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THE NEW BASEL-III CAPITAL ACCORD: CAPABILITY OF THE BANKS IN ADAPTING AND ADOPTING THE NEW REGIME IN BANGLADESH

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ABSTRACT

The paper aims to explore a comprehensive understanding and grab the concept about transition of second accord of Basel norms to the subsequent regulation i.e. Basel III and to study whether the effects are favorable or adverse for banks to comply with Basel-III norms effectively. The major concern for the banking sector of Bangladesh is that implementation of Basel III will cause banks to raise capital appreciably and thus strengthen their existing capital formation. In recent economic scenarios, banking business is found highly exposed to risks and capital been aligned with risks and has got more importance in this connection. The focus of this paper is on the practice and adoption of international practices for capital measurement namely Basel regime; transition of Basel II to Basel III framework in Bangladesh to examine the changes that commercial banks have to go through in terms of capacity building to follow, adopt and comply with this new regulation. This paper investigates the issues, challenges and implication of Basel III implementation in Bangladesh. To achieve the objectives of the study, data have been collected from secondary sources only. Secondary data have been taken from different publications, annual reports of Bangladesh Bank, articles on newspapers etc. According to The findings of the study, The CRAR of banking industry shows a negative trend in first three years (2015, 2016, and 2017) of the 05 years transitional implementation plan of Basel 3 regime as set by Bangladesh bank. Aggregate CRAR maintained by all banks in the industry was 10.84 percent, 10.80 percent and 10.80 percent in 2015, 2016 and 2017 respectively. Thus, it gives a clear picture that adoption of new regulations caused a significant change in capital position of the banking industry and it has been in decreasing trend which puts extra pressure on banking sector, regulators and the economy towards the achievement of a sustained, resilient and stable capital management of banks under Basel III.

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INTRODUCTION

Regulatory capital /capital adequacy refers to the amount of capital a bank needs to maintain as required by the regulator and usually expressed as a ratio that must be held as a percentage of Risk-Weighted Assets. Basel II required banks to maintain total capital ratio of no lower than 10% which has been increased to 12.50% (10% MCR + 2.5% CCB) in Basel-III with an inclusion of 2.50% CCB in addition to the minimum requirement of 10%.

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The Capital Adequacy is a Framework regarding regulatory capital adequacy ratio at which banks are required to operate. The framework has been developed by the Basel Committee on Banking Supervision (BCBS).The Basel accords on capital management of the bank are formulated by the BCBS in association with the patronage of the Bank for International Settlements situated at Basel, Switzerland. This Committee of Basel began its journey in 1974 in the event of liquidation of a German based bank named Herstatt Bank that faced a severe settlement risk in international finance and went bankrupt. Three versions of the accords have been published so far but the final or the third accords brought a significant change in

overall capital management concept and result in a challenge for the banks to adopt with these rules.

Concepts of Basel III

"Basel III (The 3rd Basel accords)- A global regulatory framework for more resilient banks and banking systems" (known as Basel III capital regulations) issued in December 2010 with the intention of gradual implementation from January 01, 2013 to January 2019.

"Guidelines on Risk Based Capital Adequacy –Revised Regulatory Capital Framework for banks in line with Basel-III" has been enacted by Bangladesh bank 02 December 21, 2014 for implementation from 01 January, 2015 to December 2019.

Transitional arrangements: The following are the time frames for implementation of Basel 3 in Bangladesh. This has been designed to allow the banks to cope up with the new capital requirement and increase the capability in line so that the new regulation does not create panic or burden on the banks. This transitional arrangement focused on some deductions and adjustments which if made mandatory in one year or shortest time frame it would reduce the capital position of the banks drastically and hinder the implementation process. The five years phase in plan prescribed by Bangladesh bank for implementation of Basel 3 has been shown in table 1 (Basel 3 transitional plan):

BASEL-III: The new Basel-III global regulatory framework mainly focused the following areas:

- Revised Minimum Equity and T-1 capital requirements (Raise the level and quality of Capital)
- Better capital quality
- Short term and Long term Liquidity Standard (Introduced new Liquidity Ratio)
  - ✓ LCR (Liquidity Coverage Ratio)
  - ✓ NSFR(Net Stable Funding Ratio)
- Counter Cyclical Buffer
- Capital Conservation Buffer
- Systemic risk and interconnectedness
- Leverage Ratio

$$\frac{\text{Tier- I Capital}}{\text{Total Assets (On \& Off Balance Sheet)}} \geq 100$$

Basel-III considered three risk areas as was in the previous version (Basel II) which as follows:

- Credit Risk
- Market Risk
- Operational Risk

Basel III also continued with the 3 pillars concept adopted in previous rules comprising the following pillars:

- Pillar 1: Minimum Capital Requirement (MCR)
- Pillar 2: Supervisory Review Process (SRP)
- Pillar 3: Market Discipline (Disclosure requirements)

Pillar-I: Minimum capital requirements: The Pillar 1 determines the minimum standard capital needed for the banks as regulatory requirement for credit risk, market risk and operational risk at 10% of its risk weighted assets against the risks. For determining this requirement, bank considers three risks -credit risk, market risk and operational risk.

Credit risk: Credit risk is the possibility that a counter party will fail to meet his/her obligation in accordance with agreed terms.

Market risk: This risk arises from market volatility in banking investments. Market risks comprise-

- Interest rate risks
- Equity position risks
- Foreign exchange risks
- Commodity price risk

Operational risk: It is defined as the risks of losses resulting from inadequate or failed internal processes, people in system from external events.

The Pillar 2 deals with risks not covered under pillar 1 by developing an Internal Capital Adequacy Assessment Process (ICAAP) covering the entire risk profiles of the bank. Pillar 2 determines additional capital requirement of the banks for all such risks.

The Pillar 3 focuses on the public disclosures of the banks on the issues relating to the risk and capital management. It aims to allow the markets to monitor the operation and financial activities of the banks and ensures discipline in the banking business. Thus markets responsiveness force banks on accountability, responsibility and compliance issues.

Capital structure of third Basel accords (Basel-III): Regulatory Capital in Basel 3 consists of the following components-

The Tier-1 Capital: The first Tier Capital (Tier-1) has been termed as Going-concern capital as it consists of the capital which can absorb losses without triggering bankruptcy of the bank. Tier- 1 capital has been segregated into two categories which are:

a) Common Equity Tier 1 (CET-1) b) Additional Tier 1 (AT-1)

Tier 2 Capital (gone-concern capital): Gone-concern capital (Tier-2 capital) is the capital which will absorb losses only in a situation of liquidation of the bank

Components of different tiers of capital under Basel III are given below:

Common Equity Tier 1 Capital

Common Equity Tier 1 (CET1) capital shall consist of sum of the following items:

- Paid up capital
- Non-repayable share premium account
- Statutory reserve
- General reserve

- Retained earnings
- Dividend equalization reserve
- Minority interest in subsidiaries

The newly added Capital under Tier-1 namely the Additional Tier 1 or AT-1

For banks in Bangladesh especially the domestically owned banks can treat the below mentioned capital under Additional Tier 1 (AT1):

- Any Instrument (Bond, debenture, preference share) issued by banks as per the criteria specified for AT 1 in guidelines of Bangladesh bank
- Minority Interest i.e. Any instrument under AT1 if issued by subsidiaries of the banks and owned by parties other than the parent banks (such capital computation will be applicable only for consolidated reporting)

The second Tier or Tier 2 Capital

Bangladeshi local banks can treat the following items as component of capital under Tier 2:

- Provisions maintained in general against the unclassified loans;
- Subordinated bond issued by banks to support Tier 2 capital in accordance with the criteria set in BB guidelines regarding such issuance
- Minority Interest i.e. Any such debt under the criteria of BB for tier 2 capital issued by the subsidiaries of the banks and owned by third parties other than the banks themselves.

This paper has investigated the changes made in Basel 3 accords over the previous version and observed the pattern of changes banking industry is going through in adapting the new requirements. The main focus of this paper is to analyze and evaluate the financial health and stability of the banking industry during the transition period and to find out the shortcomings/drawbacks of the banks in complying the new capital rules. Whether the banks are moving towards the right directions in fulfillment of the new rules? What are the constraints of the banks in following the new regime in terms of resources, capability and regulatory support? This paper intended to explore the answer of all these questions.

The paper has been organized in the following way: section 2 presents the background relating the Basel accords and the related changes section 3 describes the relevant literature reviewed in making the paper, the implications of Basel III rules over Basel II has been portrayed in section 4 and section 5 wraps up the findings of the study along with concluding remarks.

Literature Review

The financial crisis 2007-2008 and its consequences have knocked the Bank for International Settlements (BIS, 2010c) towards the inception of Basel III. The new accords focused on the banking system resilience along with a shock absorbent capacity to survive and sustain even in stressed financial conditions.

On September 12, 2010, the Basel Committee for Banking Supervision (BCBS) ratified and specified details regarding capital requirements and the phase in arrangements for adaptation and adoption of the new regulation. Allen, Kunt, Klapper & Peria (2012) showed that Basel III might cause a decrease in credit supply. The reason of such consequence is not the higher capital requirement only rather the interconnectedness and systemic risks in the banking industry. Yan, Hall & Turner (2012) while working on cost-benefit effects of Basel III rules in UK in longer term found more capital amount of 10 percent in CET 1 for the assets after assigning risk weight against 7 percent requirement in Basel 3 and showed positive effect on the UK economy. They also showed a positive benefit in terms of liquidity standards in respect to Basel III regime. Through (2010d) a quantitative impact study (QIS) conducted by BIS and another study conducted by the Committee of European Banking Supervisors (CEBS, 2010) determined that banks need to build increased capital base under Basel 3. The BIS study for banks in 23 affiliations in different parts of the world, and the CEBS study were for 19 countries in European region. Wignall & Atkinson (2010) showed their doubt regarding the outcome of Basel-III. They believe from their identification that banking business usually can be able to control significant equity increase in addition to the amount it maintained in pre-financial crisis of 2008. Besides, slow implementation through phase in arrangements in 05 years (from 2015-2019) seems to be late and might bring a change to the definition of capital within this long transitional period.

The BIS (CEBS) predicted a fall of CET-1 ratio to 5.7 percent from 11.1 percent after introduction of Basel III norms. Such decline in capital happens due to the deductions of few components from capital composition and for changes in risk-weighted assets. Incremental requirement of capital affect the leverage condition and put banks into the risk of distress (Admati, DeMarzo, Hellwig, & Pfleiderer, 2010). BIS vide 2010b and Angelini, Clerc, Curdia, Gambacorta, Gerali, Locarno, Motto, Roger, Huevel & Vicek, (2011) opined that The Basel 3 rules with higher capital requirement could be costly for banks to implement. More requirements of capital pushes the loans cost up which, contrary to the Modigliani-Miller (1958) Theorem, if there exist net cost of capital after adjusting deposits cost. Thus, injecting more equity capital could affect the price of lending and diminish loan growth (Cosimano and Hakura, 2011). Increasing requirement of capital might constrain credit availability and accessibility in the economy (Dep't of the Treasury, Principles for Reforming the U.S. and International Regulatory Capital Framework for Banking Firms (Sept. 3, 2009). As opined in BASEL II, *supra* note 25, risks involved in banking activities from different aspects i.e. projected, unforeseen, and undefined, pushes banks to maintain more capital to protect unforeseen losses and to ensure sustained operating activities. Regulatory capital works as guarantee and symbol of confidence to all the major stakeholders of the banks specially the creditors, deposit holders and business partners regarding the soundness of the banks as well as the safety of their respective claims. Thus regulatory capital has been brought as a yardstick of central banking monitoring. Such initiatives by central bank works as cushion against all the losses banks incur and protect the interest of the major stakeholders in case of bank run due to the default of debtors/borrowers (Capital Adequacy Standards: A Legitimate Regulatory Concern for Prudential Supervision of Banking Activities, 1305–06 (1989) & BASEL comm. on

banking supervision, consultative document—strengthening the resilience of the banking sector 1–2 (Dec. 2009). The major concern and focus of Basel III on the capital in both qualitative and quantitative aspects to ensure resilient and sustained financial sectors in the long run. Although Basel III can't give the assurance regarding the happening of any crisis in future solely by the new rules; rather it showed a way of preventing stressed conditions. However, it is clear that the risk dynamics and resilience of banks will be improved and strengthened in this new Basel regime (Rashid & Islam, 2015). The major concern for banks in adopting Basel 3 lies on the management of Risk Weighted Assets, Liquidity standards (LCR & NSFR) along with the prevailing liquidity requirements of CRR & SLR. If liquid funds in SLR are not allowed by central bank to consider as liquid assets, banks will face a difficulty in maintaining liquidity ratio as per regulatory requirement (Jafrin, 2014).

Objectives

The broad objective of this study is to examine the reforms made in the Basel 3 rules regarding capital requirement of banks and to explore whether the financial implications of the reforms in the banking industry will be conducive and fruitful or not in terms of capital management and sustained banking business. For fulfillment of the objective of this study, the specific objectives mentioned below are being performed:

- To see the current state of capital position maintained by banking sector
- To review the pre and post changes in Basel 3 norms
- To analyze and portray the capital management of the banking system in Bangladesh before and after implementation of the new Basel-III norms
- To identify the challenging areas for banking industry for implementation of the Basel-III norms in Bangladesh
- To suggest few recommendations based on study findings

MATERIALS AND METHODS

The study has been performed to evaluate the capacity and capability of the banking sector in Bangladesh towards the compliance, adoption and adaptation of the new Basel 3 rules. To achieve the objectives of the study, data have been used from secondary sources only. Alongside the secondary sources, opinions of some banking experts (received through telephone interviews) have been used as primary source. Secondary data have been collected from different publications, annual reports of Bangladesh Bank, articles on newspapers, relevant articles, websites and the financial stability assessment reports of Bangladesh bank. This paper has covered the prevailing financial position of the banking industry, with focus on the capital condition and the phase in implementation of Basel –III, to make the analysis more meaningful, comprehensive and logical. However, secondary data have been handled carefully prior to using to make sure the relevance, accuracy and synergy of data with the output. Finally data were analyzed based on the qualitative judgment; trend of performance and the present state of the financial stability in the banking sector to supplement the findings and arrive at a meaningful conclusion. The study is basically qualitative and explanatory.

Overview on Basel Rules & Regulations (Global and Domestic)

The Basel accords are the recommendations for banking regulation prescribed by Basel Committee on Banking Supervision (BCBS) a wing of Bank for International Settlement (BIS) based in Switzerland. The name of the accord is given by the name of the city Basel as BCBS maintains its secretariat at the BIS situated in Basel, Switzerland. The Basel accord determines the framework for measuring adequate capital and a minimum capital management standard to be achieved by banks in adopting countries across the world. Basel I (The first Basel Accords) was issued in 1988 focusing only credit risk. Under Basel 1: bank's assets were classified and divided into five broad categories based on credit risk assigning risk weights of 0% (Cash, Treasury instruments), 10, 20, 50 and100% and rating of clients was not considered. Banks required keeping capital equal to 8% against the Risk-Weighted Assets (RWA) of which 4% in Tier I Capital comprising paid up capital, retained earnings etc. Later on in 1996, market risk was incorporated in capital computation procedure under Basel 1. But Basel 1 failed to ensure proper capital management of the banks because of its excessive focus on credit risks only and ignoring all other risks of the banks. Besides, in credit risk computation use of one size fits all i.e. use of same risk weight for clients with different risk profiles made it almost ineffective.

Basel II (the second Basel Accords) published in June 2004 was a reform of Basel 1. This new policy statement tried to overcome the limitations of the first Basel accord and introduced the three pillar (Pillar 1: MCR, pillar 2: SRP and Pillar 3: Market Discipline) concepts. Basel-II aimed to enhance the resilience of the financial system, ensure safety and soundness of banking operation. It has incorporated new dimensions under market risk and introduced operational risk for the first time in capital computation of banks. Under credit risk, rating of clients have been introduced to assign different risk weights for clients with different risk profiles to make sure that quality of assets are segregated in the way they actually are and thus help banks to determine the assets that leads to high risk and thus requires more capital. In addition to this, few other risks have been identified as material in the context of risk of the banks under pillar 2 which requires banks to maintain additional capital and maintain the adequate capital level I line with the risks associated in the business. Basel 2 thus brings the risk management into consideration and aligned it with the capital management of the banks which strengthened the capital base and the resilience of the banks

Capital structure under Basel-II: Regulatory Capital is composed of:

- Tier-1 or Core capital
- Tier-2 or Supplementary Capital
- Tier-3 or Additional Supplementary Capital iv) CAR = Eligible Regulatory Capital/RWA

Bangladesh Bank (BB) introduced Risk-Based Capital Adequacy (RBCA) for banks in line with the Basel-II accords in 2009. The Basel-II came fully into force from January 2010 as a regulatory compliance after one-year parallel run with the Basel-I. Banks to enable the banking system to cope up with the new rules.

Table 1. Capital Construction

Capital construction	BASEL-II	BASEL-III
Composition of Capital	Tier-I Capital	Common Equity Tier-I Capital Additional Tier-I Capital
	Tier-2 capital	Tier-2 capital
	Tier-3 Capital	Eliminated

Source: Bangladesh Bank

Table 2. Areas Covered in Basel II & III

Areas covered	BASEL-II	BASEL-III
Tier-I Capital	5 % of total RWA	6 % of total RWA (4.5% in CET-1 + 1.50% in AT-1)
Tier-2 capital	5 % of total RWA	4 % of total RWA
Tier-3 Capital	-	Eliminated
Total capital	10% of RWA	10% of RWA
Capital Conservation Buffer	Did not exist	To be maintained at 2.5% against the RWA in CET-1
Total capital requirement	10% of RWA	12.50% (10% of RWA+ 2.50% CCB)

Source: Bangladesh Bank

Table 3. Areas Covered in Basel II & III

Areas covered	BASEL-II	BASEL-III
Tier-I Capital	5 % of total RWA	At least 6 % of total RWA
Tier-2 capital	5 % of total RWA	4 % of total RWA
Tier-3 Capital	Only for market risk	Eliminated
Total capital	10%	10%
Capital Conservation Buffer	Did not exist	2.5% of RWA to be maintained in CET-1 form
Capital Conservation Buffer	Did not exist	Ranging from 0-2.5% of RWA
Total capital requirement	10%	10% +(0-2.5%)

Source: Bangladesh Bank

Besides, Minimum Capital Requirement (MCR) was allowed to be, implemented in three phases: maintained MCR at 8 per cent up to 2008, 9 per cent up to 2009 and 10 per cent from, 2010 and onward. Major reasons of the 2007-2008 financial crisis includes:; Excessive on and off-balance sheet leverage, Erosion of level and quality of capital base, Inadequate liquidity position The banking system failed to absorb the resulting Credit losses, the market lost confidence in the solvency and liquidity of many banking institutions and thus the weaknesses in the banking sector rapidly transmitted to the rest of the financial system and resulting in a massive contraction of liquidity and credit availability. After the global financial crisis in 2007-2008, the Basel Committee on Banking Supervision (BCBS) issued "Basel III: A global regulatory framework for more resilient banks and banking systems" in December 2010 to strengthen capital and liquidity rules for a more resilient banking sector with special focus on liquidity risk assessment and monitoring, improved risk management, governance as well as banks' transparency and disclosures and prescribed a transition period for the full fledged implementation. Bangladesh has entered into the Basel III regime from January 01, 2015 through the issue of "Revised Regulatory Capital Framework for banks in line with Basel-III" by the central bank 21st of December in 2014. Basel III will be implemented in Bangladesh from January, 2015 to December 2019. The framework has been aimed to ensure more resilient banking system, strong liquidity buffer, better capital quality, and a more accurate assessment and management of risks. The new Basel III accord will have significant effects on global and local banking systems and also on economies

Changes in Basel III

Basel III put emphasis on two sets of compliance- i. Capital (minimum level of capital adequacy) and ii. Liquidity (minimum level of liquidity).

Split in capital composition: Basel III segregated the three tier components in Basel II into two parts: 1) Tier 1 capital (Going concern capital) 2) Tier 2 capital (Gone concern capital) and abolished the Tier 3 capital that was considered as capital under Basel II. Besides, Tier 1 capital has been divided into two parts based on the quality, nature and holding pattern of capital with major focus on the more permanent type of capital under CET 1 and introduced a new Additional Tier 1 capital comprising a near permanent nature funds that banks collect from different sources by issuing instruments.

Increased Requirement of MCR with: In addition to the changes in capital composition, segregation of capital structure into two parts, improvement in the quality of capital, Basel III incorporates a capital conservation buffer of 2.5% that banks will be required to maintain above the minimum capital requirement. This buffer has to be maintained in Common Equity Tier 1 (CET-1) capital after meeting the 6 % Tier 1 (4.5% of CET-1 + 1.5% of AT-1) and minimum 10% total capital requirements. The conservation buffer has been introduced to strengthen the capital base of the banks and to ensure that banks maintain the level of capital that may work as a cushion and absorb the losses of financial and economic events in stressed conditions.

Maintaining Liquidity ratios: Another aspect Basel III put emphasis on is strengthening the liquidity of the banking industry. As such, two liquidity standards have been introduced. LCR (Liquidity Coverage ratio) focuses that a bank maintains high-quality liquid assets as mentioned in the regulatory guidelines at an adequate level and those liquid assets should be easily convertible into cash to meet liquidity requirement in 30 day period. NSFR or Net Stable Funding Ratio aims to lessen and curb the banks dependence on short-term wholesale funding at the time of excess liquidity and enhance better liquidity risk assessment and management in long term time horizon of one year.

Table 4. Areas Covered in Basel II & III

Areas covered	BASEL-II	BASEL-III
Liquidity Coverage Ratio (LCR)	Did not exist	Introduced to strengthen short term (30 days stressed period) liquidity Available High Quality Liquid Assets > 100% Total net cash outflows over the next 30 calendar days
Net Stable Funding Ratio (NSFR)	Did not exist	Introduced to strengthen long term (1 year time horizon) liquidity Available Net Stable Fund > 100 Required Net Stable Fund

Source: Bangladesh Bank

Table 5. Areas Covered in Basel II & III

Areas covered	BASEL-II	BASEL-III
Leverage Ratio	Did not exist	At the rate of 3% Tier-I Capital (After deductions) Total Exposures (After Deductions)

Source: Bangladesh Bank

Table 6. Trends of CRAR Maintained by Different Types of Banks

Types of banks	Under Basel 2					Under Basel 3			
	2009	2010	2011	2012	2013	2014	2015	2016	2017
SCBs	9.0	8.9	11.7	8.1	10.8	8.3	6.4	5.9	5.04
DFIs	0.4	-7.3	-4.5	-7.8	-9.7	-17.30	-32.00	-33.70	-35.45
PCBs	12.1	10.1	11.5	11.4	12.6	12.5	12.4	12.4	12.52
FCBs	28.1	15.6	21.0	20.6	20.2	22.6	25.6	25.4	24.90
Total	11.6	9.3	11.4	10.5	11.5	11.3	10.84	10.8	10.8

Source: Bangladesh Bank

Leverage ratio: 2007-08 financial crises experienced bad instances in the banking sector for the overuse of leverage for both on and off-balance sheet exposures. The leverage ratio has been intr4oduced as a non risk based measure to maintain the proportion of Tier 1 capital after all regulatory adjustments as applicable) against the total exposures of the bank (On & off balance sheet exposures after deduction of regulatory adjustments)). Leverage ratio is to be maintained at 3% as per regulatory requirement.

Overview of Banking Industry in Bangladesh: The market size of banking sector can be determined based on transaction volume, number of customers, size of balance sheet, amount of loans and Advances, collection of deposits, revenue earned, Number of employees, networking in the form of branch dispersion, coverage of operational activities etc. Banking sector has been playing a significant role in economic development of the country. Information of the Banking system structure has been shown in Table 8 (appendix).

Banking Sector Performance: In 2016, the percentage of share of the total assets the SCBs held 27.60 which were 27.53 percent in 2015. PCBs' share increased from 64.50 percent in 2015 to 65.02 percent in 2016. The FCBs held 4.80 percent in 2016 i.e. declined over the period. The DFIs' held 2.58 percent of the total assets in 2016 which was 2.82 percent in 2015. The performance of the banking sector has been shown in Table 9 (appendix).

Profitability in Banking Industry: There exist a number of indicators to measure earnings and profitability of the banks like Return on assets (ROA), Return on Equity (ROE) and Net Interest Margin (NIM). Earnings in the form of ROA and ROE differ among banks in the industry. According to the annual reports of BB, the ROA of the SCBs and DFIs found negative quiet lower than the average position in the industry. PCBs achieved a consistent ROA till 2010, but it showed a downward trend in the year 2011 & 2012 due to a significant decline in net profit. However, it recovered the situation and increased ROA in subsequent years. ROA of FCBs' showed strong position in all the ears since 2009 except in 2014. Combined NIM stood at BDT 328.66 billion in the banking industry which increased substantially from BDT 292.90 billion in 2015 and it stood at BDT 165.42 billion at the end of June 2017. The profitability position of banks by type of banks has been portrayed in Table 10 (appendix).

Analysis of Capital Position of Banking Industry in Bangladesh under Basel 2 & 3: In view of the upcoming challenges mentioned above in terms of the new capital composition, increased capital requirement, liquidity position and a leverage banks need to be responsive in risk identification, assessment, analysis and the risk management activities. Liquidity management will become significant to avoid liquidity problem that may affect solvency of banks and thus can spillover to the entire economy. In Bangladesh, Under the Basel-II rules banks maintained the Minimum Capital Requirement (MCR) within the conditions of 10 % of the Risk Weighted Assets (RWA) or BDT. 4.0 billion, whichever is higher. During Basel-II regime during 2009 to 2014 tenure, most of the banks excepting state-owned commercial Banks could maintain minimum CAR. Foreign commercial banks always maintained CAR at satisfactory level. However, average CAR (Capital Adequacy Ratio) of private commercial banks was at around 12.5 % as on December 31, 2014. After the inception of Basel-III from January, 2015 the above scenario changed abruptly and on June, 2015 CRAR (Capital to Risk Weighted Assets Ratio) position of private commercial banks dropped to 11.80 %. In overall banking industry CAR was at 11.30 percent as on December, 2014 which dropped to 10.30 % on June 2015.

The trend of changes in CRAR maintained by banks and the entire banking industries are as follows:

In Basel-III rules, banks operating in Bangladesh have to maintain the Minimum capital as the higher of the 10.0 percent

of the Risk Weighted Assets (RWA) or BDT 4.0 billion. The following information gives the picture and tre4nds of capital position maintained by the banks in Basel 2 regime & in first three years of transitional period under Basel 3 regimes:

From the above table it is seen that on 31 December 2016, the entire banking industry in SCBs, DFIs,, PCBs and FCBs category maintained CRAR of 5.86, -33.67, 12.36 and 25.37 percent respectively. The aggregate CRAR of banks was 10.80 percent in December 2016 and 10.84 percent in December 2015. The CRAR stood at 10.80 percent in December 2017. The CRAR of banking industry thus shows a negative trend in first three years (2015, 2016, and 2017) of the 05 years tenure transitional implementation plan of Basel 3 regime.

In December 2017, 48 out of 57 banks maintained CRARs at 10.0 percent or higher as per the requirement of Basel III capital framework. CRARs of 31 banks that manages around 68.00 percent assets of the total banking industry stood between 10-15 percent at end-December 2017. The banking sector aggregate CRAR stood at 10.8 percent. The ratio remained same compared to end-December 2016. On the other hand, Tier-1 capital ratio declined slightly from 7.9 percent of end-December 2016 to 7.5 percent at end-December 2017. Still, Tier-1 ratio was considerably higher than the minimum regulatory requirement of 6.0 percent. FCBs maintained higher CRAR while CRAR of the DFIs was negative as shown in the previous years. In December 2017, against the regulatory requirement of 11.25 percent (at 0.625% CCB in 04 years from 2015-2019), of the total 57 banks, 46 banks maintained minimum as well as the conservation buffer capital requirement.

During the three years of Basel III regime (from 2015 to 2017), most of the banks complied with the minimum CRAR requirement as per BB guidelines except the state owned Commercial banks (SOCBs) and the DFIs. PCBs and FCBs have also achieved the requirement of CCB along with minimum CRAR but due to weak CRAR position of SCBs and negative CRAR of DFIs significantly decreased the aggregate CRAR position and fell short of regulatory total requirement of 11.25% including 1.25% as CCB.

More importantly, the existing level of capital being maintained by banks can only cover the MCR as per regulatory requirement under Pillar-1 determined against Credit, Market and Operational Risks. Under Pillar-2 i.e. Supervisory Review Process (SRP) banks need to determine additional capital for some other risks as identified by BB (risks not captured in calculation of RWA for MCR) to determine adequate capital of the bank. This adequate capital is the amount needs for the bank to absorb losses arising from overall business risks.

Challenges in Basel iii implementation in Bangladesh

Meeting Increased capital requirement: The set of Basel III reforms focused on regulatory capital. The Tier 1 capital, which includes common equity and Additional Tier-1 capital, increased from 5% to 6%. A capital conservation buffer (CCB) of 2.5% has also been included above the regulatory minimum requirement. Thus, MCR (Minimum Capital Requirement) has been in increasing trend due to the inclusion of CCB @ 0.625% every year during 2016 to 2019 transition period. As CCB has to be maintained in the form of CET-I Capital, CET 1 capital will increase to 8.50% (6% as Tier-I capital + 2.50% as CCB) in 2019. Thus, Minimum Capital Requirement (MCR) is subject to increase every year @ .625% from 2016 to 2019 due to inclusion of Capital Conservation Buffer (CCB) in Basel-III. The addition of CCB will increase capital requirement gradually to 10.625%, 11.25%, 11.875% and 12.50% in 2016, 2017, 2018 and 2019 respectively. Besides, failure to meet the minimum CET-1 of 7% restrain banks from distribution of dividends from profits i.e. 100% profit has to be retained until banks achieve the CET-1 which might affect dividend declaration and thus the share price of the banks.

Offsetting the decrease in Tier 2 capital composition: On the other hand, amount of Tier-II Capital to total capital brought down to 4% under Basel-III from the previous standard of 5% maintained in Basel-II. In Basel-II, Revaluation Reserves for Assets, Securities and Equities at the rate of 50%, 50% and 10% respectively were considered as capital under Tier-II. But in Basel-III, revaluation reserves have been brought under regulatory deductions and will be phased out in five years at 20% each year (capital considered from revaluation reserves has to be deducted @ 20% each year to phase this out from capital by 2019) which significantly reducing the amount of Tier-II capital and thus decreasing the total regulatory capital.

Maintaining adequate liquidity: Another Challenge Basel-III brings for banks in the Liquidity Frameworks. The global crisis necessitates the significance of liquidity management by banks. But holding strong liquidity position to maintain LCR (Liquidity Coverage Ratio) of at least 100% against the short term obligations to be met in 30 days and NSFR (Net Stable Funding Ratio) of more than 100% against the required stable funds in 1 year time horizon as prescribed by Bangladesh Bank, poses an additional burden on the banks in Bangladesh due to the holding of more liquid assets in addition to the existing liquidity assets kept in the form of CRR and SLR. Such liquid assets to be maintained in high quality liquid for might reduce the long term investment and lending which will affect credit growth and thus the profitability of the banks.

Managing regulatory leverage ratio: The pressing and innovative aspect that Basel-III brought is the incorporation of leverage ratio in the new accords. Leverage ratio has been introduced as a non risk based measure to refrain the banks from unusual increase of on and off balance sheet exposures by means of aligning the exposures with the capital base of the bank i.e. a cap of exposures has been set by this ratio for banks to reduce the excessive and uncontrolled leverage in the financial sector. Bangladesh Bank has suggested a ratio of above 3% primarily to be maintained as leverage ratio and cautiously monitoring the compliance trend of banks during transition period to determine the appropriate leverage ratio. Leverage ratio has tagged capital of better quality maintained with the total exposures (both on & off balance sheet) and thus fixed a cap ceiling of the business expansion that banks can make considering the existing capital strength.

Meeting Additional capital under Pillar 2 and the adequate capital: In addition to the minimum capital requirement under pillar-1, banks are also advised to assess additional capital requirement under Pillar 2 Basel III against 10 other risks. The amount of capital to be charged by the bank under pillar II as additional capital if requires 2% extra capital, this will definitely create a burden on the banks in capital management and in overall banking operations.

Risk Management: The most important issue or concern of Basel 3 is the risk management of banks. As capital has been aligned with the risks of the banks because requirement of capital is strongly linked with the level of risks in assets of the banks (capital to be maintained as % of Risk Weighted assets). Banks have to perform risk management activities properly so that risks are mitigated to an acceptable level and such mitigation of risks by effective assessment, analysis and monitoring can help banks achieve capital at the desired level. The above discussion can be wrapped up by the comments that capital has become the indispensible part of banking business as far as the new Basel rules is concerned and banks have to strengthen the capital base in any form to meet the requirement of regulatory capital, ensure smooth banking operations and achieve sustained growth.

FINDINGS

The above discussion and the data presented in support gives a clear idea regarding the future constraints and the problems of the banking industry in relation to the capital management under Basel 3. From this study and the associated data following are the findings that can be outlined as significant:

- Banks have to maintain a steady profit growth to ensure increase in retained earnings and thus in capital to remain Basel 3 compliant with more capital requirement.
- The increased capital requirement of banks under Basel III must be met by the banks from a few options available like by raising equity from issuance of shares (which is both costly and difficult), increasing retained earnings by reducing dividends, controlling administrative costs or increasing profits from interest earnings.
- Banks can also achieve desired capital level by increasing earnings through charging higher interest against lending and offering lower rates to depositors/ creditors along with a substantial decrease in cost of fund.
- Banks can also issue debt instruments to get support under AT-1 and Tier-2 to fulfill capital requirement. But such debt instruments will be costly and can be used as temporary arrangement. Few banks have already issued subordinated bonds to get capital support and most of these debts are issue with a maturity period and considered as capital under Tier-2. Such arrangement to support increased capital requirement has become costly for the banks and increased the interest expenses reducing the net interest income and net income. Besides, a cap of the higher value of 33.33% of CET-1 or 1.5% of RWA is given for AT-1 and a cap of the higher value of 88.89% of CET-1 or 4% of RWA is given relating to the tier-2 capital computation which also confines the use of debt instruments in getting capital support.

Conclusions & Policy Recommendations

Conservation of Capital at adequate level has been given priority as a regulatory tool in order to ensure resilience of banking sector and to avoid systemic risk. Adoption of Basel III regime will likely to strengthen the capital and liquidity position of the banks in the long run. Compliance with Basel-III norms would requires a high level of capital for banks. The proposal of phases for implementation (already chalked out Bangladesh Bank from 2105 to 2019) could be designed in a way that ensures a hassle free and flexible adoption. Because for banks having inadequate resources (mostly the newly established banks) adoption of new Basel norms could result in a severe business disruption in terms of public confidence in case of failure in liquidity and capital management. Besides, State owned banks and some private commercials banks are also struggling with the capital management. In these circumstances, if the new rule applied, banks implementing the norms would need to maintain greater capital base as prescribed in new capital accords. Following are few recommendations that can be put in place in support of the findings of this study:-

- Banks should focus on quality of credit and should be cautious in borrower selection. Besides, while selecting borrower credit rating grade should be considered as material issue as it determines the Risks associated with the particular client. Borrowers with better credit rating grade requires less capital which help banks reduce RWA and thus to enhance capital level.
- Banks should strengthen risk management activities and set the risk profile in line with the capital base so that banking operations are conducted in such a way that exposes to risks to the level of capital and this will help maintain the capital in accordance with the requirement with the passage of time. In this connection, banks should follow Bangladesh bank's guidelines regarding the risk appetite (set a threshold of investment in sectors, entity, geographic region, instruments, other parameters based on profitability, growth, performance, capital and financial health) so that all risk areas are addressed cautiously and remain under close monitoring. Thus a significant improvement in asset quality will lessen the Risk Weighted Assets and strengthen the capital position.
- The most effective way of managing the increased capital requirement lies in the operating efficiency of the banks i.e. maintain quality of assets, proper portfolio diversification, risk assessment and mitigation etc. which will reduce the capital requirement of the banks by a significant decrease in Risk Weighted Asserts (RWA) and thus help maintain the capital at desired level even with the existing capital composition with few modifications.
- To address the challenges of Basel III and to ensure smooth capital management, bank has to either increase its capital position by injecting capital fund to its business or control its business operations- asset management, portfolio management, risk management etc. so that requirement of capital decreased to a reasonable level to comply the new Basel rules and maintain the capital at regulatory level.

From the above discussion regarding the changing rules in Basel-III raise the question whether the capital being maintained by the banks during Basel-II and in the first two years of Basel III regime is sufficient to comply with the full fledged Basel-III rules in 2020? The answer becomes difficult. Although most of the banks maintained required capital level in Basel-II, capital ratios have been found to show a lower trend in Basel-III. The findings has clearly discovered that transition from Basel II to Basel III rules has put banks on

stress in maintaining capital at regulatory level along with the CCB and therefore put banks into the challenge of enhancing capital position in the required level to comply the new capital framework in a comfortable manner.

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Appendix

Table 7. Transitional Plan of BB for Implementation off Basel 3 in Bangladesh

Areas of concern years of implementation	2015	2016	2017	2018	2019
Common Equity Tier-1 Capital	4.50%	4.50%	4.50%	4.50%	4.50%
Phase in adoption of Conservation Buffer of capital	-	0.625%	1.25%	1.875%	2.50%
Requirement of capital with CET-1 and Conservation Buffer	4. 50%	5.125%	5.75%	6.375%	7.00%
Requirement of Tier-1 Capital	5.50%	5.50%	6.00%	6.00%	6.00%
Total Capital requirement	10.00%	10.00%	10.00%	10.00%	10.00%
Total Capital with Conservation Buffer	10.00%	10.625%	11.25%	11.875%	12.50%
Phase-out plans of Tier 2 Revaluation Reserves (RR) against Fixed Assets, Securities held for trading and the gain from equity Securities	20%	40%	60%	80%	100%
Ratio to be maintained as Leverage	3%	3%	3%	Adjustment with the Pillar 1	
Newly introduced Liquidity Coverage Ratio (LCR) (From Sep.)	≥100%	≥100%	≥100%	≥100%	≥100%
Longer time liquidity tool ; Net Stable Funding Ratio (From Sep.)	> 100%	>100%	>100%	>100%	>100%

Source: Bangladesh Bank

Table 8. Information of the Structure of Banking System (June 2017)

(Billion BDT)

Bank type	Number of banks	Number of branches	Total assets	Share of industry Assets	Deposits	Share of deposits
SCBs	06	3713	3339.79	26.99	2654.14	28.31
DFIs	02	1407	313.49	2.53	263.58	2.81
PCBs	40	4529	8136.32	65.76	6080.05	64.85
FCBs	09	71	582.33	4.72	377.60.71	4.03
Total	57	9720	12371.94	100.0	9375.38	100.0

Source: Bangladesh Bank

Table 9. Banking Sector Performance

(Billion BDT)

	2015						2016					
Bank types	No. of banks	No. of branches	Total assets	Share of industry assets	Deposits	Share of deposits	No. of banks	No. of branches	Total assets	Share of Industry assets	Deposits	Share of deposits
SCBS	6	3690	2839.6	27.5	2254.8	28.44	6	3710	3209.5	27.6	2535.4	28.4
DFIS	2	1406	291.4	2.8	226.6	2.86	2	1407	299.5	2.6	249.4	2.8
PCBS	39	4226	6652.9	64.50	5110.4	64.46	40	4467	7560.0	65.0	5788.0	64.8
FCBS	9	75	530.8	5.2	336.8	4.25	9	70	557.6	4.8	361.1	4.0
Total	56	9397	10314.7	100.0	7928.6	100	57	9654	11626.6	100.0	8933.9	100.0

Source: Bangladesh Bank

Table 10. Trends of Profitability Ratio by Different Type of Banks

Bank types	ROA									ROE								
	2009	2010	2011	2012	2013	2014	2015	2016	2017 June	2009	2010	2011	2012	2013	2014	2015	2016	2017 June
SCBs	1.0	1.1	1.3	-0.56	0.59	-0.55	-0.04	-0.16	-0.63	26.2	18.4	19.7	-11.87	10.93	-13.46	-1.47	-6.02	-19.38
DFIs	0.4	0.2	0.1	0.06	-0.40	-0.68	-1.15	-2.80	-1.60	-171.7	-3.2	-0.9	-1.06	-5.81	-5.97	-5.79	-13.88	-8.14
PCBs	1.6	2.1	1.6	0.92	0.95	0.99	1.00	1.03	0.68	21.0	20.9	15.7	10.17	9.76	10.26	10.75	11.09	7.50
FCBs	3.2	2.9	3.2	3.27	2.98	3.38	2.92	2.56	2.15	22.4	17.0	16.6	17.29	16.93	17.67	14.59	13.08	10.81
Total	1.4	1.8	1.5	0.64	0.90	0.64	0.77	0.68	0.34	21.7	21.0	17.0	8.20	11.10	8.09	10.51	9.42	4.66

Source: Bangladesh Bank.

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