

Effectiveness of Macroprudential Policy in Bangladesh

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ABSTRACT

Macroprudential policies for achieving financial stability gained global attention of the government policy makers and economists after the global financial crisis (GFC). There are challenges in applying macroprudential policies because it is difficult to identify financial system's vulnerability early enough and also its effectiveness depends on financial structure, developments in the financial market as well as political and economic scenario of a country. Bangladesh Bank (BB), as central bank and monetary authority of the country, uses micro as well as macroprudential tools as complementary to monetary and exchange rate policies such as prudential regulations for consumer finance and small enterprise financing, provision against loans and advances, time-varying capital requirement and risk weights against various assets, open position limit etc. There appears to be a lack of dynamism in adopting key macroprudential tools to counter procyclical behavior of the banking sector, while lack of effective coordination between monetary policy measures and macroprudential tools was also observed. Macroprudential regulations of BB partially contributed to check overexposure of the banking sector to capital market at the cost of a sudden crash at the end of 2010, but failed to rein in excessive credit growth during 2010-12 and consumer credit growth during 2015-17. A reduction in provision for standard SME credit in 2012, supported growth in SME credit disbursement contributing to diversifying risks in the banking sector. Some relaxations in prudential norms for residential housing loans have positive impact on growing home loan.

JEL classification: G18, G21, G28, E58.

Keywords: Macroprudential policy, Systemic risk, Procyclicality, and Financial stability.

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I. INTRODUCTION

Macroprudential policy aims at limiting systemic or system-wide financial risk that can have serious consequences for the real economy. Although Macroprudential policies may intend to support growth at the time of downturn, often the focus of the policies is to discourage risky lending and excessive credit growth which could lead to imbalances in the financial system and thereby risking financial stability.

The term “macroprudential” has risen from virtual obscurity to extraordinary prominence following the recent global financial crisis (GFC), which revealed that price stability does not guarantee macroeconomic stability. Macroprudential policy instruments may include a range of constraints on leverage, credit disbursement and portfolio composition of financial intermediaries with the expectation that they could contain excessive risk taking by financial intermediaries as well as households.

According to Lim et al (2011) macroprudential policy instruments may be used to mitigate four broad categories of systemic risks: risk generated by strong credit growth, risk arising from excessive leverage, systemic liquidity risk and risk related to large and volatile capital flows. Macroprudential policy instruments may serve to safeguard individual institution at micro-level as well as financial system at macro-level, thereby reinforcing each other.

There are mainly two views of financial crises: endogenous-cycles view and exogenous shock view. The endogenous-cycle view (Minsky, 1992) says during economic prosperity financial institutions engage in riskier investments resulting in build-up of financial imbalances. On the other hand, exogenous-shock view assumes that a financial crisis occurs because of extensive financial distress caused by an exogenous shock i.e., oil prices shock, a shift in risk aversion and exchange rate preferences. The endogenous-cycle view gets priority in designing macroprudential tools towards achieving financial stability.

Emerging market central banks have a long history of using macroprudential instruments particularly since the Asian financial crisis. In the aftermath of the crisis central banks in the region deployed macroprudential tools to deal with the consequence of crisis and then to prevent vulnerabilities from building up again. Similarly, central banks in Latin America and other regions used macroprudential tools to prevent large swings in external financing from turning into domestic financial booms and busts.

Bangladesh Bank (BB) has a long history of using macroprudential policy to ensure sound lending practices in banking. However, the effectiveness of such macroprudential policy has seldom been examined. Researcher and academics have recently come forward to examine the effectiveness of macroprudential policy tools and regulations in the context of advanced and emerging market economies. In the context of Bangladesh, no significant work has been undertaken focusing on the effectiveness of macroprudential policies. This paper intends to fill up this void and shed some lights on the tools used by Bangladesh Bank and promote discussion for further study in this area.

II. OBJECTIVES OF THE STUDY

The study has two broad objectives:

- 2.1 To find out major macroprudential policy and tools used by Bangladesh Bank particularly in the banking sector of Bangladesh during 2010 to 2018.
- 2.2 To explore effectiveness of the macroprudential policy and tools in achieving intended goals.
- 2.3 To find out convergence and divergence between monetary policy and macroprudential policy.

The rest of the paper proceeds as follows: Section III describes methodology; Section IV discusses the literature on macroprudential policies and their implications. Section V discusses various macroprudential tools used in Bangladesh. Section VI presents analysis of the effectiveness of macroprudential policies in Bangladesh and Section VII concludes. The paper ends with policy recommendations at Section VII.

III. METHODOLOGY

This study examined macroprudential regulations and tools adopted and implemented by Bangladesh Bank during the period from 2010 to 2018 by going through various circulars, quarterly and annual reports of Bangladesh Bank.

Growth and trend analysis of related macroeconomic data such as consumer finance, SME credit, housing loan, total credit and advances in the banking sector were carried out to find out effectiveness of major macroprudential tools used and their implication.

A summary table showing countercyclical prudential regulations in terms varying risk weights for assets and provision requirement for standard assets during the period under review was constructed.

In order to find coordination between monetary policy and macroprudential policy stance as shown by Verma (2016) for India, BB's monetary policy stance was identified through distinct phases during 2010-18 and changes in monetary and macroprudential policy tools in Bangladesh during the period were shown.

For assessing effectiveness of BB's macroprudential policy in achieving underlying goals, this study used simple analysis of growth and trends in macroeconomic variables avoiding any complicated econometric models, which were still at a developing stage.

IV. LITERATURE REVIEW

The origin of the term “macroprudential” can be traced back to the late 70s (Clement, 2010). One of the major concerns at this time in the financial regulatory circles was the rapid growth of loans to developing countries and its potential negative impact on financial stability. In 1979, the term “macroprudential” was first introduced at a meeting in the Cooke Committee (the predecessor of the present Basel Committee on Banking Supervision, BCBS) to address the issue of international bank lending. After that the term “macroprudential” was introduced in a background document prepared by the Bank of England (1979), which says (BIS, 2010):

“Prudential measures are primarily concerned with sound banking practice and the protection of depositors at the level of the individual bank. Much work has been done in this area – which could be described as the ‘micro-prudential’ aspect of banking supervision. [...] However, this micro-prudential aspect may need to be matched by prudential considerations with a wider perspective. This ‘macro-prudential’ approach considers problems that bear upon the market as a whole as distinct from an individual bank, and which may not be obvious at the micro-prudential level.”

In the wake of Asian financial crisis (1997), a report of The International Monetary Fund (IMF, 1998) says:

“Effective bank supervision must be seen by banks as a continuous presence. This is mainly achieved through off-site monitoring, both micro- and macro-prudential in scope. [...] Macro-prudential analysis is based on market intelligence and macroeconomic information, and focuses on developments in important asset markets, other financial intermediaries, and macroeconomic developments and potential imbalances”

In October 2000, the General Manager of the BIS, Andrew Crockett, delivered a speech at the International Conference of Banking Supervisors contrasting the microprudential and macroprudential approaches to regulation and supervision and suggested that achieving financial stability called for a strengthening of the macroprudential perspective. Well before the subprime crisis, Borio and Lowe (2002a and b) suggested a combination of sustained rapid growth in credit and asset prices can indicate an impending financial crisis, and contended that the gap between the credit-to-GDP ratio and its trend is a key indicator of financial imbalances.

Kuttner & Shim (2012) by using various housing-related macroprudential measures for 57 advanced and emerging market economies for the period 1980–2011, found that LTV limits, reserve requirements and risk weights are quite effective in dampening growth in housing prices and housing credit. Similarly, Arregui et al (2013) found that these tools were effective in reducing credit growth and house price growth. Zhang & Zoli (2014) found that macroprudential policy has contributed in reducing credit growth in Asia. Particularly housing-related measures such as loan-to-value (LTV) ratios, debt-to-income (DTI) ratios, risk weights and loan loss provisions on mortgage loans were found to have a significant impact. Changes in reserve requirements and capital regulation were not found to have any significant effect on bank credit.

The IMF (2013) argues that monetary policy alone cannot achieve financial stability as the causes of financial instability may not always be related to the degree of liquidity in the system which monetary policy can fix. When financial distortions are more acute in some sectors of the economy than in others, as is often the case, monetary policy is a very blunt tool as it will also affect many sectors in an unintended manner

Claessens et al (2014) looked at 48 advanced economies and EMEs for 2000–2010 using bank level data and found that measures aimed at borrowers such as caps on DTI and LTV ratios and limits on credit growth and foreign currency lending are effective in reducing asset growth.

A BIS-coordinated research project by a group of Latin American central banks found that macroprudential measures tend to be more effective in dampening the credit cycle if accompanied by countercyclical monetary policy (Upper, 2017). A study by the Hong Kong Monetary Authority shows that loan-to-value ratios (LTVs) strengthened banks' resilience to property shocks even if they had limited impact on house prices themselves.

A large body of literatures exists in the global context studying the impact of macroprudential policies. Some are devoted to in the context of Asian economies too. Cerutti et al (2015), reporting data for 119 IMF member countries on the use of twelve types of macroprudential policies for the period 2000-13, conclude that an increasing trend is clearly visible for all with a tripling of the average number of measures used in Emerging Asia over the period and a doubling in low-income developing countries.

Bruno et al (2015), providing a comparative assessment of the effectiveness of macroprudential policies in 12 Asia-Pacific economies, find that banking sector capital flow management (CFM) polices and bond market CFM policies are effective in slowing down banking inflows and bond inflows, respectively. They also find that macroprudential policies are more pragmatic when they complement monetary policy by reinforcing monetary tightening, than when they act in opposite directions.

Malovaná & Frait (2016), using data for the Czech Republic and five euro area countries, show that monetary tightening has a negative impact on the credit-to-GDP ratio and the non-risk-weighted bank capital ratio, while these effects have strengthened considerably since mid-2011. To them, the effect of the higher bank capital ratio is associated with some degree of uncertainty and coordination of the two policies is necessary to avoid an undesirable policy mix preventing effective achievement of the main objectives in the two policy areas. Lee et al (2015), presenting an empirical framework for analyzing effectiveness of macroprudential policies in controlling credit growth, leverage growth, and housing price appreciation, find that macroprudential policies can promote financial stability in Asia.

Wang & Sun (2013), in the context of China, find that some macroprudential policy tools (e.g., the reserve requirement ratio and house-related policies) are useful, but they cannot guarantee protection against systemic risk in the prevailing economic and financial environment. To them, better-targeted macroprudential policies have greater potential to contain systemic risk pertaining to the different sizes of the banks and their location in regions with different levels of economic development.

Gomez et al (2017) found that, in case of Colombia which used countercyclical reserve requirement and dynamic provisioning scheme for commercial loans for 2006-09 employing loan account level data, aggregate macroprudential policy stance worked effectively in stabilizing credit cycles and in reducing bank risk-taking.

Erdem et al (2017) using data of 30 EMEs (including India) for 2000-13 and applying panel vector auto-regression (VAR) found that macroprudential policies are effective in limiting domestic credit growth especially during the expansion phase of the credit cycle. An aggregate macroprudential policy (MPP) index was constructed by Verma (2016) for Indian financial system using risk weights and provisioning for standard assets for housing, CRE, consumer loans, capital market and CRR and he found the impact of the Index on credit growth with a lag.

With the introduction of the countercyclical capital buffer in the Basel III framework, policymakers have been focusing on the credit gap more closely. Basel III has placed a prominent role on the credit-to-GDP gap to act as a signaling guide early warning indicator (EWI) for policymakers in setting the countercyclical capital buffers. The countercyclical capital buffer aims to ensure that banking sector capital requirements take account of the macro-financial environment in which banks operate.

According to Akhtaruzzaman (2017), Bangladesh used following macroprudential policy tools:

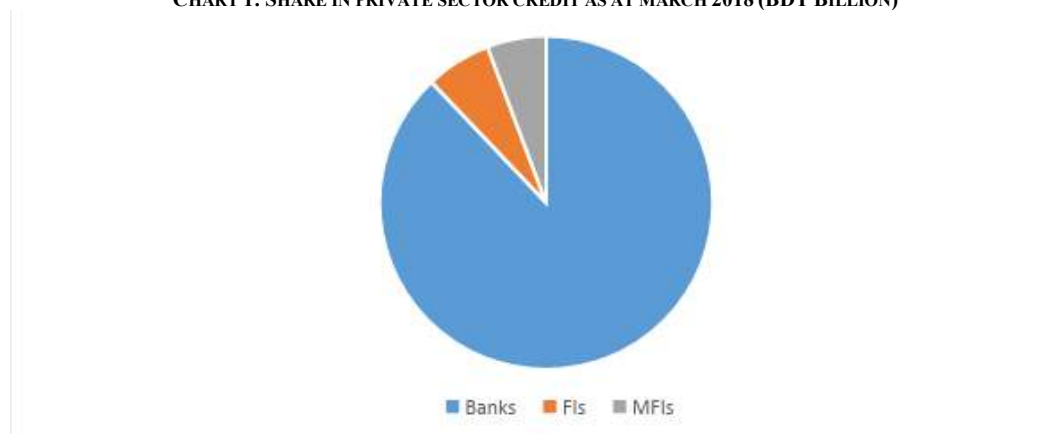
- i. Loan-to-value limits
- ii. Time varying reserve requirement (CRR and SLR)
- iii. Advance-to-deposit ratio (ADR) for banks
- iv. Cap on capital market exposure of banks
- v. Countercyclical capital buffer
- vi. Limits on net open currency position
- vii. Framework for identifying domestic systemically important banks
- viii. Identification of D-SIBs and imposition of surcharges on them
- ix. Resolution requirement (LOLR) and disclosure policy for D-SIBs

He also added some other initiatives in Bangladesh having macro-prudential focus are Central Database for Large Credit (CDLC) to prepare a Corporate Watch List, Systemic Risk Dashboard, working paper on Dynamic Provisioning, Interbank Transaction Matrix and Bank Health Index and HEAT Map.

V. MACROPRUDENTIAL REGULATIONS IN BANGLADESH

Bangladesh Bank Order 1972 allows Bangladesh Bank (BB) to serve as the macroprudential authority for banking and financial sectors. BB applies a number of macroprudential tools considering financial and business cycles of the country. Before discussing macroprudential regulations applicable to banks and financial institutions a brief introduction to financial system of Bangladesh may be pertinent. Financial system of Bangladesh consisted of six state owned commercial banks, two specialized banks (state owned), 41 domestic private sector banks (including Islamic banks), nine foreign banks, 5 non-scheduled banks and 34 Non-bank financial institutions (FIs) as of December 2018. The number of bank branches stood at 10,286 as of December 2018. Bangladesh Bank, the central bank, is the main regulator of banks and non-bank financial institutions. Besides, Bangladesh Securities & Exchange Commission (BSEC) regulates the banks and financial institutions that are listed on the two Stock Exchanges. Some banks and financial institutions also have subsidiary companies working as brokerages houses and merchant banks. Insurance industry of Bangladesh consists of 32 life insurance and 46 nonlife insurance companies that are regulated by Insurance Development and Regulatory Authority (IDRA). In Bangladesh there are also 806 microfinance institutions (MFIs) regulated by Microcredit Regulatory Authority (MRA). As of March 2018, share of banks, non-bank financial institutions (FIs) and microfinance institutions (MFIs) in total private sector credit are 88%, 6.3% and 5.7% respectively. Therefore, in studying macroprudential policy the banking sector has been focused.

CHART 1: SHARE IN PRIVATE SECTOR CREDIT AS AT MARCH 2018 (BDT BILLION)



Source: Bangladesh Bank,

Following Box contained a list of Macroprudential tools and regulation those currently are enforcing in the banking system of Bangladesh:

BOX 1: PRUDENTIAL REGULATIONS IN BANGLADESH

(i) Broad-Based Tools Applied to the Banking Sector:

- Countercyclical capital buffer; approved in April 2014, however, no positive rate applied yet.
- Capital conservation buffer; announced in Dec 21, 2014 and became effective from Jan 1, 2016
- Limit on leverage ratio 3%; announced in Dec 21, 2014 and became effective in Jan 2015
- Cap on credit growth; applied on state-owned banks only

(ii) Household Sector Tools:

- **Cap on credit growth to the household sector-** growth rate in total loans under ‘Consumer Financing’ must not exceed the growth rate of bank’s total loans
- **Cap on loan-to-value ratio**
 - Housing finance 70:30
 - Auto loan 50:50
 - Other consumer financing 30:70
- **Cap on debt-service-to-income ratio**
 - Auto loan 33%
 - Consumer Durables/ Professional Loans- 33%
 - Unsecured Personal Loan-35%
- **Limit on amortization periods**
 - House loan 25 years
 - Auto loan - as described in the prevailing Import Policy Order
 - Consumer Durables Loan - Minimum 12 months/24 months &/or maximum 36 months
 - Professional Loans - Minimum 12 months & maximum 48 months
 - Unsecured Personal Loan - Minimum 12 months/24 months and/or maximum 36 months
- **Restrictions on unsecured loans**
 - Personal loans including loans for the purchase of consumer durables - BDT 0.5 million
 - Credit card - BDT 1 million
 - Auto loan- BDT 4.0 million
- **Exposure caps on household credit**
 - Housing loan- BDT 12 million

(iii) Corporate Sector Tools

- **Capital requirements:**
 - Risk-weighted capital charge for banks’ exposures to corporate as per corporate ratings
 - Foreign-currency-denominated loans: no cap in place, but debt-equity cap of 70:30 with floating interest rate based on LIBOR.
- **Other measures to mitigate systemic risks from loans to the corporate sector:**
 - Regularly monitor indebtedness of large corporate borrowers through Central Database for Large Credit (CDLC).

(iv) Liquidity Tools Applied to the Banking Sector:

- Liquidity Coverage Ratio (LCR)
- Net Stable Funding Ratio (NSFR)
- Loan-to-deposit ratio: Conventional banks 83.5%; Islamic Shari’ah banks 89%
- Limits on maturity mismatches: the upper limit on maturity mismatches for cash outflow

in one-month time bucket 19% of balance sheet

- CRR 5.5% bi-weekly; 5% daily
- SLR 13% (for conventional banks); 5.5% (for Islamic banks)
- Limits on net open foreign exchange positions 20% of eligible (regulatory) capital

(v) Tools to Address Risks from Systemically Important Institutions and Interconnectedness within the Financial System

- Interbank Transaction Matrix (ITM)
- Bank Health Index
- Applying capital surcharges for systemically important banks

Source: Different circulars, guidelines and discussion with concerned departments of Bangladesh Bank.

Prudential regulations of Bangladesh Bank (BB) also includes loan classification and provisioning requirement, rescheduling and restructuring of loans and advances, risk weights for various types of assets for calculating capital adequacy, single borrower exposure limits, leverage and liquidity ratios following Basel II and Basel III. Some important macroprudential tools used to contain excessive risk taking by banks in Bangladesh have been discussed below.

V.1 Prudential Regulations for Banks under Consumer and Small Enterprise Financing

In 2004, Bangladesh Bank issued two prudential guidelines (1st edition) applicable to banks, one for consumer financing and another for small enterprise financing through BRPD Circular No.07; 03 November 2004. The guidelines for consumer financing titled “Prudential Regulations for Consumer Financing” contains prudential regulations for consumer financing. It gave a detailed policy and procedural guidelines for ensuring sound banking practices and consumer protection. The guidelines contains 32 regulations, which includes among others maximum limits for loans and advances, debt equity ratio or loan to value (LTV) limits for various types of consumer loans including auto loans and housing finance, limits on banks’ total exposure to consumer finance in terms of its equity.

Product Program Guidelines (PPG) under BB’s Prudential Regulations for Consumer Finance (2004) articulated fundamental policy guidelines for consumer financing. Before launching consumer finance products, banks are required develop fully documented product program guidelines, which shall include objective/quantitative parameters for the eligibility of the borrowers and determining the maximum permissible limit per borrower. Consumer finance in Bangladesh under BB’s prudential regulations are: Auto Loan, Consumer Durable Loans, Loans for Professionals, Unsecured Personal and Credit Cards.

Prudential Regulations for Consumer Finance (2004) imposed following limits for aggregate amount of consumer financing facilities (Prudential Regulation 2):

TABLE1: PRUDENTIAL REGULATION FOR CONSUMER FINANCE

Classified Consumer Finance to Total Consumer Finance (%)	Maximum Limit
a) Below 5%	10 times of the equity
b) 6% - 10%	6 times of the equity
c) 11% - 15%	4 times of the equity
d) 15% and over	Equal to equity

It may be mentioned here that Prudential Regulation-4 for small enterprise financing (2004) also imposed similar aggregate limits. However, these limits are so high and unrealistic that no one cares about such limits, and cannot be called prudential limits.

According to Prudential Regulation-3 for Consumer Financing (2004) banks would ensure that the total installment of the loans extended by them is commensurate with the take home income/disposable income and repayment capacity of the borrower. This is expected to ensure customer protection as well as minimize default risk for banks.

V.2 Loan to Value Ratio and Other Limits for Consumer Finance

Global financial crisis of 2007-09 showed that housing price bubble and bust can have a disastrous impact on the economy. Government policy and the central bank's prudential regulations on housing finance can have a great influence in shaping consumer demand for housing finance. According to BB's Prudential Regulations (2004) in respect of home loan by the banks per party limit was BDT 7.5 million and LTV or debt-equity ratio was 80:20, for auto loan limit was BDT 5.0 million and LTV or debt-equity ratio was 90:10. Besides, credit card and personal loan were maximum BDT 0.5 million as unsecured with BDT 2.0 million as secured and maximum BDT 0.3 million as unsecured with BDT 1.0 million as secured respectively.

BB's amendment (BRPD Circular No. 10; 20 August, 2005) said housing finance for real estate business and commercial complex such as super market and shopping mall etc. should be excluded from the consumer finance category. In order to arrest the flow of credit from banks to unproductive sector, banks were also instructed not to provide any credit facility for purchasing land.

On 16 June 2010, BB set the maximum per party limit in respect of housing finance by the banks at BDT10 million with maximum debt equity ratio of 80:20. Subsequently BB instructed (BRPD circular No. 03; 22 January 2012) that loan-margin ratio for house finance under consumer financing be maintained at 70:30. Besides, commercial banks were instructed to limit their total exposure under housing finance or home loan below 10% of their net consumer advance.

Debt Equity Ratios or Loan to Value (LTV) ratios for different types of consumer finance are thought to be important prudential regulations among others for limiting credit growth and demand. Following table shows changes in LTV ratios for SME and consumer finance (particularly auto loans and housing finance) over period from 2010 to June 2018.

TABLE 2: PRUDENTIAL REGULATION: LTV AND OTHER LIMITS FOR CONSUMER FINANCE

Date	Consumer Finance			
	Auto Loan	Housing Finance	Credit Card	Personal Loan
BRPD Circular no. 23; June 16, 2010		LTV 80% Limit BDT1 crore		
BRPD Circular 3 January 22, 2012	LTV 30%	LTV 70%		
BRPD Circular no. 5; April 25, 2012	Consumer credit growth not more than average total loan growth			
BRPD Circular no. 12; August 13, 2014	LTV 50% Limit: 40 lac			
BRPD Circular no. 1; January 1, 2015		LTV 70% Limit BDT1.2 crore		
BRPD Circular no. 4; April 3, 2017	Consumer credit growth not more than total loan growth		Max. BDT10 lac (unsecured) and BDT25 lac (secured)	Max. BDT5 lac (unsecured) and BDT20 lac (secured)

Source: Circulars and Guidelines of Bangladesh Bank

BB issued a circular in April 2012 (BRPD Circular No. 05; 25 April 2012) saying there has been an increase in consumer credit with concentration in unproductive sectors and thereby instructed banks to limit consumer credit growth no more than average growth of total credit. Then again BB issued a circular in April 2017 (BRPD Circular No. 04; 03 April 2017) saying the consumer product market in Bangladesh has been growing rapidly over the last few years and rising per capita income has enabled growth in consumer

spending; considering the existing market price and the increasing demand for consumer goods, it has been decided to make changes in Regulation-13 and Regulation-30 of the Prudential Regulations for Consumer Financing (2004). BB thereby increased credit card limit (unsecured) from BDT5 lac to BDT10 lac, personal loan limit (secured) to BDT20 lac. Besides, BB instructed banks to provide consumer finance such a way that, in any case, the growth rate in total loans under 'Consumer Financing' must not exceed the growth rate of bank's total loans.

BB's Prudential Regulation (2004) for consumer financing has stipulated that banks should maintain a general reserve at least equivalent to 3% of their consumer finance portfolio to protect them from the risks associated with the economic cyclical nature, while provisions against unsatisfactory, substandard, doubtful and loss category of credits required provision of 10%, 20%, 50% and 100% respectively. However, in the August of 2005, BB made amendments (BRPD Circular No. 10; 20 August 2005) rescinding the category of unsatisfactory and saying banks were required to maintain 2% General Provision only to revert back to 5% provision in December, 2005 (BRPD Circular No.17; 06 December 2005). Again in February 2006, BB reduced general provision for housing finance and loans for professional to set up business under consumer finance to 2% (BRPD Circular No. 01; 08 February 2006). Debt equity ratio for all other consumer loans including motor car loans was set at 50:50 in December 2010 (BRPD circular 34, 2010); Debt equity ratio for consumer financing (auto loan) was later set at 30:70 (BRPD Circular No.03; 22 January 2012).

V.3 Risk Weights under Basel II and III and Provision Requirement

Risk weights for different types of exposure for calculating minimum capital requirement are given under BB's Guidelines on 'Risk Based Capital Adequacy (RBCA)' for Banks in line with Basel II, which came into force from January 01, 2010 replacing the previous approach for calculating capital adequacy of banks. Again a revised guidelines on RBCA was issued on August 3, 2010 (BRPD Circular 24) incorporating all instructions issued till July 31, 2010, namely instructions issued vide BRPD Circular No. 07/2008, 09/2008, 05/2009, 13/2009,20/2009, 10/2010, 11/2010, 12/2010, 13/2010 and BRPD Circular Letter No. 05/2009.

From 2006 onward, BB required (BRPD Circular No.05; 05 June 2006) general provision of 1% against all unclassified loans (other than loans under Small Enterprise and Consumer Financing and Special Mention Account) and 5% against 'Special Mention A/C'; and provision for all short term agricultural and microcredit credits except

'Bad/Loss' (i.e. 'Doubtful', 'Sub-standard', irregular and regular credit accounts): 5%. BB introduced 0.5% general provision against Off-balance sheet exposures respectively from December, 2007 and 1% general provision against Off-balance sheet exposures (BRPD Circular No.10/2007).

On 27 October, 2010 BB issued a circular (BRPD Circular No. 32; 27 October 2010) saying financing by banks to dealers/subsidiary companies/any other company or individual became vulnerable due to volatility of market prices of shares/debentures; considering the investment risks in the capital market it has now been decided that banks shall maintain 2% general provision instead of 1% against unclassified amount of any kind of funded loan disbursed to stock dealers enlisted with Stock Exchange, separate subsidiary company established by a bank company for dealing business in share brokerage and merchant banking and any other company or institution or individual for dealing such business.

Following Verma (2016) the Table-3 shows countercyclical prudential regulations and their variations during 2010 to 2018. It can be seen that risk weights for capital market exposure was set 125 during January-June, 2010, which remained static over time till now (September 2018). Risk weights for claims against residential property, commercial real estate, consumer finance and related provisioning requirement on standard assets remained static during the period of 2010 to 2018. That means this prudential tools are not usually sensitive to developments in financial market and real economy. However, there had been some changes in the provisioning requirement of SME exposure since 2012. Provisioning requirement for SME exposure was reduced to 0.25% in 2012 from 2% requirement earlier, while risk weights were changed from a single slab of 75 in 2014 to three slabs of 75, 100 and 150 from 2015 depending on the size of the exposure.

**TABLE 3: COUNTERCYCLICAL PRUDENTIAL REGULATION:
VARIATIONS IN RISK WEIGHTS AND PROVISIONING REQUIREMENTS**

Date	Capital Market Exposure		Claims fully secured by residential property		Claims fully secured by Commercial Real Estate		Retail Portfolio and Small Medium Enterprise (SME)		Consumer Finance	
	RW	Prov	RW	Prov	RW	Prov	RW	Prov	RW	Prov
Basel II										
Jan-June, 2010	125	1%	50	1%	100	1%	75	2%	100	5%
July-Dec, 2010	125	2%	50	1%	100	1%	75	2%	100	5%
Jan-June, 2011	125	2%	50	1%	100	1%	75	2%	100	5%
July-Dec, 2011	125	2%	50	1%	100	1%	75	2%	100	5%
Jan-June, 2012	125	2%	50	1%	100	1%	75	2%	100	5%
July-Dec, 2012	125	2%	50	1%	100	1%	75	0.25%	100	5%
Jan-July, 2013	125	2%	50	1%	100	1%	75	0.25%	100	5%
July-Dec, 2013	125	2%	50	1%	100	1%	75	0.25%	100	5%
Jan-July, 2014	125	2%	50	1%	100	1%	75	0.25%	100	5%
July-Dec, 2014	125	2%	50	1%	100	1%	75	0.25%	100	5%
Basel III										
Jan-July, 2015	125	2%	50	1%	100	1%	Retail 75 SE<T3mil 75 SE≥T3mil 100 ME 20 to 150	0.25%	100	5%
July-Dec, 2015	125	2%	50	1%	100	1%	Retail 75 SE<BDT3mil 75 SE≥BDT3mil 100 ME 20 to 150	0.25%	100	5%
Jan-July, 2016	125	2%	50	1%	100	1%	Retail 75 SE<BDT3mil 75 SE≥BDT3mil 100 ME 20 to 150	0.25%	100	5%
July-Dec, 2016	125	2%	50	1%	100	1%	Retail 75 SE<BDT3mil 75 SE≥BDT3mil 100 ME 20 to 150	0.25%	100	5%
Jan-July, 2017	125	2%	50	1%	100	1%	Retail 75 SE<BDT3mil 75 SE≥BDT3mil 100 ME 20 to 150	0.25%	100	5%
July-Dec, 2017	125	2%	50	1%	100	1%	Retail 75 SE<BDT3mil 75 SE≥BDT3mil 100 ME 20 to 150	0.25%	100	5%
Jan-July, 2018	125	2%	50	1%	100	1%	Retail 75 SE<BDT3mil 75 SE≥BDT3mil 100 ME 20 to 150	0.25%	100	5%
July-Dec, 2018	125	2%	50	1%	100	1%	Retail 75 SE<BDT3mil 75 SE≥BDT3mil 100 ME 20 to 150	0.25%	100	5%

Notes: RW= Risk Weights in percentage, Prov.= Provision requirements, Source: Circulars and Guidelines of Bangladesh Bank

V.4 Prudential Regulation for Single Borrower Exposure

Main features of prudential regulations for limiting single borrower exposure are given below.

- i) The outstanding amount of exposure, both funded and non-funded, to a single person/counterparty or a group shall not exceed 35% of the capital at any point of time.
- ii) The aggregate outstanding principal amount of funded exposures shall not exceed 15% of the capital at any point of time.
- iii) In case of export financing, the outstanding amount of exposure, both funded and non-funded, at any point of time to a single person/counterparty or a group shall not exceed 50% of the capital. However, the aggregate outstanding principal amount of funded exposures shall not exceed 15% of the capital at any point of time.

It was observed that same exposure limit applicable to a single borrower and a group of borrowers that were related, while also borrowers were tempted to hide their group exposure and intergroup transfer of borrowed fund making the regulation superfluous.

V.5 Risk Based Capital Adequacy under Basel III

In December 2014 BB issued revised regulatory capital adequacy framework for banks in line with Basel III and declared the road map and action plan of the phase-in arrangements for the implementation of Basel III. According to the roadmap, Basel III would phase in from January 2015 and full implementation would be completed by January 2020. Basel III reforms have both micro and macroprudential focus. The macroprudential aspects of Basel III are largely incorporated in different risk weights minimum liquidity requirement, maximum leverage and the requirement for capital buffers i.e. the capital conservation buffer and the countercyclical buffer, which are intended to protect the banking sector from periods of excess credit growth.

In the Road Map² for implementation of Basel III, BB introduced Countercyclical Capital Buffer (CCyB) from Jan 2016. The Guidelines for Implementation of Basel III in Bangladesh mentioned Countercyclical Capital Buffer in the overview section 1.4, but no time frame was mentioned. The main objective of this tool was to address procyclical behavior as well as promoting countercyclical buffers for the banks with excessive credit growth. Banks in Bangladesh are currently not maintaining CCyB. The CCyB suggested

² BRPD circular no 07 dated March 31, 2014.

in the best practices is from 0 to 2.5% of the risk weighted assets of banks. Capital conservation buffer (CCB) would be 2.5 percent when Basel III would be fully implemented in 2019. However, it started to phase-out at incremental of 0.625 percent starting from 2016 with 0.625 percent.

Risk weights (RW) against capital market, loans to residential property or commercial real estate, loans to retail customers or SME or consumer finance remained same since the adoption of Basel II in Bangladesh. Only a little variation observed in the RW for the SME loans in Basel III framework. Though one of the important aspects of the Basel III framework is to accommodate macroprudential regulations, Basel III is being implemented in the banking system of Bangladesh without imposing any time variant RW to counter the excessive credit growth in the concerned areas. Although BB introduced Basel-III in a timely fashion, state-owned commercial banks (SCBs) have failed to maintain minimum capital adequacy requirements since 2013. Development finance institutions (DFIs) were also critically under-capitalized.

V.6 Prudential Regulations for Capital Market Exposure

According to Section 26(2) of Bank Company Act, 1991 (before amendment in 2013) no banking company shall hold shares in any company exceeding the lesser of the following amounts, namely: a) 30% of the total amount of the paid-up capital and reserve of the bank company, or b) 30% of the paid-up capital of the said company. Besides, total holding of shares by any bank company shall not exceed 10% of its liabilities.

BB issued circular (BRPD Circular No.12; 29 March 2010) saying Capital Market Exposures [Claims against investor account (Merchant banking)/margin account (Brokerage house) holder] will be assigned 125% risk weight for the purpose of computing capital adequacy and these sorts of claims will not be considered for Credit Risk Mitigation (CRM).

However, BB restricted banks (DOS Circular No. 04; 15 June 2010) to participate in merchant banking (MB) and brokerage house (BH) activities without creating subsidiary companies from 1st October, 2010, while redefining capital market exposure of banks to make it broad based and imposing a new limit (10% of the total liabilities of the bank company) on capital market exposure of banks. It was the time when stock markets of Bangladesh (DSE and CSE) had been rallying irrationally. New definition of capital exposure of banks included the following:

- a. Market value of shares, debentures, bonds and mutual fund purchased by banks on its own account;
- b. Outstanding loan balances and credit limits to subsidiaries (merchant bank and brokerage houses);
- c. Guarantee issued (100%) by banks against loans and advances taken by their subsidiaries;
- d. Outstanding loans and credit limits sanctioned to any other company, institute or persons for carrying out merchant banking and brokerage house activities;
- e. Loan to licensed stock market dealer against the security of shares/debentures subject to maximum limit of Taka one crore.

Besides, it was stipulated that capital market exposure would not include capital provided to the bank's own subsidiary, statutory liquid assets under Bank Company Act, Tier 1 and Tier 2 instruments issued by other banks and share in central depository (BD) limited. Furthermore, extending credit facilities to subsidiaries of a bank company or any other company or individual for carrying out merchant banking and stock brokerage activities was also subjected to single borrower exposure limit (15% of Bank Company's capital).

Considering the investment risks in the capital market BB issued a circular in October 2010 stipulating 2% general provision instead of 1% against unclassified amount of any kind of funded loan disbursed by banks to stock dealers enlisted with Stock Exchange, separate subsidiary company established by a bank company for dealing business in share brokerage and merchant banking and any other company or institution or individual for dealing such business (BRPD Circular No. 32; 27 October 2010).

Capital market of Bangladesh went through a debacle at the end of 2010. BB then relaxed its regulations step by step to give incentives to the market participants. BB extended credit limits to stockbrokers from BDT one crore to BDT three crore and allowed banks to carry on with its stock market exposures exceeding single borrower exposure limit. BB increased maximum limit to BDT three crore for loans to licensed stock market dealers against the security of shares/debentures (DOS Circular letter No. 04; 13 March 2013).

Bank Company Act, 1991 was revised in 2013 and BB issued revised policy guidelines in September 2013 (DOS Circular 02; 16 September 2013) for banks to investment in capital market. Banks were instructed to follow the maximum investment limits for individual company and for aggregate exposure as stipulated under section 26 (ka), subsection -1 of the Bank Company Act (amended up to 2013). Banks were advised to keep aggregate

capital market exposure within 25% of their capital. Banks that exceeded the aggregate capital market exposure limit were allowed to minimize their exposure limit gradually within next three years (by July, 2016). Again, in 2014, aggregate capital market exposure limit for banks on consolidated basis was revised upwards to 50% of equity capital (DOS Circular 07; 25 February 2014).

V.7 Limits on Open Foreign Currency Position

Because of the rising and comparative high foreign exchange exposures of some financial institutions, the net open position of foreign exchange on an aggregate basis has been regulated since 1990s. Initially it was set on the requirements and performance of the individual institution. From the mid of 2000s, a common benchmark had been set for all banks to indiscriminate the banks' category. This regulation aimed to help contain foreign exchange risk in the Bangladesh banking system. Under this rule, banks were required to maintain their net foreign exchange position of all currencies in aggregate not exceeding 15 percent their total eligible capital set in amount but reviews periodically. In 2016, overall open positions of banks have been revised. It was increased to the level of 20 percent of total eligible capital of individual banks with a rounded limit. With limited exposure of banks in Bangladesh to foreign borrowing and investment due to restrictions on capital account convertibility, prudential limits on foreign exchange open positions of banks worked well in containing foreign exchange risks. However, foreign exchange market of Bangladesh experienced some pressure in the exchange rate and liquidity shortage at different time periods due to demand-supply gap, which the central bank was able to smoothen.

V.8 Limits to Advance Deposit Ratio (ADR)

Since 2010, BB has been monitoring banks' advances to deposits ratio (ADR), which can be used for micro-prudential as well as macroprudential instrument. BB set ADR benchmark at 85% and 90% for conventional and Islamic banks respectively in 2016. For the best part of 2017 the private sector credit growth was on the rise, prompting the Bangladesh Bank in January, 2018 to lower the banks' advance-deposit ratio ceiling to 83.5 percent from 85 percent to be maintained by June, 2018. However, due to industry pressure it was later made effective from March 31, 2019 (DOS Circular No. 03; 09 April 2018). Such kind of regulatory forbearance could make the instrument ineffective.

Various reports of BB analyze trend of ADR for banking industry as a whole, which could be misleading as some banks with lower ADR could make the industry average

look good. If we look at individual banks, some banks could be seen breaking the maximum ADR due to aggressive lending.

V.9 Limits on Interest Rate Spread

Banks in general are free to fix their deposit and lending rate but BB advise them to reduce average spread between lending and deposit rate within lower single digit (5%). However, the maximum rate of interest rate on pre-shipment export credit is 7 percent and on agriculture loan is 12-13 percent. Banks were advised to limit the difference between weighted average lending rate and rate of interest on deposit or intermediation spread within the lower single digit in different sectors other than high risk consumer credit (including credit card) and loans to small and medium enterprises (SMEs). A constant effort of dialogue, consultation had been initiated by BB to encourage banks to limit spread at single lower digit (5%) from January 2012.

However, limits on interest rate spread cannot be termed purely as a macroprudential tool, it could be used as a monetary policy tool. Further, calculation of spread being complex, there could be temptation for banks to manipulate calculation, while it could also allow banks to increase lending rates without corresponding decrease in deposit rate making the tool ineffective.

VI. EFFECTIVENESS OF MACROPRUDENTIAL POLICY IN BANGLADESH

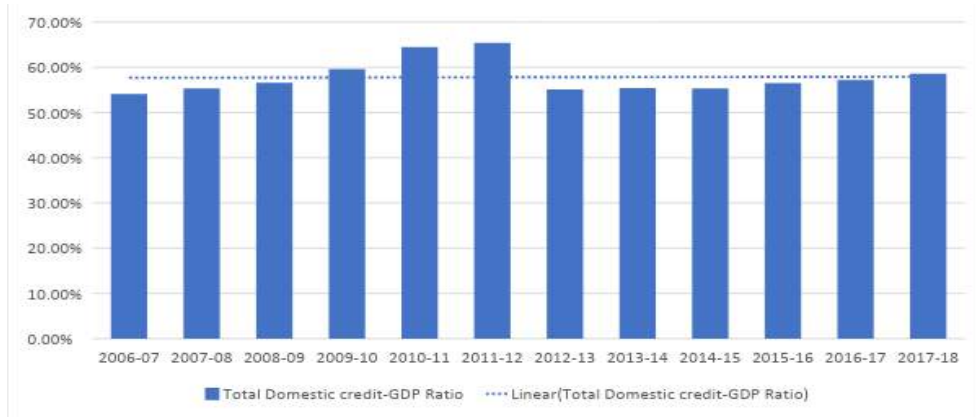
Generally, macroprudential regulations attempt to address both dimensions of systemic risk i.e., time dimension and cross-sectional dimension. The time dimension of systemic risk is closely related to pro-cyclicality of credit growth. Financial imbalances build up gradually over time when financial institutions become very aggressive in risk taking so that their leverage, liquidity, and prices of securities and real estate rise sharply in a relatively very short span of time. However, during the down-swing phase, the trend reverses triggering a fall in asset prices, resulting in devastating deleveraging and liquidity squeeze which may result in a financial crisis. On the other hand, the cross-sectional dimension is closely related to the concept of inter-connectedness of financial institutions. When an individual financial institution fails, it rapidly contaminates other institutions through various inter-linkages such as counter-party risk, asset fire sales, liquidity crisis, etc. Following analysis examined the effectiveness of macroprudential policy in containing procyclical behavior of the banking and financial sector, in other words, the time dimension of systemic risk.

VI.1 Domestic Credit to GDP Ratio, Credit Growth and Asset Price Growth

Excessive credit growth has long been recognized as integral to financial booms and busts (Minsky, 1982; Kindleberger, 2000). However, what constitutes “excessive” credit growth remains undefined. Borio and Lowe (2002a) propose a credit-to-GDP gap measured by the deviations of the credit-to-GDP ratio from a one-sided Hodrick-Prescott (HP) filter, although it may also give spurious results. Besides credit to GDP ratio and its long term trend measures of credit growth can be complemented by other indicators, for example rapid asset-price growth, and indicators of systemic risk build-up that reflect the characteristics of individual economies (FSB, IMF & BIS 2011).

Let us look at the trend of credit to GDP ratio (see Chart 2) and trend of growth in GDP, Credit and DSE Index (see Chart 3) in Bangladesh. We can see that Domestic Credit to GDP ratios exceeded the long term normal range of around 60% between 2009-10 and 2011-12, as indicated by the trend line. It was later revealed that taking opportunity of lax lending standards some unscrupulous borrowers from banks were diverting their fund into stock market. Banks were also aggressively lending and investing in capital market even going beyond the limits for capital market exposure. At the beginning of 2010, BB attempted to alert banks of growing risks in capital market exposure clarifying and redefining capital market exposure along with some additional measures. However, macroprudential regulations of BB partially contributed to check overexposure of the banking sector to capital market at the cost of a sudden crash at the end of 2010.

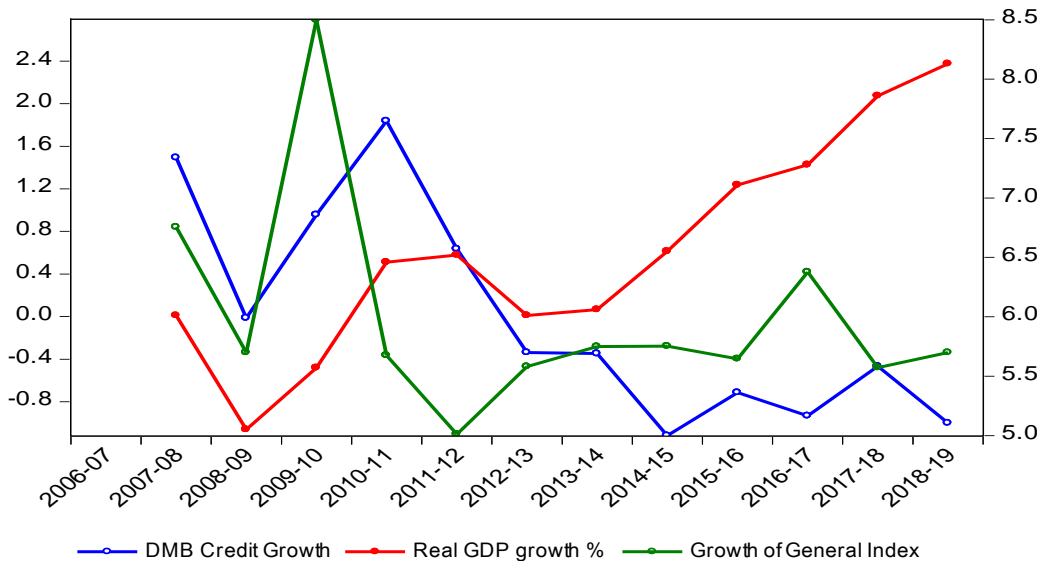
CHART 2: TOTAL DOMESTIC CREDIT-GDP RATIO %



Source: Various issues of Economic Trend, Bangladesh Bank

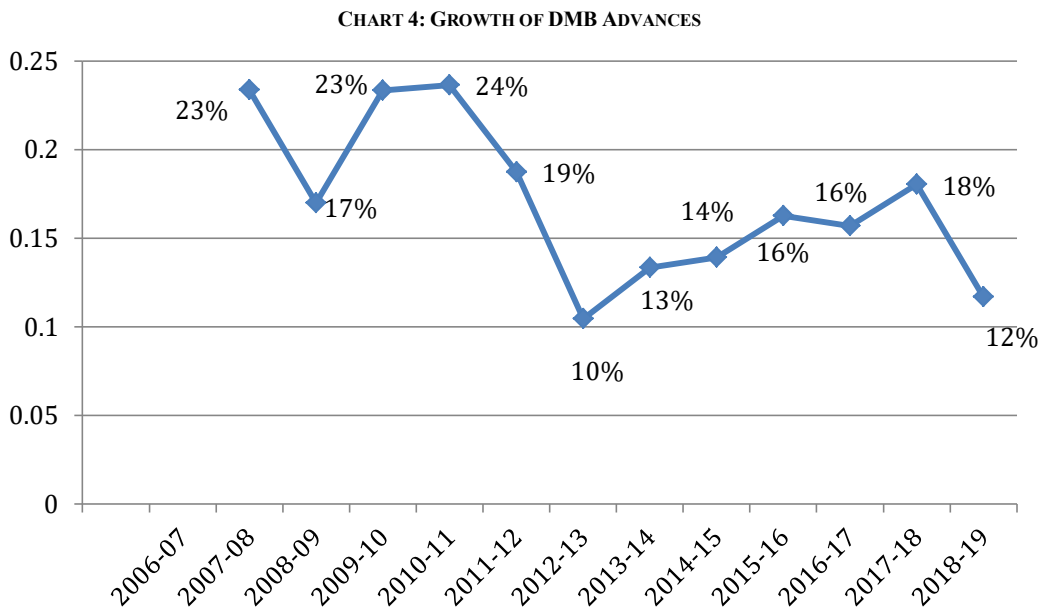
It can be seen from the Chart 3, GDP growth was robust (red line plotted in the right axis), while DSE General Index (green line plotted in the left axis) went through a rapid boom and bust during 2010-12. After the debacle in the capital market at the end of 2010, government and BB attempted to revive the market by giving incentives and relaxing regulations; however, the capital market never gained the confidence of the general investors and nor got back the lost ground.

CHART 3: GROWTH IN GDP, CREDIT AND DSE INDEX



Source: Various issues of Economic Trend, Bangladesh Bank

It may be seen from the Chart 4 below, during the period of 2010-2012 DMB Advances (loans and advances provided by banks) registered a growth rate of above or close to 20%. During this period some of the biggest financial scams (such as Hallmark, Bismillah Group and BASIC Bank) in the history of Bangladesh had been unearthed.



Source: Various issues of Economic Trend, Bangladesh Bank

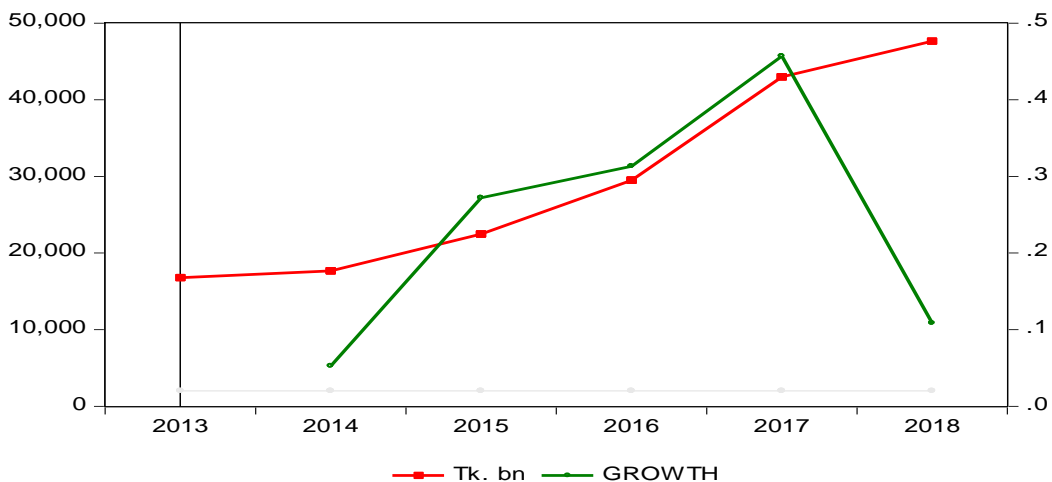
BB’s prudential regulations were not so effective to rein in excessive credit growth during 2010-12. However, from 2012 onward BB pursued macroprudential policy aiming at improving corporate governance in banks and strengthening bank supervision, which partially contributed to moderating growth in overall banking sector advances subsequently.

VI.2 Consumer Finance Trend

BB’s Prudential Regulations for Consumer Financing (2004) and subsequent minor revisions were basically microprudential in nature having macroprudential implication. Looking at the chart below, it can be observed that from 2015 to 2017 consumer finance by banks showed annual growth rate of around 27%, 31%, and 46% respectively, which could be termed as “excessive”. During this period BB’s

macroprudential policy failed to contain excessive growth in consumer credit. However, in April 2017, BB stipulated a prudential limit that consumer credit growth of banks cannot be more than their total loan growth. We can see from the chart below that consumer credit growth became "modest" at 11% in 2018. According to a newspaper report leading commercial banks provide consumer finance during 2016-17 that surpasses the growth rate of banks' total lending violating the central bank instruction. According to another report the interest rate on industrial loan was revised down to single digit after the relaxation of the cash reserve ratio in April, but consumer loan rate remained almost unchanged (*The Daily Star*, Nov.9, 2018). Banks have invested less in consumer loan to adjust the high advance deposit ratio this year, said the same report. Therefore, higher interest rate on consumer finance and ADR adjustment might be reason for modest growth in consumer finance in 2018.

CHART 5: CONSUMER FINANCE (TK BILLION)



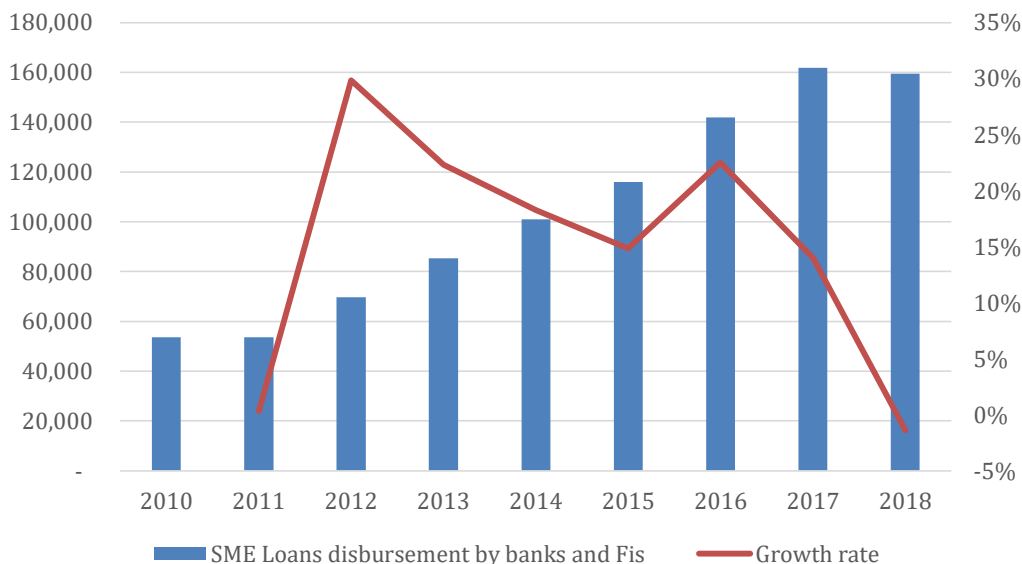
Source: Department of Offsite Supervision, Bangladesh Bank

VI.3 SME Finance Trend

Monetary policy for FY10 was designed to support highest sustainable output growth without triggering escalation of inflation, with directional bias towards credit needs of agriculture and SME sector. SME credit disbursement increased gradually from 2010, when provision requirement for unclassified SME loan was cut down from 2% to

0.25%. There was a jump in growth rate of around 30% from 2011 to 2012. Thereafter, SME credit disbursement gradually increased and growth rate remained around 15-20% during 2015 to 2017. However, SME finance by banks and FIs showed a negative growth in 2018, although BB's monetary policy and prudential regulations continued to encourage SME finance, particularly for women entrepreneurs.

CHART 6: SME LOAN DISBURSEMENT BY BANKS AND FIS (TK CRORE)

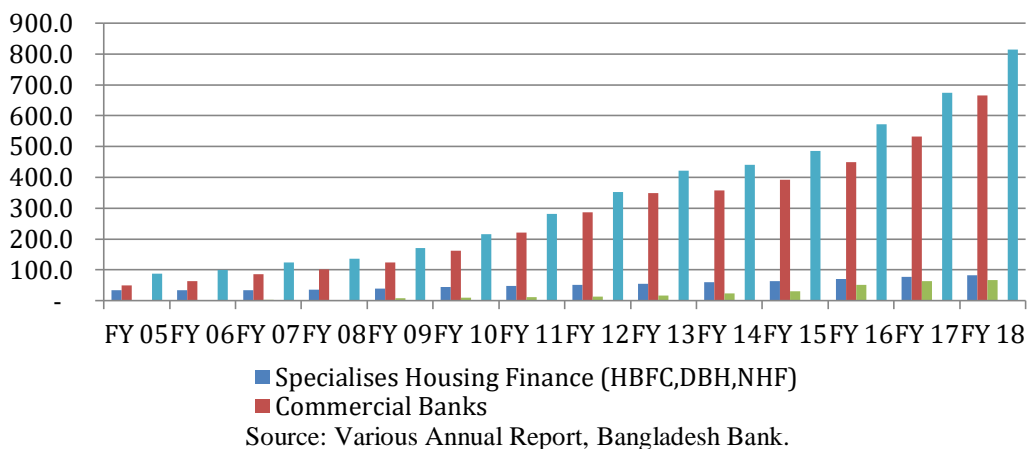


Source: SME Department, Bangladesh Bank

VI.4 Effectiveness of Macroprudential policy for Home Loan

The source of home loans currently available in Bangladesh are commercial banks, specialized housing finance institutions, other non-bank financial institutions, microcredit lenders, staff loans and informal means. Chart 7 below displays a comparison of different home loan providers during FY05 to FY18. The chart shows an upward trend of total outstanding home loans during the period with commercial banks dominating the sector with around 82% share in 2018. During the period prudential limit for home loan provided by banks was increased twice from BDT75 lac to BDT1 crore in 2010 and BDT1.2 crore in 2015; LTV was reduced from 80% to 70% in 2012, while risk weight for residential housing loan remained unchanged at 50. Some relaxations in prudential norms for residential housing loans have positive impact on growing home loan.

CHART 7: HOME LOAN (TK BILLION)



VI.5 Coordination between Monetary and Macprudential Policy

According to Jiang et al (2019) monetary policy and macroprudential policy can affect bank risk-taking and asset prices through some similar channels, such as the credit channel and the balance sheet channel. Because both policies have some side effects and sometimes conflict with each other, they cannot be implemented independently.

In order to find whether there was a coordination between monetary policy and macroprudential policy, changes in the interest rates of key monetary policy instruments (particularly repo and reverse repo) and liquidity ratios (CRR, SLR) have been identified through three distinct phases during 2010-18, while changes in key macroprudential policy tools (such as ADR, provision and risk weights against sensitive assets) during the period was observed (see Table 4).

During first phase (2010-12) BB's monetary policy supported credit and output growth without triggering escalation of inflation in order to cushion the impact of global financial crisis. However, BB tightened key interest rates (repo, reverse repo, CRR and SLR) to contain inflationary pressure during 2010-12 increasing Repo rate gradually by 275 basis points and CRR, SLR 100 basis points. During this period BB increased provision against capital market exposure by 100 basis points, while reduced provision against SME credit by 175 basis points leaving other key macroprudential tools (see Table 4) unchanged.

TABLE 4: COORDINATION BETWEEN MONETARY AND MACRO PRUDENTIAL POLICIES

(Change in basis points)

Measures	Monetary tightening phase* January 2010 to December 2012	Monetary accommodating phase January 2013 to December 2015	Monetary easing phase January 2016 to December 2018
Monetary Measures			
Repo Rate	+225(+50, +25, +50,+50 and 50)	-50	-125(-50 and -75)
Reverse Repo Rate	+225(+50, +25, +50,+50 and 50)	-50	-50
CRR	+100(+50+50)	+50	-50
SLR	+100(+50+50)	0	0
Macroprudential Measures			
<i>Loans limits</i>			
ADR(%)-Traditional Bank	85	85	83.5(postponed)
ADR(%)-Islamic Bank	90	90	89(postponed)
Interest Rate Spread (%)	5	5	4
<i>Provision Norms</i>			
Capital Market Exposure	+100	0	0
Exposure to residential property	0	0	0
Exposure to Commercial Real Estate	0	0	0
SME	-175	0	0
Consumer Finance	0	0	0
<i>Risk Weights</i>			
Capital Market Exposure	0	0	0
Exposure to residential property	0	0	0
Exposure to Commercial Real Estate	0	0	0
Retail Portfolio and SME	0	0	0
Consumer Finance	0	0	0

Notes: ADR of 85% (Conventional banks) and 90% (Islamic banks) introduced in 2010. Spread at single lower digit (5%) from January 2012 and moral suasion in the Bankers' Meeting with the Governor of BB since late 2000s. Tightened ADR (83.5% for conventional banks and 89% for Islamic banks) will be effective from March 31, 2019³. Provisions for SME loans put down to 0.25% from July 2012 but no changes made in the RW other than for SME.

*Monetary tightening phase was identified in terms of increase in key monetary policy rates, although otherwise it was supporting credit growth especially to agriculture and SME.

Source: Authors' calculation and compilation

³ DOS Circular No. 03; 09 April 2018.

During second phase (2013-2015) BB followed a balanced monetary policy approach. BB reduced repo and reverse repo rates by 50 basis points during the period, while CRR was raised by 50 basis points. During this period macroprudential tools ADR and risk weights and provision requirement for some sensitive sectors were unchanged, although efforts to improve corporate governance and risk management in the banking sector continued.

During third phase (2016-2018), BB went through monetary easing as repo rate was cut down by 125 basis points on two occasions (50 and 75 basis points), while CRR was also reduced by 50 basis points. Private sector credit grew at more than 15 percent, sometimes overshooting the monetary policy target. During this period banking sector experienced persistently higher level of non-performing loans. As of June 2018, SCBs had 28.2% NPL, which is highest in the last ten years. About 47% non-performing loans were concentrated in 5 banks as of end-June 2018 (BB, 2018). However, key macroprudential tools were unchanged during the period, while monetary policy was pursuing higher private sector credit and output growth in line with big budgetary allocation. Overall, there appears to be a lack of dynamism in adopting key macroprudential tools to counter procyclical behavior of the banking sector, while lack of effective coordination between monetary policy measures and macroprudential tools was also observed.

VII. CONCLUSION

There appears to be a lack of dynamism in adopting key macroprudential tools to counter procyclical behavior of the banking sector, while lack of effective coordination between monetary policy measures and macroprudential tools was also observed. Macroprudential regulations of BB partially contributed to check overexposure of the banking sector to capital market at the cost of a sudden crash at the end of 2010, but failed to rein in excessive credit growth during 2010-12 and consumer credit growth during 2015-17. A reduction in provision for standard SME credit in 2012, supported growth in SME credit disbursement contributing to diversifying risks in the banking sector. Some relaxations in prudential norms for residential housing loans have positive impact on growing home loan. Although BB introduced Basel-III in a timely fashion, state-owned commercial banks (SCBs) have failed to maintain minimum capital adequacy requirements since 2013. Further comprehensive research is needed in order to assess effectiveness of macroprudential tools and its coordination with monetary policy.

VIII. POLICY RECOMMENDATION

- a. Make macroprudential tools such as ADR and provision against assets and risk-weights for assets under capital adequacy responsive to development in the financial system;
- b. Adopt time-varying LTV ratio and dynamic provisioning system to counter procyclical behavior of the market;
- c. Coordinate macroprudential policy with monetary policy,;
- d. Closely monitor the compliance of macroprudential regulations and assess their impact at regular interval.

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ANNEXURE 1

REFERENCE OF MONETARY AND MACRO PRUDENTIAL INSTRUMENTS AND CHANGES

1. CRR

CRR at 5.5 percent from 15 April, 2018⁴.

CRR at 6.5 percent from 24 June 2014⁵.

CRR at 6.0 percent from 15 December 2010⁶.

CRR at 5.5 percent from 15 May 2010⁷.

2. SLR

SLR at 13.0 (5.5 for Sharia'ah banks) percent from 01 February 2014⁸(excluded CRR of 6%).

SLR at 19.0 (11.5 for Sharia'ah banks) percent from 15 December 2010⁹.

SLR at 18.5 (10.5 for Sharia'ah banks¹⁰) percent from 15 May 2010¹¹.

3. REPO AND REVERSE REPO RATE

Repo at 6.0 percent and Reverse Repo at 4.75 percent from 15 April 2018¹².

Repo at 6.75 percent and Reverse Repo at 4.75 percent from 14 January 2016¹³.

Repo at 7.25 percent and Reverse Repo at 5.25 percent from 01 February 2013¹⁴.

Repo at 7.75 percent and Reverse Repo at 5.75 percent from 08 January 2012¹⁵.

Repo at 7.25 percent and Reverse Repo at 5.25 percent from 05 September 2011¹⁶.

⁴MPD Circular No.-01, dated April 03, 2018

⁵MPD circular No 01, dated June 23, 2014

⁶MPD circular No 04, dated December 01, 2010

⁷MPD circular No 01, dated May 04, 2010

⁸MPD circular No 02, dated December 10, 2013

⁹MPD circular No 05, dated December 01, 2010

¹⁰Ref: MPD116/2010-628, dated May 12, 2010

¹¹MPD circular No 02, dated May 04, 2010

¹²MPD circular No 02, dated April 03, 2018

¹³MPD circular No 01, dated January 14, 2016

¹⁴MPD circular No 01, dated January 31, 2013

¹⁵MPD circular No 01, dated January 05, 2012

¹⁶MPD circular No 04, dated September 04, 2011

Repo at 6.75 percent and Reverse Repo at 4.75 percent from 15 June 2011¹⁷.

Repo at 6.25 percent and Reverse Repo at 4.25 percent from 27 April 2011¹⁸.

Repo at 6.00 percent and Reverse Repo at 4.00 percent from 13 March 2011¹⁹.

Repo at 5.50 percent and Reverse Repo at 3.50 percent from 19 August 2010²⁰.

4. INTEREST SPREAD

Interest spread (IR) set at 4% instead of 5% from 30 May 2018²¹.

Interest spread (IR) set at 5% (lower single digit) 19 November 2015²².

Interest spread (IR) set at 5% (lower single digit) 22 January 2012²³.

¹⁷ MPD circular No 03, dated June 14, 2011

¹⁸ MPD circular No 02, dated April 26, 2011

¹⁹ MPD circular No 01, dated March 10, 2011

²⁰ MPD circular No 03, dated August 19, 2010

²¹ BRPD Circular Letter no. 09, dated May 30, 2018.

²² BRPD Circular Letter no. 13 and 14, respectively dated November 19, 2015 and December 28, 2015.

²³ BRPD Circular Letter no. 01, dated January 22, 2012.