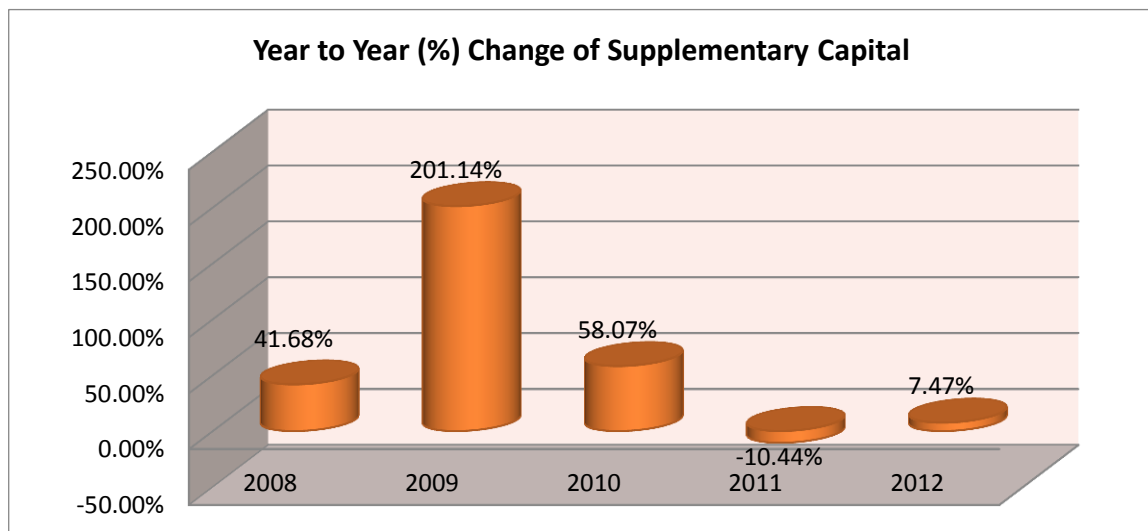


Figure: 8 Year to Year % change of Supplementary Capital

The graph shows that the year 2009 has the highest change in supplementary capita. In 2010, the change in supplementary capital is 58.07% which is generally average in supplementary capital. The graph does not provide a clear cut view of increasing or decreasing trend.

9.2.4.1 Index Analysis of Supplementary Capital:

Year	2007	2008	2009	2010	2011	2012
Supplementary Capital	Tk. 221.14	Tk. 313.32	Tk. 943.53	Tk. 1491.47	Tk. 1338.45	Tk. 1348.89
% change to Base Year (2007)	100%	141.62%	426.69%	674.66%	605.42%	609.95%

AB Bank Limited: Index Analysis of Supplementary Capital

This above index analysis shows that in the year 2010 there was more supplementary capital change compared to the base year 2007. It is more than six times greater than the base period. This indicates that the banks supplementary capital has

increased significantly during the research period. But after that the supplementary capital ratio is lower than the standard supplementary capital requirement. So the bank should think about the increase in supplementary capital.

9.3 Capital Adequacy Ratio (CAR) of AB Bank Limited

The Bank adopted BIS risk adjusted capital standards to measure the capital adequacy in line with the criteria set by Bangladesh Bank. According to the instruction of Bangladesh Bank, every commercial bank is required to maintain at minimum 10% of its Risk-weighted Assets as capital. Adequate capital is essential for the survival of a bank. In the worst situation that will work as a buffer against heavy shock. It covers the minimum regulatory capital for credit, operation and market risks which risks are not captured by lower level of regulatory capital. According to the guidelines of regulatory capital requirements, the capital can be divided into two sections as core capital needs 5% minimum reserve requirement and also supplementary capital needs 5% minimum reserve requirement. Based on the calculation, we see that the bank’s CAR ratio is 9.49% in the year 2009 which is lower than the regulatory requirement 10%. So there is deficit in capital requirement for AB Bank Limited for the year 2010. This is a very bad signal for the bank. It decreases the trustworthiness among the shareholders and depositors to the bank. But in the other four years the bank maintained CAR more than regulatory requirement. Here a table for easy understanding of the whole things done by this bank in the year 2012 is given below.

Capital Adequacy Scenario in 2012		
Capital Requirement	Minimum Capital Required	Actual Capital Held by AB Bank Limited (2012)
Core Capital	5.00%	10.30%
Supplementary Capital	5.00%	1.91%
Total	10.00%	12.21%
Total Risk Weighted Assets (RWA)		Tk. 70,448.60 million
Required Capital (10% of RWA)		Tk. 7,044.86 million
Actually Held by AB BANK LIMITED(12.21% of RWA)		Tk. 8,601.77 million
Total Capital Surplus (Actually held by Bank - Required Capital)		Tk. 1,556.91 million

From the new circulation published from the Bangladesh Bank under the BASEL-II framework, the central bank gives spotlight on some sort of risks like market risk, credit risk and operational risk. To absorb all these risks Central Bank make regulation for every schedule bank should maintain minimum capital for making the banking business sound and safeness. Banks need to cover losses on loan projects, investment portfolio, fixed assets utilization etc. that’s way banks need to keep required capital on the basis of total risk weighted assets. The scenario of 2012 describes that the bank actually held Tk. 8,601.77 million capital, which is $(\text{Tk. } 8,601.77 - 7,044.86) = \text{Tk. } 1,556.91$ million greater than regulatory requirement. The surplus capital is calculated through deducting the required capital from actual capital held the by the bank.

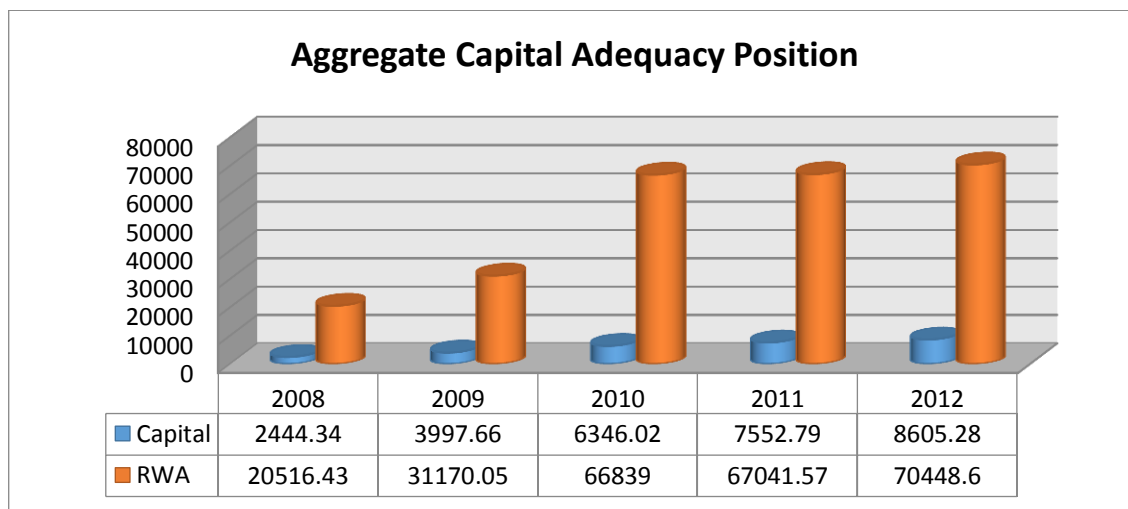


Figure:9 Aggregate Capital Adequacy Position

Mainly this graph shows the total comparison between the AB Bank’s Total Capital and Total Risk Weighted Assets (RWA). For better understanding the 5 years CAR is also given below:

Table 8: Aggregate Capital Adequacy Ratio of AB Bank Limited

Year	2008	2009	2010	2011	2012
Capital Adequacy Raito (%)	11.91%	12.83%	9.49%	11.27%	12.21%

AB Bank’s Capital Adequacy Ratio is well from year 2008 to year 2012. But in 2010 the capital is not adequate to support the risk as the CAR is lower than 10%. A graph for the comparison between the Required CAR and Actual CAR is given below to evaluate the Capital Adequacy position of AB Bank Limited.

10. MULTIPLE REGRESSION ANALYSIS

Multiple regression analysis is the research of how a dependent variable is related to two or more independent variable.

The variable being predicted or explained by the equation is called the dependent variable. In the regression analysis Total Capital has taken as Dependent variable (Y).

The variable being used to predict or explain the dependent variable is called the independent variable. In this analysis Total Risk Weighted Assets (X₁) and Classified Loans (X₂) of the bank have taken as two independent variable respectively.

Regression Line:

We know the regression equation is,

$$\hat{Y} = a + b_1 X_1 + b_2 X_2 + \epsilon_i$$

Here,

\hat{Y} = Dependent variable (Total Capital)

X₁ = Independent variable (Risk Weighted Assets)

X_2 = Independent variable (Classified Loans)

$$a = 493.878$$

$$b_1 = .086$$

$$b_2 = 1.275$$

$$\epsilon_i = 533.91$$

So, the Regression Line for the AB Bank Limited can be derived by,

$$\hat{Y} = 493.878 + 0.086 X_1 + 1.275 X_2 + 533.91$$

If Risk Weighted Assets and Classified Loans is zero then $a = \hat{Y}$ i.e. $\hat{Y} = 493.878$ which is Y intercept. It shows that Total Capital is positive. The bank calculated the Total Capital with the consideration of the relation of risks with the assets. There may raise other sort of risks for the bank which may cause the negative capital.

Now, if the value of b_1 or the slope X_1 is 0.086. It means if the amount of risk weighted assets increase by Tk. 1 million then the total capital of the AB Bank Limited will increase for Tk. 0.086 million assuming all other variAB bank Limitedes held constant.

Again, the value of b_2 or the slope of X_2 is 1.275. It means if the classified loans increases for Tk. 1 million then the total capital of the bank will increase for Tk.1.275 million assuming all other things remaining the same.

Standard error of estimate denotes the error of overall estimation of the multiple corresponds. Here the error is 533.91 indicates the variability between the expected and calculated value in the overall regression model.

The coefficient of correlation is denoted by the symbol (R). It describes the degree and direction of relationship between two variAB bank Limitedes dependent and independent variAB bank Limitedes. Through the SPSS Program, $R = 0.989$, it indicates that there is a positive correlation between the variable. Thus, there is a very high degree of positive correlation between the Capital and the two independent variAB bank Limitedes Total Risk Weighted Assets & Classified Loans. If the independent variable X_1 and X_2 increase then this will result the dependent variable Y to increase accordingly.

The multiple coefficient of determination indicates the measurement of goodness of fit for the estimated regression equation. Multiple coefficient of determination can be denoted by R^2 . R^2 can be determined through the following way:

Here for the analysis $SSR = 25180000$ and $SST = 25750000$

So here,

$$R^2 = 25180000 / 25750000$$

$$= 0.977$$

This proportion 0.977 or 97.70% indicates that the independent variable are 97.70% fit to the goodness for the estimated regression equation. Here also one point to be kept in mind that R^2 always increase if there will add any other independent variable to the equation model. Here the implication is that the estimated multiple regression equation provides a better fit for observed data.

Another method, F- test is used to determine whether a significant relationship prevails between the dependent variable and independent variable. It is considered as the test for overall significance. Here the hypothesis for the F-test is deemed as there is no significance difference between dependent and independent variable. The alternative hypothesis is vice-versa.

Therefore the hypothesis is:

$$H_0: \beta_1 = \beta_2 = 0$$

H_1 : One of the parameters is not equal to zero

After analysis the data I have found that, the value of F is 44.163. Now on the basis of the significance level 2.5% and

degrees of freedom the F – distribution tabular value shows that 39.00.

Here,

$$\alpha = .025$$

$$v_1 = m = 2$$

$$v_2 = n = 2$$

This calculation shows that the calculated value 44.163 is greater than the tabular value 39.00. So, it can easily say that the null hypothesis is rejected. And also the P value = .022 (in the last column of the ANOVA tAB bank Limitede) denotes that the null hypothesis be rejected because P value is less than the significance level $\alpha = 0.025$.

So, the hypothesis test that according to the hypothesis rules null hypothesis is rejected for the F – test distribution. It means that there have sufficient statistical evidence to conclude that one or more of the parameter is not equal to zero and that the overall relationship between Y and the set of independent variAB bank Limitedes is significant. So, there is significant relationship the depended variAB bank Limitede (Total Capital) and the two independent variAB bank Limitedes (Total Risk Weighted Assets & Classified Loans).

11. FINDINGS

Some key points have been found at the time of analyzing the research on measuring capital adequacy for AB Bank Limited. These matters are pointed out in below:

- AB Bank limited’s capital adequacy ratio is well enough during the research period.
- AB Bank Limited always maintained more capital than the minimum capital required by the Central Bank.
- In the year 2012 this bank has the total capital surplus is Tk. 1,556.91 million.
- This bank has the increasing trend in the rise of total capital from the base year 2007 to the year 2012 extract from the index analysis of the total capital.
- But the capital adequacy ratio of AB Bank Limited is different year to year.
- The core capital of the bank is strong enough to support the business against any risk.
- The core capital ratio is always higher than the standard core capital ratio 5%. In 2012 the core capital ratio is 10.30%
- Supplementary capital is insufficient.
- The supplementary capital ratio is lower than the standard supplementary capital ratio 5%. In 2012 the ratio is 1.91%.
- The Risk-Weighted Assets (RWA) of AB Bank Limited is increasing at a higher rate.
- This bank kept higher amount of risk weighted assets in the year 2012 which is Tk. 70448.60 million.
- The increase in capital is lower than the increase in RWA during the year 2008 to 2012.
- This bank has not yet used the additional supplementary capital
- The bank has the opportunity to earn more profit by lowering the cost of its fund.

12. CONCLUSION

There is no business without risk. Banking business is more risky as it directly deals with money and the banks do business from the depositor’s money. The depositors keep their money in the banks only when they fell secured. The capital of the bank is one of the securities to the depositors. So the adequate capital is very much important for a bank and it helps a lot to compete in the market. From the analysis it is found that the AB Bank Limited is in good position in case of capital. In 2012, the bank has a capital surplus of Tk. 1,556.91 million. The capital adequacy ratio is higher than the required capital adequacy ratio. The core capital is the lion’s share in the capital fund of AB Bank Limited. This is a good sign for the bank’s success. But core capital ratio of AB Bank Limited is decreasing day by day except 2012. The bank should try to improve the condition. Supplementary capital is insignificant in the capital fund of AB Bank Limited. The bank should try to develop supplementary capital to increase the depositor’s safety. Finally, though the bank’s capital is adequate enough, its capital adequacy ratio is decreasing year to year. So the bank should be more concern regarding this matter and try to improve the condition.

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