

Internship Report on

**“Basel II Implementation in BRAC Bank Limited: Risk Based
Capital Adequacy Requirement of Bangladesh Bank”**



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Letter of Transmittal

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Subject: Submission of Internship Report

Dear Sir

I gladly present to you my Internship Report titled "*Basel II Implementation in BRAC Bank Limited: Risk Based Capital Adequacy Requirement of Bangladesh Bank*". I finished my internship program in the Finance department of BRAC Bank Limited Head Office, 1 Gulshan Avenue, Gulshan-1, Dhaka, under your prudent supervision.

I believe the knowledge and experience I gathered during the internship period will be extremely helpful in my future professional life. I will be grateful to you if you accept the report.

Your support in this regard will be highly appreciated.

Thanking you.



Ayaz Mahmud
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Acknowledgement

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List of Acronyms

Abbreviation	Full Form
BB	Bangladesh Bank
BBL	BRAC Bank Limited
BCBS	Basel Committee on Banking Supervision
BIA	Basic Indicator Approach
BIS	Bank for International Settlements
CAR	Capital Adequacy Ratio
CRM	Credit Risk Mitigation
ECAI	External Credit Assessment Institution
FRA	Forward Rate Agreement
ICAAP	Internal Capital Adequacy Assessment Process
RBCA	Risk Based Capital Adequacy
RWA	Risk Weighted Asset
SME	Small & Medium Enterprise
SREP	Supervisory Review Evaluation Process
SRP	Supervisory Review Process
TSA	The Standardized Approach

Executive Summary

This internship report is based on the twelve weeks long internship program that I have successfully completed in BRAC Bank Limited (BBL) under Finance Division from 24th July, 2011 to 20th October, 2011. It is a requirement for the BBA program in BRAC University. I worked in the Finance Division of BBL.

I mainly worked in Regulatory Reporting; and Business Planning and Analysis wing of Finance division. My faculty advisor and the on-site supervisor helped me choose the topic- "*Basel II Implementation in BRAC Bank Limited: Risk Based Capital Adequacy Requirement of Bangladesh Bank*". It is a complex yet very important international requirement for banks. The value of the knowledge attracted me the most.

Bangladesh Bank (BB) is the governing body of all the commercial banks in this country. To be in line with the international standard for regulation of banking industry (Basel Accord), BB has introduced Risk Based Capital Adequacy guideline relating to Basel II. All banks have to follow this guideline and report to BB effective from 1st January, 2010. The guidelines are structured in three aspects or pillars: (1) banks should have minimum capital to guard against different kinds of risks (credit, market and operation risk); (2) assessing capital adequacy with risk profile of the bank and capital growth plan and (3) public disclosure of bank's position on risk, capital and management.

The three main risks that a commercial bank faces are: Credit risk, Market risk and Operational risk. Credit risk is the risk that arises from the probability that the borrowers of the bank will not pay back. Market risk is the risk that puts the bank in adverse situation when interest rate, foreign exchange or equity price move in unfavorable direction. Operational risk stems from the internal environment, occurring when internal processes, people or system fail. The banks can become resilient and fend off these risks with adequate capital. This is where the regulatory guidelines come to play. BB categorizes capital into three tiers. Tier 1 Capital, also known as the Core Capital, which are the top quality capital for the bank. The Components include: Paid up capital, general and statutory reserves, retained earnings, minority interest, non cumulative non putable preference

shares, etc. Tier 2 Capital, also known as supplementary capital, supports Tier 1 capital. Components include: general provision; revaluation reserves for Fixed Assets, Securities and equity investments; other preference shares and subordinated debt. Tier 3 Capital, also known as additional supplementary capital, whose components include: short term subordinated debt to solely guard against market risk. There are more specific guidelines for eligibility of the capital tiers. To measure adequacy; Capital Adequacy Ratio (CAR) is calculated with Risk Weighted Asset (RWA) on the basis of credit, market and operational risk.

Capital planning is an important part to face the risks of the bank. One of the measure or technique to assess the potential damage is stress testing. It is just a type of what-if-analysis. The financial situation of the bank is given some unfavorable “shocks” and potential worst case scenario is observed. BB provides reporting format for the banks. Banks have to follow the regulatory rules; otherwise BB can impose penalty and/or punishment as per Bank Company Act of 1991.

BBL fulfilled all major requirements of Basel II in 2010. It has been maintaining a CAR ratio of above 10% requirement for the last two years. In June 2011 Basel II report to BB, BBL recorded CAR ratio of 11.9% on actual capital. According to the same report, it has a total eligible capital of nearly BDT 13,274 million and a Total RWA of nearly BDT 111,511 million whose 10% must be kept as capital, i.e. BDT 11,151 million. Thus BBL has a surplus of capital. Most of its Tier 1 capital is covered by paid up capital which is high quality and major part of its Tier 2 capital consists of subordinated debt. BBL can smoothly implement all the pillars of Basel II further if the impediments are removed. Data and reporting should be centralized; reasonable time should be given for report submission, unnecessary complex measures can be neglected to help banks adopt Basel II. Stress Test can be improved to show realistic results regarding Pillar 2.

Basel II has been enthusiastically adopted by all the scheduled banks. 28 out of 30 banks have adequate CAR ratio as on June, 2011. Even though banks of our country have less international market exposure, the Basel II international guideline will safeguard them in any unforeseen economic condition of home and abroad.

1. Introduction

1.1 Objective of the report

The main objectives of the report are to cover the degree requirement of BRAC University, to know about the very important BB regulation of Basel II and enhance the knowledge by looking at BRAC Bank's implementation of the regulatory requirement.

1.2 Scope of the report

This report only talks about Basel II implementation of BRAC Bank Limited. This report has been prepared using utmost caution, but the complexity of Basel II regulation is very well known. The report can be a primary reading for anyone who is new to banking industry or wants to know about regulatory requirement or someone who wants to study Basel II. Under no circumstances can this report be the sole material or absolute alternative to the original BB requirement for anyone who wants to know the ins and outs of Basel II or work with Basel II regulation. For full knowledge of Basel II, the reader must refer back to "Guidelines on Risk Based Capital Adequacy (Revised Regulatory Capital Framework for banks in line with Basel II)", the main text released by BB in December, 2010.

1.3 Methodology

I have prepared the report using various sources which include face to face interview, general discussion with reporting unit officers, BB capital adequacy guideline, various websites, newspaper articles, annual reports and etc. I have neither attended any seminar/training regarding Basel II nor worked with the reporting unit for Basel II. My own research and thirst for knowledge has been my primary source of understanding.

1.4 Limitations of the report

This report contains the basic overview of original Basel II and does not cover the whole banking industry of Bangladesh. As I have not attended any seminar/training session on Basel II and page limitation is to be honored, the absolute details are absent from this report.

2. Overview of the Organization

BRAC Bank Limited is a full service scheduled commercial bank. It started its operation in 2001. The bank is primarily driven with a view of creating opportunities and pursuing market niches not traditionally met by conventional banks. BRAC Bank has been motivated to provide “best-in-the-class” services to its diverse assortment of customers spread across the country under an on-line banking system. It is the market leader in SME loan portfolio in our country. The bank was enlisted in Dhaka Stock Exchange in 2007 and it now has a market capital of BDT 1,440 million, as on October 18, 2011 (DSE, 2011)¹. It has 153 branches including SME service centers, nearly 7000 employees and operates through strong network of OMNIBUS ATM network (Wikipedia, 2011)².

The business divisions of the bank are: SME, Retail, Corporate, Probashi and Treasury & Financial Institutions. It has more than 1 million customers and increasing (Wikipedia, 2011)³. The executive committee member list is shown below:

1. Mr. Syed Mahbubur Rahman, Managing Director & CEO
2. Mr. Mohammad Mamdudur Rashid, Deputy Managing Director
3. Mr. Rais Uddin Ahmad, Company Secretary & Head of Legal, Regulatory & Internal control
4. Mr. Nabil Mustafizur Rahman, Chief Credit Officer
5. Mr. Syed Faridul Islam, Head of SME Banking
6. Ms. Tahniyat Ahmed Karim, Head of Human Resources Division
7. Mr. Firoz Ahmed Khan, Head of Retail Banking
8. Mr. Mohammed Rahmat Pasha, Head of Treasury & Financial Institutions
9. Mr. Khwaja Shahriar, Head of Cash Management Custodial Services Probashi Banking
10. Mr. Shah Alam Bhuiyan, Head of Operations & Operational Risk Management
11. Mr. Md. Sarwar Ahmed, Head of IAM – SME & Retail Banking
12. Mr. Zeeshan Kingshuk Huq Head of Corporate Affairs

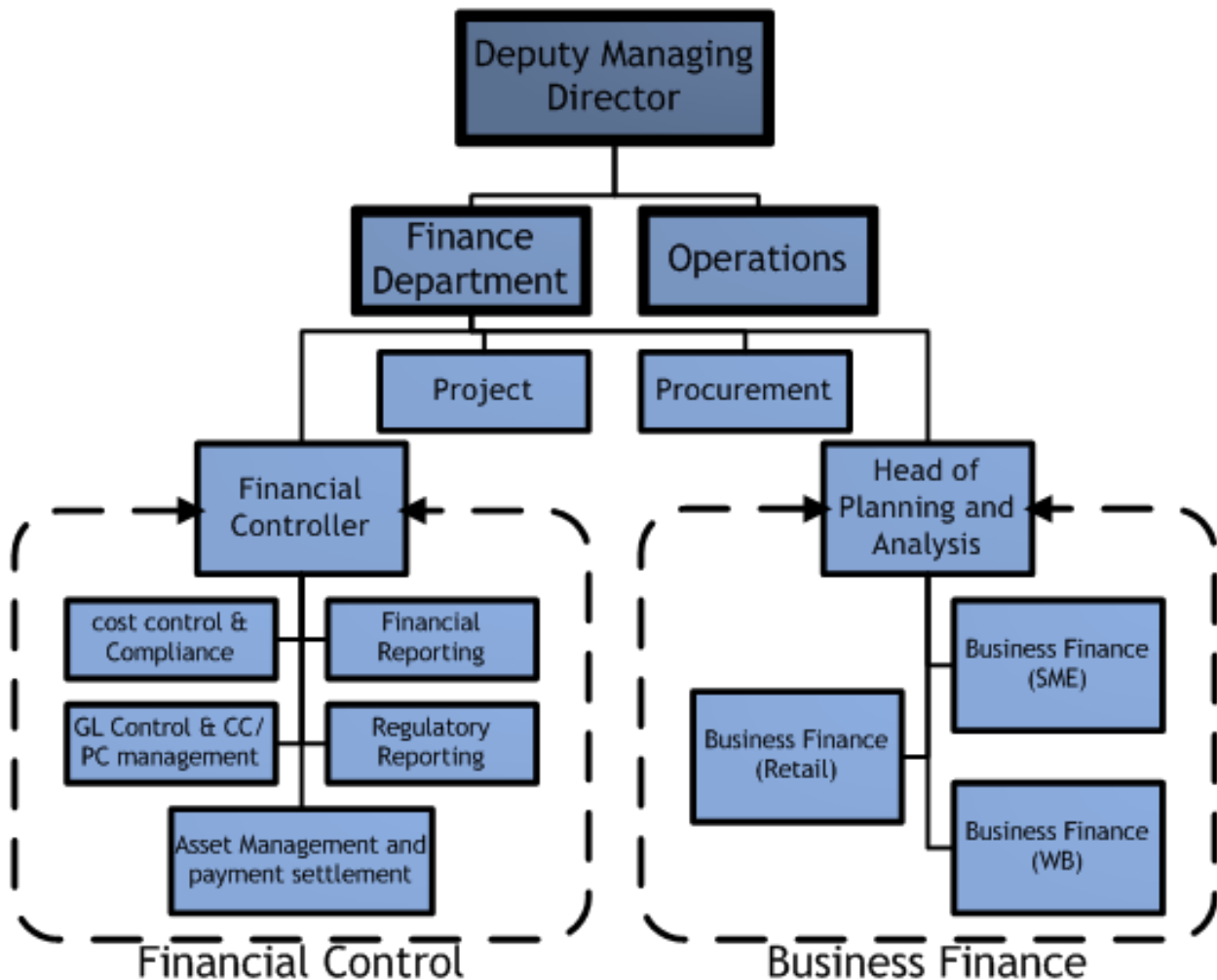
¹ DSE, 2011. *BRAC Bank Limited*. [online] Available at: <<http://www.dsebd.org/displayCompany.php?name=BRACBANK>> [Accessed 18 October 2011]

^{2,3} Wikipedia, 2011. *BRAC Bank*. [online] Available at: <http://en.wikipedia.org/wiki/BRAC_Bank> [Accessed 18 October 2011]

3. My experience with Finance department of BRAC Bank

Finance department is a crucial part of BRAC Bank's operations. There are many wings under the department. The head of Finance is the DMD himself. A diagram can show this better:

Figure 1: Finance Department Organogram



I worked in Regulatory Reporting unit and in Planning and Analysis wing. I was involved mostly in data retrieval and sorting for BB reporting. Then I moved to Business Finance for the Bank's yearly budgeting project. There I worked with the budget team which prepares the bank's yearly budget of income, expense, asset and liability. I arranged the historical information of GL Accounts Cost-Center wise regarding the aforementioned particulars. Most of the works were done in Ms Excel.

4. Basel II: Capital Adequacy Framework

4.1 Origin

There are thousands of commercial banks in the world. These banks face a lot of risks everyday in many forms. Strong and well functioning banking industry is undoubtedly one of the main ingredients of a country's growth. With this perspective, in 1975, Basel Committee on Banking Supervision (BCBS) was formed. Its secretariat office is at the Bank for International Settlements in Basel, Switzerland. Its main objectives were to understand the supervisory issues related to banks and improve the supervisory quality globally. BCBS committee members come from 27 countries and help come up with standard guidelines for banks to follow (Wikipedia, 2011)⁴. It is not a body which can issue binding regulations; it is rather a forum where global best practice standards regarding risk management in banks are developed. Most countries are implementing the committee's policies and they are enforced through national laws and regulations in line with the recommended guidelines by BCBS (Wikipedia, 2011)⁵. The committee issued recommendations on banking laws and regulations known as Basel Accord (Basel I of 1988) which addressed minimum capital requirement for commercial banks (Wikipedia, 2011)⁶. The second installment of the accord came out in 2004 and is best known as Basel II (revised in 2006) which better addresses the issue of how banks and other depository institutions should handle their capital to guard against risks they face (Wikipedia, 2011)⁷.

4.2 Objectives

The main objectives of Basel II are:

“Ensuring that capital allocation is more risk sensitive;

Enhance disclosure requirements which will allow market participants to assess the capital adequacy of an institution;

⁴ Wikipedia, 2011. *Basel Committee on Banking Supervision*. [online] Available at: <http://en.wikipedia.org/wiki/Basel_Committee_on_Banking_Supervision> [Accessed 18 October 2011]

⁵ Wikipedia, 2011. *Basel Accords*. [online] Available at: <http://en.wikipedia.org/wiki/Basel_Accords> [Accessed 18 October 2011]

⁶ Wikipedia, 2011. *Basel I*. [online] Available at: <http://en.wikipedia.org/wiki/Basel_I> [Accessed 18 October 2011]

⁷ Wikipedia, 2011. *Basel II*. [online] Available at: <http://en.wikipedia.org/wiki/Basel_II> [Accessed 18 October 2011]

Ensuring that credit risk, operational risk and market risk are quantified based on data and formal techniques;

Attempting to align economic and regulatory capital more closely to reduce the scope for regulatory arbitrage.”(Wikipedia, 2011)⁸

4.3 Scope of Basel II regulatory requirement in Bangladesh

As BCBS does not have the authority to issue binding laws in any country, so in Bangladesh, the central bank- Bangladesh Bank (BB) issues the guidelines under section 13 and section 45 of “Bank Company Act -1991”. BB recognized the importance of Basel II and decided to implement the global standard guidelines for banking supervision. BB has made this requirement mandatory for all scheduled banks from January 01, 2010. The guidelines apply to banks on solo and consolidated basis. Solo basis means “the bank” only with all of its local and overseas branches. Consolidated basis means “the bank” and its subsidiaries, e.g. merchant banks, brokerage firms inclusive. In December 2010, Bangladesh Bank released the compulsory guidelines under the name- “Guidelines on Risk Based Capital Adequacy (Revised Regulatory Capital Framework for banks in line with Basel II)”. (BB, 2010, pp.1)⁹

4.4 Structure of BASEL II

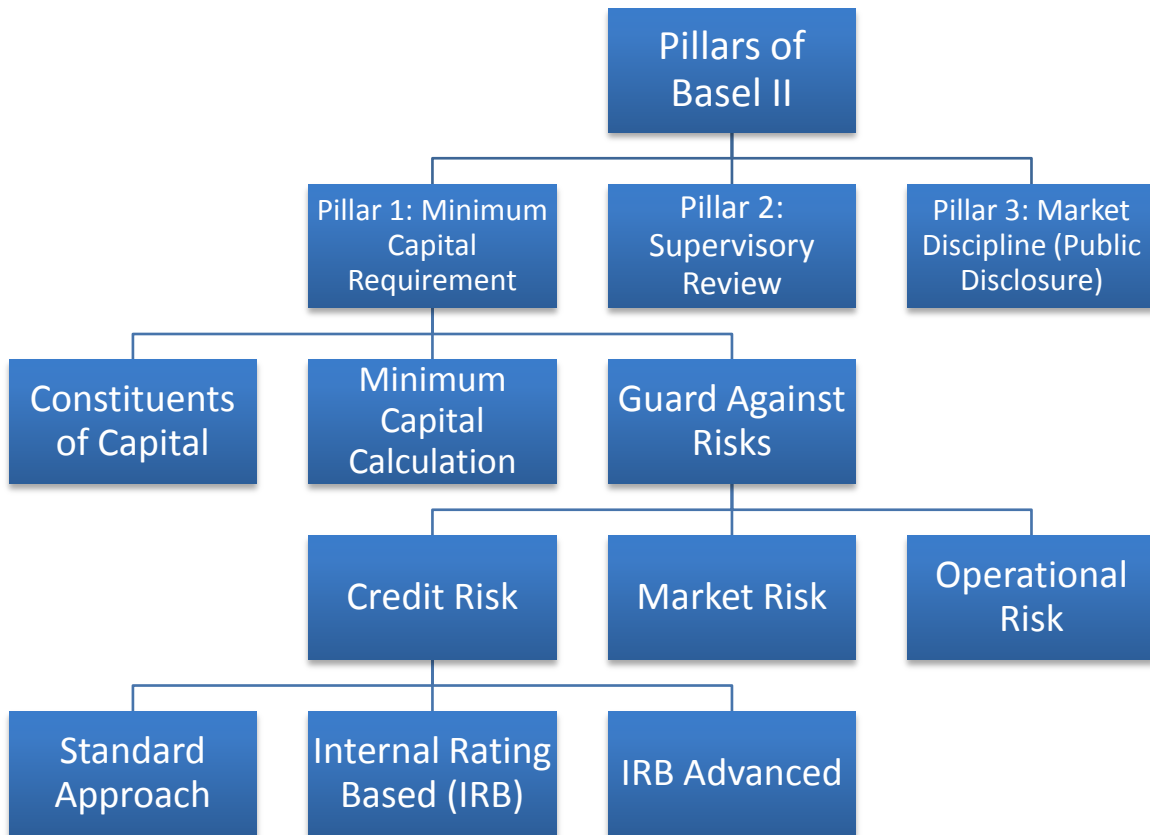
To understand Basel II, we must first know the structure of the Basel II. It is illustrated in the figure (BIS, 2006, pp.6)¹⁰ below:

⁸ Wikipedia, 2011. *Basel II*. [online] Available at: <http://en.wikipedia.org/wiki/Basel_II> [Accessed 18 October 2011]

⁹ Bangladesh Bank, 2010. *Guidelines on Risk Based Capital Adequacy: Revised Regulatory Capital Framework for banks in line with Basel II* [pdf] Available at: <<http://www.bangladesh-bank.org/mediaroom/baselii/dec2910brpd35rbca.pdf>> [Accessed 18 October 2011]

¹⁰ Bank for International Settlement, 2006. *International Convergence of Capital Measurement and Capital Standards: A Revised Framework* [pdf] Available at: <<http://www.bis.org/publ/bcbs128.pdf>> [Accessed 18 October 2011]

Figure 2: Basel II Structure



4.5 Guard against Three Risks

BCBS identified three basic risks that banks face and they think adequate capital should be there to guard the bank against these risks.

4.5.1 Credit Risk

Credit risk is the risk bank faces when its borrowers and/or counterparty do not fulfill their obligation towards the bank. Bank's claim will include loans and advances to and deposits in local and foreign currency to other banks, central bank and other local and international institution which include International Monetary Fund (IMF), World Bank, Asian Development Bank (ADB), European Central Bank (ECB) and etc. Assets in non-bank financial institutions (NBFIs), corporate, retail and SME will also have to be counted. The

maximum exposure to single borrower (person or institute) can be BDT 1 crore (BB, 2010, pp.9)¹¹.

4.5.2 Market Risk

Market risk arises from on and off balance sheet exposure to debt securities, equity securities and foreign currency. The main concern is that the variables will move adversely and the bank will incur losses due to the loss of value of the securities. BB requires banks to maintain capital for interest rate movements, adverse price movements of equity securities, foreign exchange, repo-reverse repo transactions, interest rate derivatives, Forward Rate Agreements (FRA) and SWAPs (BB, 2010, pp.32-34)¹².

4.5.3 Operational Risk

This risk is the risk of loss due to failed internal process, people and system or from external events. It also includes legal risk.

4.6 Pillar 1: Minimum Capital Requirement

Basel Committee and BB agree that some minimum capital must be maintained to make banks and depository institutions more risk sensitive and shock resilient. BB laid out guidelines about the capital that can be and should be counted in calculating Capital Adequacy Ratio (CAR).

4.6.1 Risk Based Capital Adequacy

BB did not give banks any specific amount of capital target. Banks have different mix in their loans and advances portfolio. HSBC Bangladesh has huge corporate loan portfolio whereas BRAC Bank Limited focuses heavily on SME loans. A one size fit all capital amount would not have been right. This is why a bank is supposed to weight its assets according to the risk it faces and maintain adequate capital to protect itself. The assets are weighted with risk factors and Total Risk Weighted Asset (RWA) is found. Minimum 10% of the RWA

^{11,12} Bangladesh Bank, 2010. *Guidelines on Risk Based Capital Adequacy: Revised Regulatory Capital Framework for banks in line with Basel II* [pdf] Available at: <<http://www.bangladesh-bank.org/mediaroom/baselii/dec2910brpd35rbca.pdf>> [Accessed 18 October 2011]

must be backed by Total Eligible Capital (Tier 1, 2 and 3 capitals) (Ahmed, 2011)¹³ and minimum 5% of RWA must be backed by Core Capital (Tier 1 capital) (BBL, 2010, pp.37)¹⁴.

4.6.2 Eligible Regulatory Capital

To measure capital base, regulators divided qualifying capital in three tiers. The tiers with their constituents (BB, 2010, pp.1-2)¹⁵ are shown in the table below:

Table 1: Capital Tiers and their constituents

Tier	Constituents
Tier 1: Core Capital	<ol style="list-style-type: none"> 1. Paid up capital 2. Non-repayable share premium account 3. Statutory reserve 4. General reserve 5. Retained earnings 6. Minority interest in subsidiaries 7. Non-cumulative irredeemable preference shares 8. Dividend equalization account
Tier 2: Supplementary Capital	<ol style="list-style-type: none"> 1. General provision (Unclassified loans, Special Mention Account loans and off Balance Sheet exposures) 2. Revaluation reserves for fixed assets, securities and equity instruments 3. All other preference shares 4. Subordinated debt
Tier 3: Additional Supplementary Capital (for Market Risk only)	<ol style="list-style-type: none"> 1. Short term subordinated debt (2 years ≤ maturity ≤ 5 years)

There are conditions to maintain the capital for the purpose of protecting against risks:

1. Tier 2 capitals cannot be more than Tier 1 capitals.
2. Only 50% of Revaluation reserves for fixed assets and securities will be counted as Tier 2 capital.
3. Only 10% of Revaluation reserves for equity securities will be counted as Tier 2 capital.

¹³ Ahmed, M., 2011. Banking sector is in strong position regards to capital adequacy. *Prothom Alo*, 14 Sep. p14bc.

¹⁴ BRAC Bank Limited, 2010. Annual Report 2010, Dhaka: BRAC Bank.

¹⁵ Bangladesh Bank, 2010. *Guidelines on Risk Based Capital Adequacy: Revised Regulatory Capital Framework for banks in line with Basel II* [pdf] Available at: <<http://www.bangladesh-bank.org/mediaroom/baselii/dec2910brpd35rbca.pdf>> [Accessed 18 October 2011]

4. Subordinated debt can be maximum 30% of Tier 1 capital to be considered in CAR calculation.
5. Tier 1 capital must cover at least 28.5% of market risk. Supporting of Market Risk from Tier 3 capital must be limited to 250% of Tier 1 capital that remains after meeting credit risk capital requirement by Tier 1. (BB, 2010, pp.3)¹⁶

4.6.3 Risk Weighted Assets (RWA)

Risk must be taken into consideration while calculating the capital needed to meet BB requirements. BB provides a list of assets and necessary weights based on their respective risk. The basic RWA calculation (BBL, 2011)¹⁷ is as below:

Table 2: Format for Risk Weighted Asset Calculation

Risk Weighted Assets (RWA) for		Amount
A	Credit Risk	XXXX
	On- Balance sheet $\sum(Exposure\ types * Risk\ Weights)$	XXXX
	Off- Balance sheet $\sum(Exposure\ types * Risk\ Weights)$	XXXX
B	Market Risk (Capital charge for Market Risk * 10)**	XXXX
C	Operational Risk (Capital charge for Operational Risk * 10)**	XXXX
Total RWA (A+B+C)		XXXXX

**Capital charge for market risk and operational risk are multiplied by 10(= reciprocal of minimum capital adequacy ratio of 10%)

Minimum Capital Requirement (MCR) is 10% of Total RWA. Thus, Capital Adequacy Ratio (CAR) should be:

$$CAR = \frac{Eligible\ Regulatory\ Capital}{RWA} \geq 10\%$$

¹⁶ Bangladesh Bank, 2010. *Guidelines on Risk Based Capital Adequacy: Revised Regulatory Capital Framework for banks in line with Basel II* [pdf] Available at: <<http://www.bangladesh-bank.org/mediaroom/baselii/dec2910brpd35rbca.pdf>> [Accessed 18 October 2011]

¹⁷ BRAC Bank Limited, 2011. *Basel II Report*, June 2011, Dhaka: BRAC Bank.

The Balance Sheet items and their recommended weights for Credit Risk calculation can be found in a tabular form in Appendix 1.

Loans and Advances, investment and other asset portfolio exposure and their recommended risk weights for Credit Risk calculation can be found in Appendix 2.

Capital Charge calculation for Market Risk (BBL, 2011)¹⁸ is shown below:

Table 3: Format for calculating Capital Charge for Market Risk

Details	Capital Charge for Specific Risk (Market Value * 10%)	Capital Charge for General Market Risk (Market Value * 10%)	Total Capital Charge for Market Risk
	1	2	(1 +2)
Interest Rate Related instruments	XX	XX	XXXX
Equities	XX	XX	XXXX
Foreign Exchange Position	XX	XX	XXXX
Commodities	XX	XX	XXXX
Total			XXXXX

Banks in Bangladesh can compute Capital Charge for Operational Risk under Basic Indicator Approach (BIA) (BB, 2010, pp.126)¹⁹. The approach is summarized below:

$$K = \frac{[(GI1 + GI2 + GI3) * \alpha]}{n}$$

Where,

K = Capital charge under BIA

GI = only positive annual gross income over the previous 3 years

α = 15% (as per guideline)

n = number of previous three years for which gross income is positive

¹⁸ BRAC Bank Limited, 2011. *Basel II Report*, June 2011, Dhaka: BRAC Bank.

¹⁹ Bangladesh Bank, 2010. *Guidelines on Risk Based Capital Adequacy: Revised Regulatory Capital Framework for banks in line with Basel II* [pdf] Available at: <<http://www.bangladesh-bank.org/mediaroom/baselii/dec2910brpd35rbca.pdf>> [Accessed 18 October 2011]

Gross Income (GI) Calculation:

	Total Profit/Loss before tax	XX
(+)	Total Provision	XX
(+)	Total Operating Expenses	XX
(-)	Realized profit/losses from sale of securities	XX
(-)	Extra ordinary/irregular items	XX
(-)	Income derived from insurance	XX
=	Gross Income (GI)	XXXX

4.6.4 Capital Adequacy Ratio (CAR)

Minimum Capital Requirement (MCR) is 10% of Total RWA. Thus, Capital Adequacy Ratio (CAR) should be:

$$CAR \text{ on actual eligible capital} = \frac{\text{Eligible Regulatory Capital (Tier 1,2,3)}}{RWA} \geq 10\%$$

$$CAR \text{ on core capital} = \frac{\text{Eligible Core Capital (Tier 1 capital)}}{RWA} \geq 5\%$$

4.6.5 Credit Risk Mitigation (CRM)

Banks use a number of tools to reduce their risk exposure to protect their loan portfolio. The tools or techniques can be considered in two heads: 1. Collateral for CRM and 2. Guarantee for CRM.

Banks are allowed to reduce their risk of counter party default by being in possession of eligible financial collateral (BB, 2010, pp.19)²⁰. Eligible financial collateral include:

- Cash (also Certificate of deposit, fixed deposit or comparable instrument)
- Gold

²⁰ Bangladesh Bank, 2010. *Guidelines on Risk Based Capital Adequacy: Revised Regulatory Capital Framework for banks in line with Basel II* [pdf] Available at: <<http://www.bangladesh-bank.org/mediaroom/baselii/dec2910brpd35rbca.pdf>> [Accessed 18 October 2011]

- Securities rated by recognized External Credit Assessment Institution (ECAI) as investment grade.
- Debt securities not rated by ECAI but:
 - Issued by a bank
 - Listed on recognized exchange
 - Classified as senior debt
- Equities that are traded in Dhaka and Chittagong Stock Exchange (DSE and CSE). Value will be calculated based on last six month's daily average.

The eligibility criteria of the collateral are also mentioned by BB (BB, 2010, pp.20)²¹:

- The bank should have the right to liquidate or take legal possession of it in a timely manner in the event of default or bankruptcy.
- There must not be a material positive correlation between counterparty and issuer of collateral.
- Banks must have clear and robust procedures for timely liquidation of collateral.
- If the collateral is held by a custodian, bank must take steps to ensure that custodian segregates the collateral from its own assets.

Eligible guarantors for CRM are:

- Sovereigns, sovereign entities and banks with a lower risk weight than the counterparty.
- Guarantee provided by parent, subsidiary and affiliate companies when they have lower risk weight than the counterparty.

There are conditions that must be met by eligible guarantors (BB, 2010, pp.22-23)²²:

- The guarantee must be clearly and explicitly referenced. It must be indisputable, irrevocable, and unconditional and should be obliged to pay back in timely manner in the event of default by the original party.

^{21,22} Bangladesh Bank, 2010. *Guidelines on Risk Based Capital Adequacy: Revised Regulatory Capital Framework for banks in line with Basel II* [pdf] Available at: <<http://www.bangladesh-bank.org/mediaroom/baselii/dec2910brpd35rbca.pdf>> [Accessed 18 October 2011]

- When a guaranteed exposure is classified as nonperforming, the guarantee will no longer be considered as a risk mitigant.
- The bank should have the right to be paid by the guarantor, in case of default by the original party, without first taking legal steps against the original party.

4.6.6 Credit Risk Calculation Methodologies

Basel II allows three ways to calculate credit risk and any one can be followed. The first is the **Standard Approach**. It calls for the use of external credit rating by External Credit Assessment Institution (ECAI). The ECAI determined risk weights for counterparty will be used in credit risk calculation. ECAIs will also determine similar counterparty groups and apply standard risk weightings to those categories. The second way is **Internal Ratings Based (IRB)** approach. This approach allows banks to use their internal assessment of counterparty regarding the Probability of Default but requires them to use standard supervisory parameters regarding Exposure at Default and Loss Given Default. The final approach is the **IRB Advanced** approach. This approach allows banks to use their own internal assessment in determining Probability of Default and quantifying Exposure at Default and Loss Given Default (BBL, 2010, pp.36)²³.

4.7 Pillar 2: Supervisory Review Process (SRP)

The main theme of Pillar 2 is that (1) banks have to have a process to assess their own risk profile and calculate adequate capital and (2) they must have a strategy to maintain the level of adequate capital required in the future. Banks should also have SRP team which will manage all the risks a bank faces, develop and implement better risk management techniques.

4.7.1 Effective Oversight by Management

The supervisory process is a tool for the regulators to ensure adequate capital of banks to guard against risks. It also delegates responsibility to top management of the institutions to make certain of the implementation of the laws. The management must analyze their risks

²³ BRAC Bank Limited, 2010. Annual Report 2010, Dhaka: BRAC Bank.

internally, make plan on capital and maintain proper internal control process. Supervisory review process will address:

1. Risk that are not covered by Pillar 1 (risks other than credit, market and operation)
2. External risk factors to the bank that are not captured by Pillar 1.

Management must take steps to plan for achieving proper capital target and to gradually use advance process of calculating RWA and CAR. The five main features of effective review process are:

1. Board and senior management oversight
2. Sound capital assessment
3. Comprehensive assessment of risks
4. Monitoring and reporting
5. Internal control review

The SRP team is responsible for making and applying Internal Capital Adequacy Assessment Process (ICAAP). The ICAAP is an important part of Pillar 2 because it helps the bank in risk measurement and capital planning process. It is basically an internally created guideline regarding risk assessment and reporting process to be followed when considering the amount and type of capital the bank should maintain to support its business.

4.7.2 Supervisory Review Evaluation Process (SREP)

BB Basel II implementation cell reviews each bank's supervisory review process. This cell evaluates the bank's SRP and then arranges dialogue/ discussion session with that bank's SRP team.

BB SREP team will analyze bank's review process. BB expects banks to operate above minimum capital standards. BB, through SREP, will intervene at an early stage if they feel that the bank would falter in meeting minimum capital requirement. The frequency of meeting will depend on bank's activities and the difference between capital requirement

assessed by the bank and BB team. Usually, the SRP-SREP Dialogue takes place in BB once every year.

4.7.3 Stress Testing

Stress testing is a kind of sensitivity analysis or “what-if-analysis” for banks. The purpose of this test program is to find out how shock absorbent a bank is. Basically, the test calls for changing a single variable at a time and observing what the result bring to the bank’s assets, profitability, liquidity and other measures. The variables are changed to test forward looking scenario a bank might face. This will measure the vulnerability and exposure to rare, exceptional but potential events.

The five different risk factors that are used in stress testing (BB, 2010, pp.52)²⁴ are:

1. Interest rate
2. Forced sale value of collateral
3. Non-performing loan (NPL)
4. Share price
5. Foreign exchange rate

Stress test on liquidity must be done separately. The three levels of shocks are: Minor (e.g. only 1% change in interest rate), Moderate (e.g. a 3% change in interest rate) and Major (e.g. 5% or more change in interest rate) (BB, 2010, pp.53)²⁵.

After BB collects information from banks and finishes the dialogue, the bank and BB will set the total capital requirement for the bank corresponding to the risks they face. The general format of additional capital (BB, 2011, pp.3)²⁶ is given below:

^{24,25} Bangladesh Bank, 2010. *Guidelines on Risk Based Capital Adequacy: Revised Regulatory Capital Framework for banks in line with Basel II* [pdf] Available at:<<http://www.bangladesh-bank.org/mediaroom/baselii/dec2910brpd35rbca.pdf>> [Accessed 18 October 2011]

²⁶ Bangladesh Bank, 2011. *Process Document for SRP-SREP Dialogue on ICAAP (Implementation of 2nd Pillar of Basel II)* [pdf] Available at:<<http://www.bangladesh-bank.org/mediaroom/baselii/guidelinefeb2011.pdf>> [Accessed 18 October 2011]

Table 4: Additional Capital under Pillar 2

Particulars of risks against which capital required	Required Capital
Credit risk	XX
Market risk	XX
Operational risk	XX
A) Capital Requirement against Credit, Market & Operational risks	XXXX
Residual risk	XX
Evaluation of Core Risk management	XX
Credit concentration risk	XX
Interest rate risk in the banking book	XX
Liquidity risk	XX
Reputation risk	XX
Settlement risk	XX
Strategic risk	XX
Environmental & Climate change risk	XX
Other material risk	XX
B) Requirement of additional capital under SRP	XXXX
Total Capital Requirement (A+B) for the year	<u>XXXXX</u>

Risks that are assessed through capital and those that are not are shown below:

Risk assessed through capital	Risk not explicitly assessed through capital
Credit Risk	Liquidity Risk
Market Risk	Reputation Risk
Operational Risk	Sustainability Risk
Interest rate in the banking book	Concentration Risk
Pension risk	Strategic Risk

4.8 Pillar 3: Market Discipline

This pillar is present in Basel II framework to complement the other two pillars. This pillar requires the bank to disclose information to public and be more transparent to the financial market and the participants. Current and potential stockholders, depositors and borrowers will want to know the bank's strengths and potential loss of assets.

4.8.1 Disclosure Requirements

Banks must have a formal disclosure framework approved by the Board or CEO of the bank. The banks must follow the disclosure format provided by BB.

The disclosed information must be consistent to the audited financial statements. The information must be material and omission of important and relevant data must be avoided. Banks have to submit the data along with annual financial statements to BB by the end of March every year. Banks can disclose the Basel II information in their Annual Report and/or on their website. In case of Annual Report, a separate section must be utilized to report information. In case of website, the Basel II information must be provided in the home-page. The historical information must be maintained in the website for 4 years (BB, 2010, pp.59)²⁷. The components must be disclosed in tabular form and in quantitative and/or in qualitative form regarding the topics mentioned below:

1. Scope of application
2. Capital structure
3. Capital adequacy
4. Credit Risk
5. Equities: disclosures for banking book positions
6. Interest rate risk in the banking book (IRRBB)
7. Market risk
8. Operational risk

²⁷ Bangladesh Bank, 2010. *Guidelines on Risk Based Capital Adequacy: Revised Regulatory Capital Framework for banks in line with Basel II* [pdf] Available at: <<http://www.bangladesh-bank.org/mediaroom/baselii/dec2910brpd35rbca.pdf>> [Accessed 18 October 2011]

4.9 Basel III: Basic Proposition

Basel III is introduced in a situation when the global banking industry is in ruin. Thus, one may expect Basel III to be more rigorous in regulating and protecting the banks. It will move to fill in the deficiencies the banks have in their operation that are revealed by the latest global financial crisis. Banks will have to hold 4.5% of common equity in their capital. The MCR on core capital is going up to 6% from 5% of Basel II. Basel III also introduces additional capital buffers, minimum 3% leverage ratio and two liquidity ratios (the Liquidity Coverage ratio and Net Stable Funding ratio) (Wikipedia, 2011)²⁸.

²⁸ Wikipedia, 2011. *Basel III*. [online] Available at: <http://en.wikipedia.org/wiki/Basel_III> [Accessed 18 October 2011]

5. Basel II implementation in BRAC Bank

In BRAC Bank, the implementation works started in 2009 and in 2010, the bank fulfilled all the major requirements of BB. In 2011, the bank has met all reporting requirements set by the central bank.

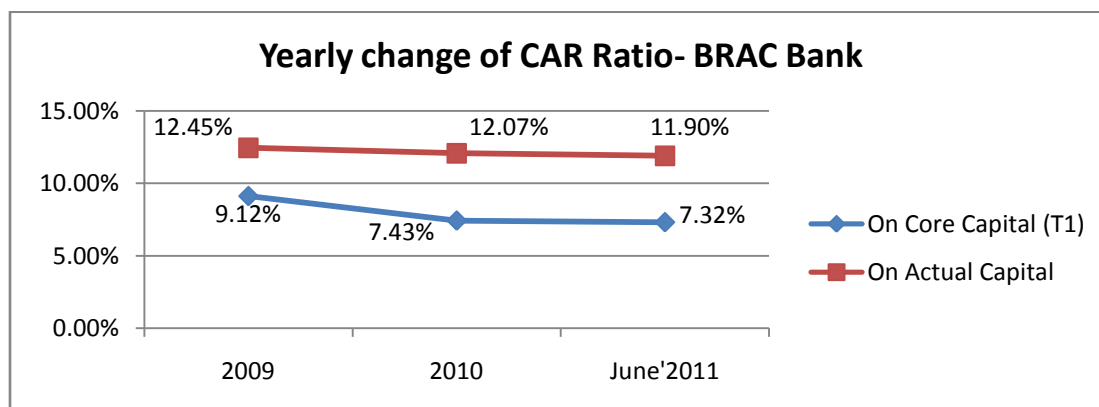
5.1 Implementation Achievements

BBL has been successfully achieving the desired Capital Adequacy Ratio (CAR) since 2009. The management is fully aware about the guidelines of BB and prepared for implementing new Basel II accord. An implementation committee has been formed which is headed by the Head of Operations. Adequate training from home and abroad to the concerned staff on Basel II is given for better understanding and smooth implementation of Basel II. BRAC Bank also issued BDT 3 billion worth of bond to meet its Tier 2 Capital (Subordinated 25% convertible bond). A table below shows historical (BBL, 2010, pp.37)²⁹ and current (BBL, 2011)³⁰ CAR ratio of BBL.

Table 5: Historical CAR ratio of BBL

Capital Adequacy Ratio (CAR)	Requirement under Basel II	BRAC Bank 2011 (June'11)	BRAC Bank 2010	BRAC Bank 2009
On Core Capital (Tier 1)	5%	7.32%	7.43%	9.12%
On Actual Capital (Tier 1,2,3)	10%	11.9%	12.07%	12.45%

Figure 3: Yearly change of CAR ratio of BRAC Bank



²⁹ BRAC Bank Limited, 2010. Annual Report 2010, Dhaka: BRAC Bank.

³⁰ BRAC Bank Limited, 2011. *Basel II Report*, June 2011, Dhaka: BRAC Bank.

5.2 Financial Position of BBL regarding Requirements

Half yearly figures are the latest available from BRAC Bank. BBL Basel II Quantitative disclosure (BBL, 2010, pp.38)³¹ (BBL, 2011)³² is shown below:

Table 6: Quantitative disclosure of BRAC Bank

	BRAC Bank Basel 2 Quantitative Disclosure				Variance	
	Particulars	2011 Solo (June)	2010 Solo	2009 Solo	2010-2011	2009-2010
	Tier 1 (Core Capital)					
	Fully paid up capital/ Capital deposited with BB	3,212,352,000	2,676,960,000	2,059,200,000	20%	30%
	Statutory reserve	2,168,081,932	1,920,598,872	1,337,479,877	13%	44%
	Non repayable share premium account	1,406,000,000	1,406,000,000	1,406,000,000	0%	0%
	General reserve	-	-	-		
	Retained Earnings	1,377,758,992	1,687,394,554	1,271,731,067	-18%	33%
	Minority interest in subsidiaries	-	-	-		
	Share money deposit	-	-	-		
	Non cumulative irredeemable preference shares	-	-	-		
	Dividend equalization accounts	-	-	-		
1	Sub total	8,164,192,924	7,690,953,426	6,074,410,944	6%	27%
	Deductible from Tier 1 capital					
	Book value of Goodwill	-	-	-		
	Shortfall in provision required against classified assets irrespective of any relaxation allowed	-	-	-		
	Deficit on account of revaluation of investment in AFS category	-	-	-		
	Investment in subsidiary	-	299,324,147	-	-100%	
	Other items if any	-	-	-		
2	Sub total	-	299,324,147	-	-100%	
A=(1-2)	Total Eligible Tier 1 capital	8,164,192,924	7,391,629,279	6,074,410,944	10%	22%

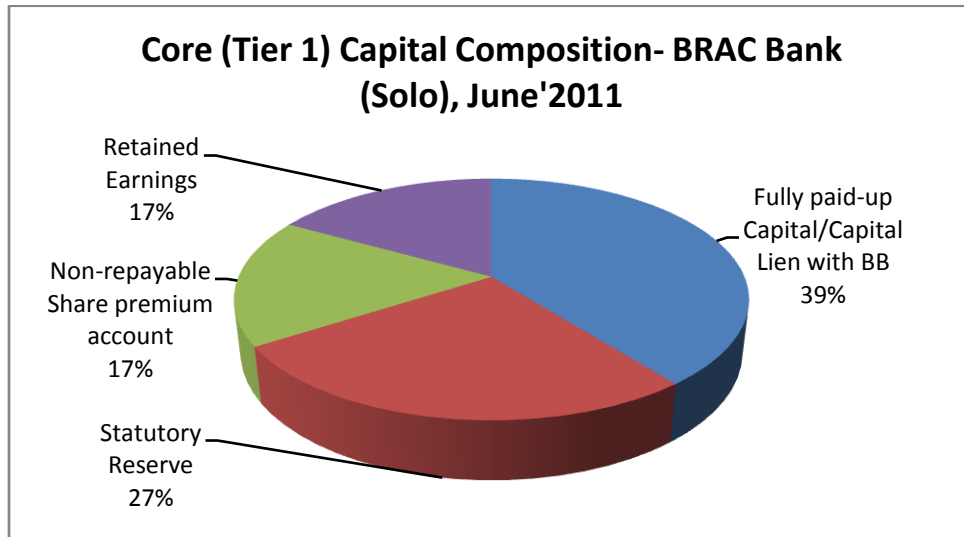
³¹ BRAC Bank Limited, 2010. Annual Report 2010, Dhaka: BRAC Bank.

³² BRAC Bank Limited, 2011. *Basel II Report*, June 2011, Dhaka: BRAC Bank.

	Tier 2 (Supplementary Capital)					
	General Provision	1,742,719,283	1,590,674,026	927,474,510	10%	72%
	Asset revaluation reserve	567,798,070	610,466,065	788,249,234	-7%	-23%
	Preference shares	350,000,000	500,000,000	500,000,000	-30%	0%
	Perpetual Subordinated debt	2,449,257,877	2,217,488,784	-	10%	
	Exchange Equalization fund	-	-	45,000		-100%
3	Sub total	5,109,775,230	4,918,628,875	2,215,768,744	4%	122%
4	Deduction (Investment in subsidiary)	-	299,324,147	-	-100%	
B=(3-4)	Total eligible Tier 2 capital	5,109,775,230	4,619,304,728	2,215,768,744	11%	108%
	Tier 3 (eligible for market risk only)	-	-	-		
C	Short term subordinated debt	-	-	-		
	Total Supplementary Capital (Tier 2 and 3)	5,109,775,230	4,619,304,728	2,215,768,744	11%	108%
X=(A+B+C)	Total Eligible Capital	13,273,968,154	12,010,934,007	8,290,179,688	11%	45%
	Total Risk Weighted Asset (TRWA)	111,511,692,695	99,508,446,419	66,584,441,167	12%	49%
Y	Required Capital based on RWA (10% of TRWA)	11,151,169,270	9,950,844,642	6,658,444,117	12%	49%
(X-Y)	Surplus/ (Deficiency)	2,122,798,884	2,060,089,365	1,631,735,571	3%	26%
	Capital Adequacy Ratio					
	On core capital (against minimum of 5%)	7.32%	7.43%	9.12%	-1%	-19%
	On actual capital (against minimum of 10%)	11.90%	12.07%	12.45%	-1%	-3%

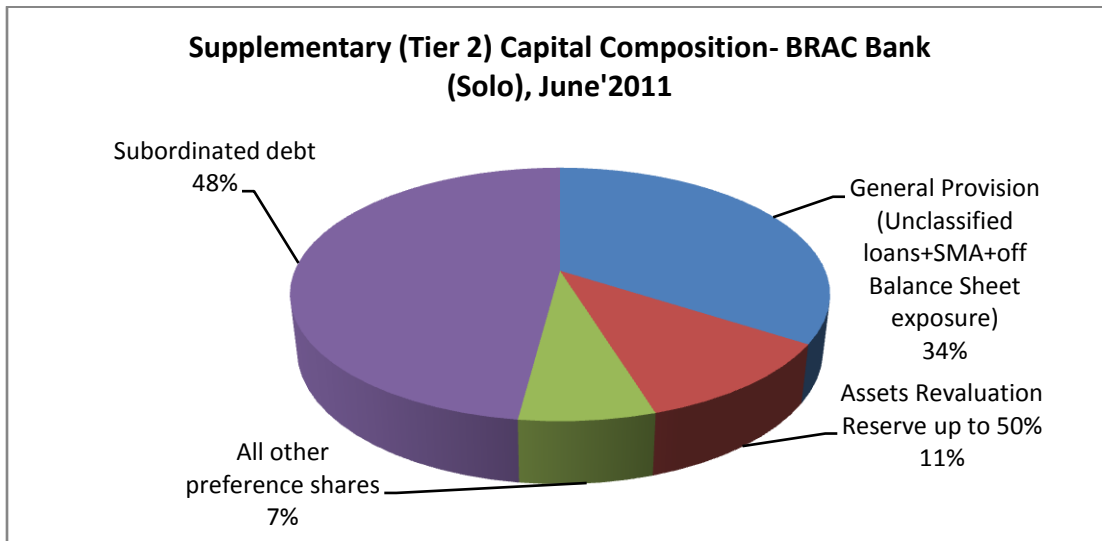
Tier 1 capital breakdown for BRAC Bank is shown in a chart below:

Figure 4: Core capital composition of BBL (Jun'11)



Tier 2 capital breakdown for BRAC Bank is shown in a chart below:

Figure 5: Supplementary capital composition of BBL (Jun'11)

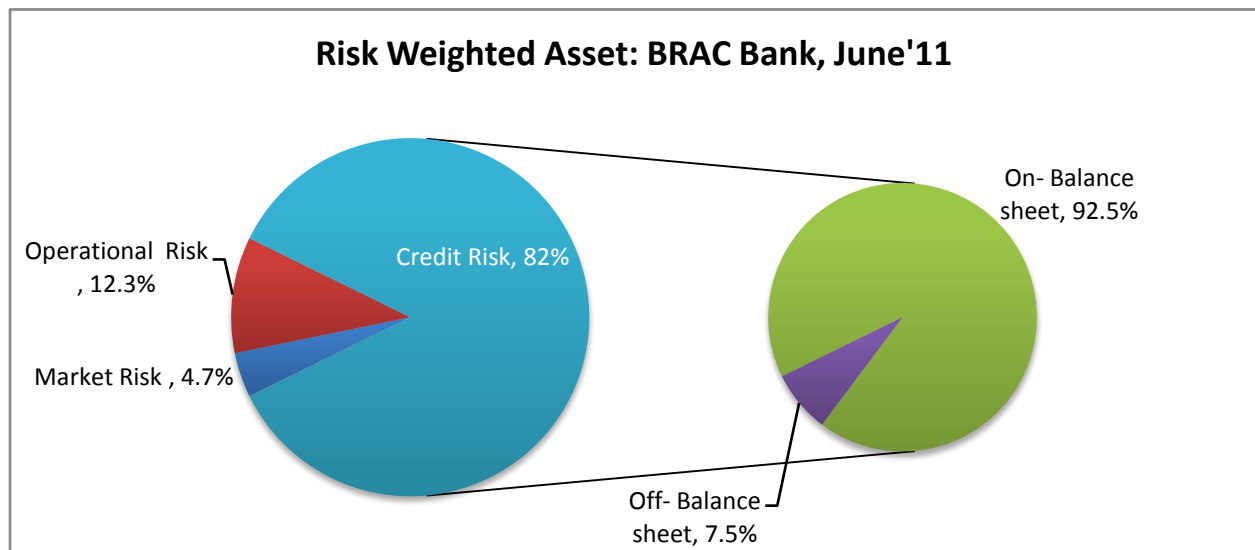


The Total Risk Weighted Asset has been calculated as:

Risk Weighted Assets (RWA) for		Amount
A	Credit Risk	92,572,399,393
	On- Balance sheet	85,623,756,958
	Off- Balance sheet	6,948,642,435
B	Market Risk	5,263,545,624
C	Operational Risk	13,675,747,678
Total RWA (A+B+C)		111,511,692,695

The risk weight composition is shown in a chart below:

Figure 6: Risk Weighted Asset composition of BBL (Jun'11)



5.3 Impediments to Basel II adoption in BBL

In a developing country like ours, the banking industry is not big enough compared to that of the other developed countries. Our banking sector does not have excessive international exposure as well. Still BB believes that the supervision should be up to global standards. Original Basel II accord is meant to oversee the banking industry as a whole which includes the banks in developed countries who deal with complex financial instruments. BB thus modified and simplified the policy to adapt it for our country scenario. Still it is one of the most complex yet important guidelines of BB.

Whenever some new policy and guidelines are implemented, people and institutions face various problems. Some of the internal and external problems that BBL faced while implementing Basel II are listed below:

- Internal data and reports are not centralized. Some of the reporting parts are done by Finance Department and others are done by the Operational Risk Management (ORM). This issue raises problem in calculation of various ratios and measures.
- There is no software specifically modified for Basel II reporting.
- Bangladesh Bank's report submission timeline is not helpful. Many of the reports are to be submitted on the same day but some of them have dependency on each other. In other words, unless the figures and values are calculated on some of the reports, the other reports cannot be prepared. BB wants to get the Quarterly reports within 30 days of quarter end and they are thinking to reduce it to 20 days!
- Stress Test report under Pillar 2 is very impractical. This "What If Analysis" and its variables are too rare and extreme occurrences.
- There are some unnecessary points and measures that are not very important for judging bank's sustainability (e.g. Supervisory Haircut Weights, Herfindahl-Hirschman Index (HHI) calculation for credit concentration, Environmental & Climate Change Risk assessment, and etc).

6. General discussion and analysis of Findings

After going through BB's "Guidelines on Risk Based Capital Adequacy (Revised Regulatory Capital Framework for banks in line with Basel II)", I realized it is a pretty complex set of instructions which rightfully demands a separate team in the bank for the implementation purpose. Without training, it is very difficult to grasp the global standard regulatory policy for the whole banking industry. After talking to one of the members of SRP team, I got to know Basel II better.

Basel II became mandatory for all scheduled banks in Bangladesh since January 2010. It did not take long for the banks to adopt Pillar 1 of the policy. BRAC Bank has been maintaining a little over the minimum CAR ratio. This year, 2011, is significant because BBL will submit full Basel report to BB with Pillar 2 requirements also. The problems in implementing the requirements in BBL should be mitigated as soon as possible for smooth adoption. Data should be centralized, a program or software should be in place to get the Basel reporting done and banks should be helped more by BB. It is still very early stage for BBL and other banks to fully implement all the policies. So BB can give banks more time to get accustomed to the reporting issues. BB should understand the report dependencies present in banks and should reschedule the report submission dates after candid discussion in SRP-SREP dialogue.

One of the most frequent reports related to Basel II is Stress Test. A report of such importance loses value when it is submitted so soon after the previous one because three months time is a small window to see material change in the variables. Even the variables are tested with unrealistic shocks keeping other variables constant. There are three types of shocks- minor, moderate and major. A combined shock should be applied to see realistic result of the bank's sustainability rather than applying an extreme shock with keeping all other things constant. So stress test should be a "scenario analysis" rather than a "what if analysis". It will become very complex but very realistic than current stress test measure.

I was pessimistic about the minimum 10% CAR on total capital at first, thinking it might not be enough to cover the major risks mentioned in Basel II. But 10% of RWA is a huge amount of money and will safeguard a bank. BBL has a Total Eligible Capital of BDT

13,273,968,154, which is BDT 2,122,798,884 higher than required capital of BDT 11,151,169,270. BRAC Bank is ranked second in the banking industry in terms of risk taking (because of large SME exposure and Unsecured Loan disbursements to Agriculture, women entrepreneur and other sectors) right after ICB Islami Bank and if BBL can maintain CAR ratio above minimum, then everyone else should be able to do it. According to the BB press release, 31 out of 47 banks in Bangladesh had adequate capital as on June, 2011. 28 out of 30 commercial banks had more than 10% CAR ratio (Premier Bank and ICB Islami Bank did not meet the CAR requirement) (Ahmed, 2011)³³.

Even though Banks are following the major guidelines from BB, it will still take 2-3 years to fully adopt the minor and advanced requirements of Basel II. Banks and BB are taking steps slowly to reach full implementation goal.

³³ Ahmed, M., 2011. Banking sector is in strong position regards to capital adequacy. *Prothom Alo*, 14 Sep. p14bc.

7. Conclusion

The international community is now recognizing the importance of effective supervision of banking industry because if this industry is left to act on its own, it can take down the global economy. Basel III is in the making where banks must follow stricter policies and report to the proper authority in more rigor and transparency. Basel II in our country is being followed with enthusiasm and BBL SRP team is gracefully taking every effort to implement Basel II in the bank. Theoretically the 10% CAR should be enough for banks to be shock resilient and fend off adverse business environment in Bangladesh. It remains to be seen in real world whether the adequate capital can save a bank or not. Still there is no harm in maintaining the eligible capital as per BB guidelines and be prepared for any economic disaster. Prevention is better than cure- a proverb the rest of the world is pondering about now.

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Appendix 1

The Balance Sheet items and their recommended weights for Credit Risk calculation are listed below:

Sl.	Exposure Type	BB rating grade	Risk Weight
01	Cash		0%
02	Claims on Bangladesh Government and Bangladesh Bank		0%
03	Claims on Other Sovereigns and Central Banks		0%
04	Claims on Bank for International Settlements, International Monetary Fund and European Central Bank		0%
05	Claims on Multilateral Development Banks (MDBs)		
	i) IBRD, IFC, ADB, AfDB, EBRD, IADB, EIB, EIF, NIB, CDB, IDB, CEDB		0%
	ii) Other MDBS	1	20%
		2,3	50%
		4,5	100%
		6	150%
		Unrated	50%
06	Claims on Public Sector Entities (other than Government) in Bangladesh	1	20%
		2,3	50%
		4,5	100%
		6	150%
		Unrated	50%
07	Claims on Banks and NBFI:		
	i) Original Maturity over 3 months	1	20%
		2,3	50%
		4,5	100%
		6	150%
		Unrated	100%
	ii) Original Maturity less than 3 months		20%
08	Claims on Corporate (including equity exposure)	1	20%
		2	50%
		3,4	100%
		5,6	150%
		Unrated	125%

Appendix 2

Loans and Advances, investment and other asset portfolio exposure and their recommended risk weights for Credit Risk calculation are given below (Fixed Risk Weight Group):

Sl.	Exposure Type	Risk Weight
01	Claims Categorized as retail portfolio & Small Enterprise (excluding consumer loan)	75%
02	Consumer loan	100%
03	Claims fully secured by residential property	50%
04	Claims fully secured by commercial real estate	100%
05	5.1 Past Due Claims (Risk weights are to be assigned net of specific provision):	
	Where specific provisions are less than 20 percent of the outstanding amount of the past due claims	150%
	Where specific provisions are no less than 20 percent of the outstanding amount of the past due claims	100%
	Where specific provisions are more than 50 percent of the outstanding amount of the past due claims	50%
	5.2 Claims fully secured against residential property that are past due for more than 90 days and /or impaired specific provision held there-against is more than 20% of outstanding amount	100%
	5.3 Loans and Claims fully secured against residential property that are past due for more than 90 days and /or impaired specific provision held there-against is more than 20% of outstanding amount	75%
06	Capital Market Exposure	125%
07	Unlisted equity investments and regulatory capital instruments issued by other banks (other than those deducted from capital) held in banking book	125%
08	Investments in venture capital	150%
09	Investments in premises, plant and equipment and all other fixed assets	100%
10	Claims on all fixed assets under operating lease	100%
11	All other assets	
	11.1 Claims on GOB & BB (e.g. Advance income tax, reimbursement of patirakha/shadharan shanchay patra, etc)	0%
	11.2 Staff loans/Investment	20%
	11.3 Cash items in process of collection	20%
	11.4 Claims on Off-shore Banking Units (OBU)	100%
	11.5 Other assets (Not specified above)(net off specific provision, if any)	100%