

# **RMA POLICY PAPER**

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*Policy Paper on*  
**MACRO-PRUDENTIAL RULES AND REGULATIONS**

*Financial Regulation and Supervision Department*

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**ROYAL MONETARY AUTHORITY OF BHUTAN**

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## Message from the Governor

Dear Colleagues,

Bhutan's financial system has expanded four fold within ten years. Total assets of the financial system have expanded from nearly Nu.20 billion (Dec 2003) to Nu.86 billion (Dec 2013). The Credit to GDP ratio has also increased from 20% in 2002 to 53% in 2012. This reflects the increasing financial deepening in the Bhutanese economy.

With the expanding size of the financial system and innovations in the financial sector, the dynamics of financial risks and vulnerabilities also changes. This requires formulation and application of financial regulations and prudential guidelines to promote good governance and to ensure stability and integrity of the financial system against potential systemic risks. RMA in the last decade, intermittently, has come up with various regulations safeguarding the interest of banks, deposit holders, shareholders and the public in general. I assure you that the Bhutanese financial institutions, under the close supervision of the RMA, meet all safety prudential norms and requirements.

However, we believe it is an appropriate time to strengthen the existing regulatory framework and make the Bhutanese financial system more risk resilient. The micro-prudential regulations, which are currently in place, address the safety and soundness of individual financial institutions. However, there may be risks emanating within the financial sector or macro-economic risks that could potentially destabilise the entire financial sector as a whole. To mitigate such risks to the financial system, we are in the process of introducing 'Macro-prudential rules and regulations'.

There are seven macro-prudential regulations which could form our initial macro-prudential tools and instruments. These are: (a) Counter-cyclical capital buffer; (b) Sectoral capital requirement; (c) Leverage ratio; (d) Loan to Value and Loan to Income; (e) Debt to Equity ratio; (f) Time varying capital provisioning and margin requirement; and (g) Distribution of Profit.

This policy paper discusses these regulations and provides some implementation guidance. The drafting and the finalisation of these regulations has been a long and tedious process but a fulfilling one. These regulations have been discussed in detail with the financial institutions and other stakeholders to facilitate its smooth implementation. Besides the draft regulations were hosted in RMA external website for public comments prior to its finalization. Needless to say – success of any regulation does not depend upon the letter in the regulation rather the spirit in which it is implemented. We at RMA are ready to walk the extra mile with you in making our financial sector safe and sound. Please feel free to get in touch with me or with my staff for any further guidance or clarification.

Tashi Delek!

Daw Tenzin,  
Governor

## List of abbreviation

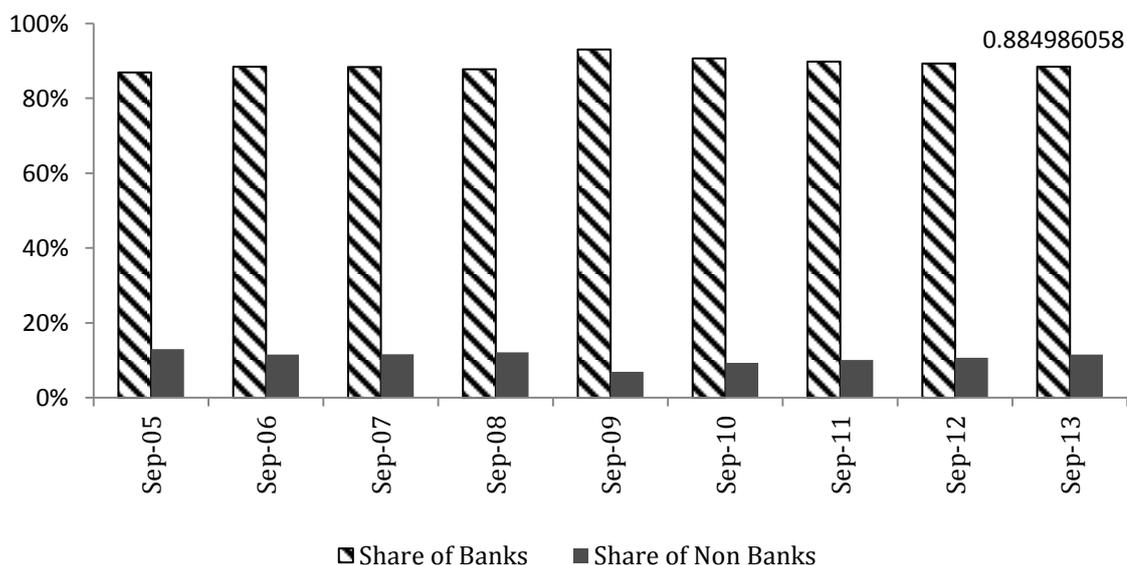
<b>Abbreviations</b>	<b>Full form</b>	<b>Abbreviations</b>	<b>Full form</b>
CAR	Capital Adequacy Ratio	LTV	Loan to value
CCyB	Counter-cyclical capital Buffer	MPR	Macro-prudential Regulations
EMI	Equated Monthly Instalment	MSME	Micro Small and Medium Enterprises
FI	Financial Institution	NPL	Non-performing loan
FSA	Financial Services Act	NPPF	National Pension and Provident Fund
GDP	Gross Domestic Product	PAT	Profit after tax
GFC	Global Financial Crisis	PCR	Provisioning Coverage Ratio
GNH	Gross National Happiness	PR 2002	Prudential Regulations 2002
HP	Hodrick-Prescott	RMA	Royal Monetary Authority
IIS	Interest in Suspense	RSEBL	Royal Securities Exchange of Bhutan Ltd.
IMF	International Monetary Fund	RWA	Risk weighted assets
LTI	Loan to Income	SCR	Sectoral Capital Requirements
TVCP	Time varying capital provisioning		

## 1. Country Context: Bhutan

1.1. **The financial sector of an economy consists of a set of Financial Institutions (FIs), financial instruments and financial markets.** The sector also includes the legal and regulatory framework under the aegis of which the institutions and markets undertake financial transactions by making use of the available financial instruments. A supervisory cum oversight authority is usually responsible for ensuring unfettered operations of the financial markets and institutions so that key financial risks are monitored on an ongoing basis and corrective actions are undertaken as and when the need arises.

1.2. **In Bhutan, the financial sector is dominated by banks, accounting for 88% of financial sector assets (Figure 1).** Non-banking institutions largely comprise of two insurance companies which also undertake lending activities, one re-insurance company and the pension fund. The two insurance companies are Royal Insurance Corporation of Bhutan Ltd (RICBL) and the Bhutan Insurance Ltd. The National Pension and Provident Fund (NPPF) manage the retirement plans of civil servants, employees of government run corporations, joint sector companies, and the armed forces. The NPPF also advances student loans, housing loans and project finance. Royal Securities Exchange of Bhutan Ltd (RSEBL) is the only stock exchange in the country listing 20 companies at present. The Royal Monetary Authority (RMA) of Bhutan is responsible for the supervision of all these institutions.

**Figure 1: Share of banks and non-banks in total assets of the financial sector<sup>1</sup>**



Source: Financial Regulation and Supervision Department, RMA

<sup>1</sup> Financial sector for this purpose includes the 5 banks, 2 insurance companies, 1 re-insurance and the NPPF.

- 1.3. The current regulatory framework in Bhutan is mostly micro-prudential in nature.** The Prudential Regulations (PR) 2002 stipulates regulation related to institutional framework of financial institutions; related party transactions; shares trading; capital, liquidity and provisioning requirements etc. These are micro-prudential regulations, aiming to preserve the health of individual financial institution. The Financial Services Act (FSA) 2011, which supersede the Prudential Regulation 2002, covers issues of licensing, corporate governance, disclosure requirements and general structural regulations governing banking, insurance, securities businesses and other financial services.
- 1.4. Existing regulatory framework includes some elements of macro-prudential policy.** For example, the RMA sets sector-specific risk weights in line with the perceived riskiness in the sector as a whole<sup>2</sup>. Nevertheless, a comprehensive approach to macro-prudential regulation is currently missing. The Asian Development Bank Technical Assistance-8284, ‘Supporting Financial Stability in Bhutan and the Maldives’, aims to plug this gap. In the subsequent sections, this policy paper will set out the rationale for introducing macro-prudential rules and regulations (hereafter MPR 2014) in Bhutan and the mode of implementation of each of the proposed regulations.

## ***2. Rationale for Macro-prudential regulations***

- 2.1. Macro-prudential regulation aims to contain systemic risk.** The IMF describes systemic risk as the “risk of disruption to financial services that is caused by an impairment of all or parts of the financial system and has the potential to have serious negative consequences on the real economy”<sup>3</sup>. It has two aspects: (a) pro-cyclicality and (b) contagion risk among financial institutions at any given point of time.
- 2.1.1. Pro-cyclicality is defined as “the magnification of swings in the economic cycles, by financial sector activities, most notably bank lending”<sup>4</sup>.** Essentially, during periods of economic expansion, lenders are optimistic about future prospects which lead them to underestimate and underprice risks. Hence, not only more credit is available during an economic boom, it is also available at easy terms. This further fuels the economic expansion. Moreover, if increased credit leads to more demand and purchase of assets that serve as collateral, the resultant increase in their value encourages the disbursement of credit even more. Conversely, during “bad times”, as asset values fall, and loans turn non-performing, the financial system reins in credit.

<sup>2</sup> Latest directive issued in August 2013 for sector-specific risk-weights effective from December 2013.

<sup>3</sup> Guidance to assess the systemic importance of financial institutions, markets and instruments: initial considerations, International Monetary Fund, October 2009.

<sup>4</sup> Gersl A. and Petr Jakubik, “Pro-cyclicality of the Financial System and Simulation of the Feedback Effect, Czech National Bank, Financial Stability Report, 2009/10.

This causes economic activity to be affected adversely, showing up in low rates of growth of the economy, for instance. The consequent weakening in credit-worthiness of prospective borrowers causes the financial system to tighten the supply of credit further, which in turn has an impact on real sectors of the economy. Macro-prudential instruments like dynamic provisioning, counter-cyclical capital buffers can address this kind of risk.

**2.1.2. Contagion risk is the risk of the failure of one institution causing related institutions to fail-in turn causing more collapses and overall financial instability.** This may be due to inter-connectedness among institutions-for instance, when one financial institution has lent excessively to another financial institution that fails. Often, this interconnectedness exists between a few big FIs in the economy that control the majority portion of the economy's financial assets. A failure of only one institution in scenario such as this, can translate into economy wide financial distress. Note, that even perceived inter-connectedness among institutions may cause a loss of confidence in the entire system, result in run on bank scenario. Lack of information and complexity of intra-financial system activity can often contribute to this<sup>5</sup>. Macro-prudential regulations aimed at addressing public disclosure can tackle this type of risk.

**2.2. Macro-prudential policy instruments broadly have two aims.** The first is to strengthen the financial system's resilience to economic downturns and other adverse aggregate shocks. For example a policy instrument (like the counter-cyclical capital buffer) can mandate banks to increase capital in good times which can be drawn down during bad times. Availability of the buffer could provide a financial institution with the leeway to maintain the flow of credit even during downturns of the economic cycle. Second, macro-prudential policy instruments can help "lean against the wind" by pro-actively limiting the build-up of financial risks. The same instrument, i.e., the counter-cyclical capital buffer, requires banks to build up additional capital during good times which can modulate the hitherto excessive flow of credit.

**2.3. Table 1 below gives a brief introduction to the policy instruments being proposed for Bhutan.** Some instruments may only be applicable at specific times, i.e., when there is build-up of risks. This is true for the Sectoral Capital Requirement (SCR) and the Counter-cyclical capital buffer (CCyB). The other instruments are meant to be operationalised on an ongoing basis, with specific thresholds and limits being allowed to vary with the RMA's assessment of macro-financial risks. Moreover, two or more policy instruments may go towards addressing the same type of risk. For example, the CCyB and the time varying capital provisioning (TVCP) both aim to address pro-cyclicality. However, while the CCyB looks to address pro-cyclicality associated with the need to maintain minimum capital adequacy ratio requirements, the TVCP addresses pro-cyclicality in required loan loss provisioning. The SCR and the CCyB perform similar functions-mandating that FIs build a capital buffer during credit booms that can be drawn down during bad times. However, while the SCR addresses excessive credit flow to specific sectors, the CCyB addresses economy-wide credit booms. For this reason, the SCR and the CCyB need not be applicable at the same time.

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<sup>5</sup> Instruments of Macro-prudential policy, A Discussion Paper, Bank of England, Dec 2011.

**Table 1: Macro-prudential policy instruments**

<b>Instrument</b>	<b>Issue addressed</b>	<b>Description</b>
a) Leverage Ratio	Risk of increasing leverage during periods of economic and credit boom.	Increasing leverage of FIs may not be reflected in the capital adequacy ratios, due to the nature of risk weighting. Leverage ratio, calculated as the ratio of capital to total (non-risk weighted) assets may help capture this aspect.
<i>Status in Bhutan: No minimum requirement imposed by the RMA</i>		
b) Counter-cyclical capital buffer (CCyB)	Systemic risk associated with excessive overall credit growth in the economy.	<p>CCyB is based on the recognition that lending is pro-cyclical. That is, financial institutions lend excessively during good times. However, when times turn bad and their capital is threatened, FIs find it easier to reduce lending than increase the magnitude of capital in order to meet minimum capital requirements.</p> <p>Basel III recommends the use of a Counter-cyclical capital buffer that can be built during good times (reflected by the credit-GDP ratio exceeding its long term trend value by a certain threshold value), when risks are building up. These can be drawn down when times are bad to deal with capital losses. Thus minimum capital requirements can be met without adversely impacting the credit availability in the economy, which could otherwise exacerbate the economic crisis.</p> <p>Note that increasing the capital requirement against risk-weighted assets during credit booms may also work to modulate the credit flow.</p>
<i>Status in Bhutan: No policy on this yet</i>		
c) Sectoral Capital Requirements (SCR)	Risk to economy/ financial sector arising due to excessive flow of credit to one or more sectors.	<p>SCR requires capital buffers to be maintained against risk-weighted assets in certain sectors- specifically, those sectors that are witnessing excess flow of credit (and hence, risks).</p> <p>For example, the housing sector with a large share in the outstanding portfolio of credit may be experiencing high growth in credit flow in comparison with the economy as a whole. Easy credit may be fuelling an asset price boom by contributing to rising demand of housing units. Therefore, to avoid build-up of system wide risks, RMA may require FIs to hold capital buffers</p>

Instrument	Issue addressed	Description
		<p>against loans given to finance housing properties.</p> <p>In sum, SCR directly targets the sector that is contributing to the build-up of risks.</p>
<p><b>Status in Bhutan:</b> RMA imposes sector specific risk-weights. The latest circular (dated 13th August 2013) lists out various sectors and risk weights attached to all of them for the purposes of capital-adequacy calculations. It puts an additional risk weight of 50% on loans to sectors where the FI has an exposure greater than 20%. This is effective from 1<sup>st</sup> December, 2013.</p>		
d) Time varying capital provisioning	Systemic risk associated with pro-cyclical (specific) loan loss provisioning	<p>Generally, FIs make specific provisions out of their earnings as a fixed proportion of existing non-performing loans. Provisioning requirements are likely to be higher during times of economic distress since the quantum of non-performing loans is likely to be higher and the quality of the non-performing loans is also poor during the same period. This accentuates pro-cyclical by adversely affecting profits (and thus capital) when FIs need it the most. TVCP requires FIs to make dynamic provisions against expected losses such that these are higher during good times and lower during bad times. The higher provisioning during the good times can be used to compensate for loan losses that materialise during the bad times.</p>
<p><b>Status in Bhutan:</b> No binding requirement as of now. Prudential Regulations 2002 (Section 9.8.3), states that "FIs may provide dynamic provisioning of at least 30% of the total provisions during a high profit period".</p>		
e) Margin requirements	Funding risk for borrowers for loans against securities	<p>Securities can act as collateral for loans. The term 'margin' is used to describe the level of over-collateralisation required<sup>6</sup>. For instance, a 5% margin requirement means that securities worth Nu. 105 have to be kept as collateral against a loan amount of Nu. 100. These requirements, as imposed by individual financial institutions, can be pro-cyclical. During good times, risk management concerns may be on the backburner and FIs compete amongst themselves to attract borrowers. Reducing the margin requirement on collateral for prospective borrowers may be one</p>

<sup>6</sup> The Financial Policy Committee's Powers to Supplement Capital Requirements, a draft policy statement, Bank of England, January 2013.

Instrument	Issue addressed	Description
		<p>way of doing this. During bad times however, as defaults materialise and confidence falters, FIs may require existing borrowers to increase collateral kept with the FI, and demand securities of higher value from prospective borrowers.</p> <p>Since crises are also often concomitant with fall in value of securities, this increases the possibility of a credit crunch during bad times. A static or varying minimum margin requirement imposed by the regulator can prevent this pro-cyclicality.</p>
<p><b><i>Status in Bhutan: Practised internally by FIs as part of their internal credit risk management. No macro-prudential requirement imposed by the RMA.</i></b></p>		
f) Cap on Loan to Value ratio	Credit risk attached with fall in prices of collateral (particularly of real estate collateral)	<p>The loan to value ratio (LTV ratio) refers to the value of the loan advanced, relative to the value of the underlying collateral asset.</p> <p>If the loan amount is high as proportion to the value of the underlying asset, then this may translate into loan defaults in case of falling asset values. Given a certain fall in the price of the underlying asset, a higher loan-to-value increases the risk of non-repayment. This is simply because the borrower has less to lose if he/she defaults in this case, compared to a situation where he/she received a lower loan amount and had to furnish the difference between the value of the asset and the value of the loan advanced (down-payment), through his/her own resources.</p> <p>In the former case, the borrowers may be better off by defaulting on the loan and losing the asset, rather than repaying and retaining an asset losing its value.</p> <p>A cap on the maximum amount of the loan as a proportion of the value of the underlying collateral can partially mitigate this risk.</p> <p>While LTV limits are usually applied by individual financial institutions as part of their credit-risk management policies, an economy-wide cap brings more uniformity in practice.</p>
<p><b><i>Status in Bhutan: Practised internally by FIs as part of their internal credit risk management. No macro-prudential requirement imposed by the RMA.</i></b></p>		
g) Cap on loan	Credit risk due to	LTI limits are used to assess and ensure the

Instrument	Issue addressed	Description
to income/ debt to income	excessive leveraging of the borrowers	<p>borrower's repayment capacity. If after meeting all his/her debt obligations (including the one arising out of the loan applied for), the remaining income of the borrower is too little to meet other necessary/ committed expenditures (such as food, lodging, education, utilities etc.,) there is a higher risk of default attached. A cap on the total allowable debt to income can ensure that financial institutions do not lend to individuals with poor repayment capacities.</p> <p>While LTI limits are usually applied by individual financial institutions as part of their credit-risk management policies, an economy-wide cap ensures uniformity in practice.</p>
<p><b>Status in Bhutan:</b> Practised internally by FIs as part of their internal credit risk management. No macro-prudential requirement imposed by the RMA</p>		
h) Cap on debt-to-equity for project financing	Credit risk	A cap on the debt-equity ratio mandates that a certain proportion of a project loan must come from the borrower's resources (equity). This creates a financial interest in the project on the part of the borrower.
<p><b>Status in Bhutan:</b> Section 13.7 of the Prudential Regulations 2002 states that "FIs will not finance more than three-fourths of the cost of the project, and the borrower should be required to finance the remaining one-fourth of the project cost from primary sources".</p>		
i) Restrictions on distribution of profit	Balancing the interests of small deposit holders and the financial institutions' shareholders	Rationalizing distribution of profits can help promote banking sector health, as the retained profits may be used to prop up capital for bad times. Simultaneously, it is important to protect shareholder interest, as it contributes to FI capital over the longer term.
<p><b>Status in Bhutan:</b> Prudential regulations 2002 (Section 6.5) state that FIs that do not meet their minimum capital adequacy requirements have to enter a rehabilitation period to restore capital- "During the rehabilitation program, the financial institution is prohibited from paying out dividends to its shareholders, and must allocate the full amount of its profit to the statutory reserves." Section 11.2., 11.3 and Section 12 of the Prudential regulations also pertain to the distribution of dividends.</p> <p>Sections 82, 83, 84, 85 and 247 of the Financial Services Act 2011 impose conditions for distribution on profits.</p>		

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### **3. Macro-prudential regulations in Bhutan: Key Features**

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- 3.1. This section of the policy paper will take a close look at each of the proposed macro-prudential regulation.** In particular, it shall cover the objective and rationale of each regulation, delineate its key features, look at the relevant data of Bhutan's financial institutions and explain the mode of implementation with the help of an example. The discussion of each regulation will end with an implementation plan for the same.

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#### **Regulation 1. Minimum Ceiling on the Leverage Ratio**

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- 3.2. The leverage ratio acts as a supplementary measure to capital adequacy ratio by ensuring that financial institutions maintain adequate levels of capital at all times.** Note that capital adequacy is measured by the ratio of capital to risk-weighted assets. The underlying logic is that FIs must set apart capital in line with the riskiness of their asset portfolio. Risk-weights can be calculated in various ways. Basel I attached fixed risk weights to different kinds of assets, based on the nature of the instruments. Basel II allowed banks to move to 'Internal Ratings-Based approaches' of calculating risk weights. The financial crisis of 2008 revealed that many FIs took advantage of the system to understate the riskiness of their exposures and were hence able to maintain lower capital than necessary. As a response, Basel III mooted the concept of a leverage ratio as a 'backstop' measure wherein, capital could not fall below a certain proportion of total on and off balance sheet exposures of a FI, regardless of the capital adequacy ratio it maintained.
- 3.3. Though Bhutan is on Basel I, the leverage ratio measure is still relevant for it.** As mentioned above, FIs in Basel I compliant countries follow regulator-specified risk-weights. Hence, it could be argued that FIs should not be required to calculate the leverage ratio. However, this view overlooks the fact that the nature of risk-weighting (as practised by the regulator) may itself be sub-optimal or inadequately dynamic. Leverage ratio, by doing away with risk-weighting completely, ensures that capital at all times is more than a certain threshold, irrespective of how risky assets are perceived to be.
- 3.4. Note that the leverage ratio and the capital adequacy ratios are to be maintained at the same time.** As mentioned above, the leverage ratio treats all assets equally, irrespective of the inherent riskiness of the asset. On the other hand the core/CAR requirement requires capital accumulation in line with the riskiness of the asset portfolio of the FI. These ensure that FIs do not keep disproportionately high share of risky assets to earn the relatively high expected future returns attached. Hence the leverage ratio is a 'supplement' to the traditional risk weighted measure of capital adequacy.

**3.5. Basel III and the current proposed regulation require the leverage ratio to be calculated as the ratio of Tier 1 capital to total assets.** The measure of Tier 1 capital is as defined under Section 6.3.1 of the PR 2002. Total assets refer to the sum of on and off-balance sheet exposures of FIs. 'On balance sheet' exposures are to be included in the denominator measuring by netting out specific provisions and interest in suspense account. To calculate the credit-equivalent of off-balance sheet exposures, the entire notional value of such exposures must be multiplied by a 'credit conversion factor'. MPR 2014 requires this factor to be 100%, which is equivalent to multiplying the notional value of the off balance sheet exposure by 1.

**Box 1 : Illustration of the Leverage Ratio**

The assets of a bank are given in Table 2. Columns A and B in Row 11 of the table give total assets (on and off balance sheet) and risk weighted assets respectively. Risk weighted assets are arrived at by multiplying the assets with corresponding risk weights (as specified by the regulator). The leverage ratio is calculated by dividing tier 1 capital by total assets (12/ 11A) while core CAR is calculated by dividing tier 1 capital by risk weighted assets (12/ 11B). Since risk-weighted assets are lower than total assets (given that all the risk-weights are less than or equal to 100%), the core CAR turns out to be higher than the leverage ratio (12.1% Core adequacy ratio as against 9% leverage ratio).

**Table 2: Comparison of Leverage Ratio and Core CAR**

	Particulars	Assets (Nu. Million)	Risk Weighted Assets (Nu. Million)
		A	B
1	Zero-Risk Weighted Assets	438	0
2	20% Risk Weighted Assets	293	59
3	50% Risk Weighted Assets	0	0
4	100% Risk Weighted Assets	1691	1691
5	<b>Total On balance sheet assets (1+2+3+4)</b>	<b>2422</b>	<b>1750</b>
6	Off Balance Sheet items (Net of Margin Money)		
7	Letters of Credit (100% risk weight)	51	51
8	Financial Guarantees (100% risk weight)	66	66
9	Other Guarantees (100% risk weight)	126	126
10	<b>Total Off balance sheet assets (7+8+9)</b>	<b>243</b>	<b>243</b>
11	<b>Grand Total (on and off balance sheet)</b>	<b>2665</b>	<b>1993</b>
12	Tier I Capital (13+14+15+16)		240
13	Paid-Up Capital		50
14	General Reserves		60
15	Share Premium Account		30
16	Retained Earnings		100
17	Leverage ratio (%) ( 12/11 A)		<b>9.0%</b>
18	Minimum Requirement		3%
19	Core Capital Adequacy ratio (%) (12/11 B)		<b>12.1%</b>

- 3.6. The minimum leverage ratio that all financial institutions have to maintain is 3%. This has to be reported to the RMA on a quarterly basis.
- 3.7. **The effective date of the leverage ratio is 7th May 2014.** However, FIs will be required to report and adhere to the minimum leverage ratio by 1<sup>st</sup> November 2014. Given the existing high capital base of FIs, and the fact that the MPR 2014 does not impose any additional informational or computational burden, a time-frame of six months for compliance is deemed to be adequate.

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## **Regulation 2. Counter-cyclical capital buffer**

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- 3.8. **The CCyB aims to safeguard the intermediation activities of financial institutions by ensuring they have adequate capital in hand during the downward phase of the economic cycle.** This is done by building buffers when the economy is in good shape and experiencing a credit boom. As discussed above, the flow of credit exhibits strong pro-cyclical tendencies i.e., credit is likely to experience rapid growth during economic boom and deceleration during economic slowdown/stagnation. In particular, periods of economic boom witness excessive credit growth, generally associated with irrational exuberance and dilution of underwriting standards. The realistic risk position becomes evident with deterioration of asset quality during economic downswings. The consequent constrained capital position, relative to the minimum capital requirement, may lead FIs to decrease their lending (assets) instead of increasing the magnitude of capital<sup>7</sup>. The decrease in lending and the resultant stagnation in economic activity exacerbate the economic crisis, in turn worsening the financial crisis. The CCyB can alleviate this situation.
- 3.9. **The CCyB operates by building capital buffers during ‘good times’, which can be drawn down during adverse macro-financial situations.** When the regulator judges the macro-economic situation to be one where credit is booming (and risks are building), it asks all FIs to build up additional capital over and above the existing prudential capital requirements. When the regulator assesses that the economy is in a downturn phase, it may call for the buffer to be released. In this case, the buffer capital may be used by the FI to cover its unexpected loan losses, so that it is not strained to meet its minimum capital adequacy requirements during downturns. This in turn decreases the likelihood of a disruption in credit flow.

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<sup>7</sup> Counter-cyclical capital buffers as a macro-prudential instrument, December 2012, Riksbank studies, Sveriges Riksbank.

- 3.10. **The regulation suggests that the RMA use the gap of the credit-GDP ratio from its trend value (henceforth, ‘Gap’) as the primary indicator to operationalize the CCyB in Bhutan.** It may also use other qualitative and quantitative indicators to strengthen its decision on this account. This echoes Basel III’s prescription of the regulator operationalizing the buffer “after using the best information available to gauge the build-up of system-wide risk”<sup>8</sup>. The following steps are to be taken in using the ‘Gap’ as the indicator of measuring the build-up of systemic risk.

**Step 1:**

Calculate the Credit-GDP ratio for period t

$$\text{Credit-GDP Ratio} = \text{Credit}_t / \text{GDP\_nominal}_t$$

Where  $\text{Credit}_t$  is the broad measure of nominal credit to the non-government sector (i.e. credit to the private sector and public sector undertakings) in period t and  $\text{GDP\_nominal}_t$  is the nominal GDP of the country in period t.

**Step 2:**

Calculate the trend value of the GDP ratio (Any kind of statistical filter could be used such as Hodrick Prescott).

**Step 3:**

Calculate the difference between the actual credit-GDP ratio and the trend value, i.e. the ‘Gap’.

- 3.11. **According to the Basel Committee, if the Gap exceeds 200 basis points, the regulator may operationalize the buffer.** Note that the ‘trend’ value may be understood as the value that the credit-GDP ratio would take in normal circumstances, i.e. during the times when there is neither a credit boom nor a crunch. If the observed credit-GDP ratio at a point in time is higher than this value, it may be indicative of overheating. The 200 basis point difference is a cut-off that the Basel Committee finds as the most suitable threshold for operationalisation of the buffer. However, for developing countries like Bhutan the threshold of 200 basis points may be too low. This is because the financial systems in such countries are still in the evolutionary stage- a 200 basis point Gap between observed and trend values of the credit-GDP ratio may be reflective of financial deepening, rather than temporary overheating. Hence, a higher threshold seems desirable for these countries. Accordingly, the threshold for Bhutan is kept at 500 basis points.

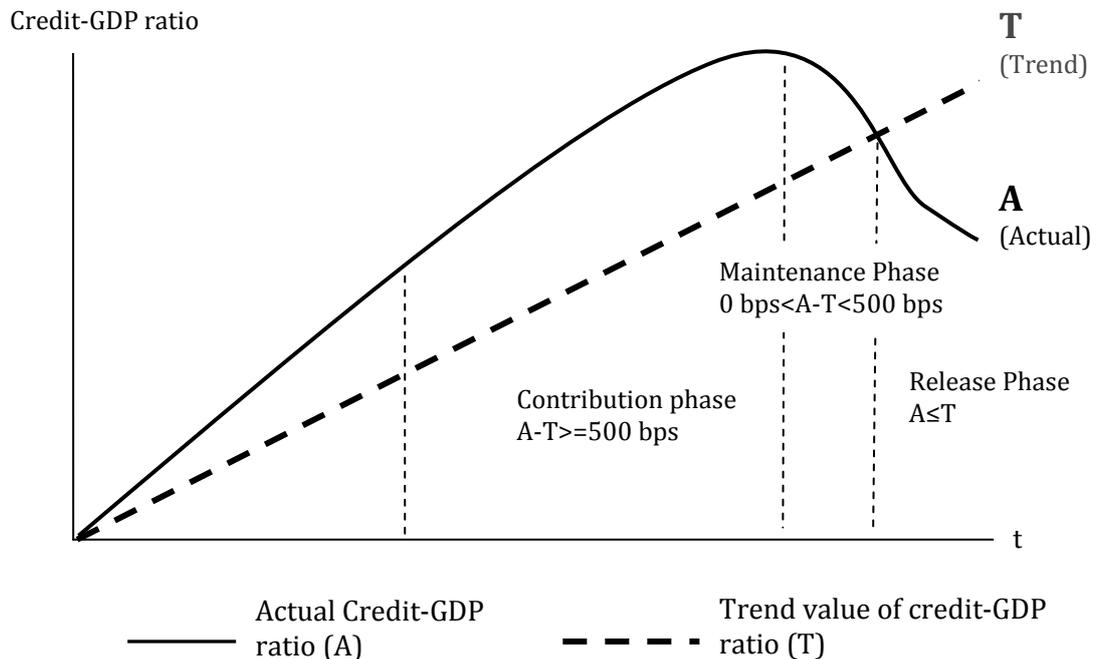
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<sup>8</sup> Guidance for national authorities operating the countercyclical capital buffer, Basel Committee on Banking Supervision, December 2010.

**Table 3: The Gap and Corresponding size of the buffer**

<b>Gap measured in basis points (bps)</b>	<b>Size of the buffer (as % of Risk Weighted Assets)</b>
500 bps and above but below 600 bps	0.5
600 bps and above but below 700 bps	1
700 bps and above but below 800 bps	1.5
800 bps and above but below 900 bps	2
900 bps and above but below 1000 bps	2.25
1000 bps and above	2.5

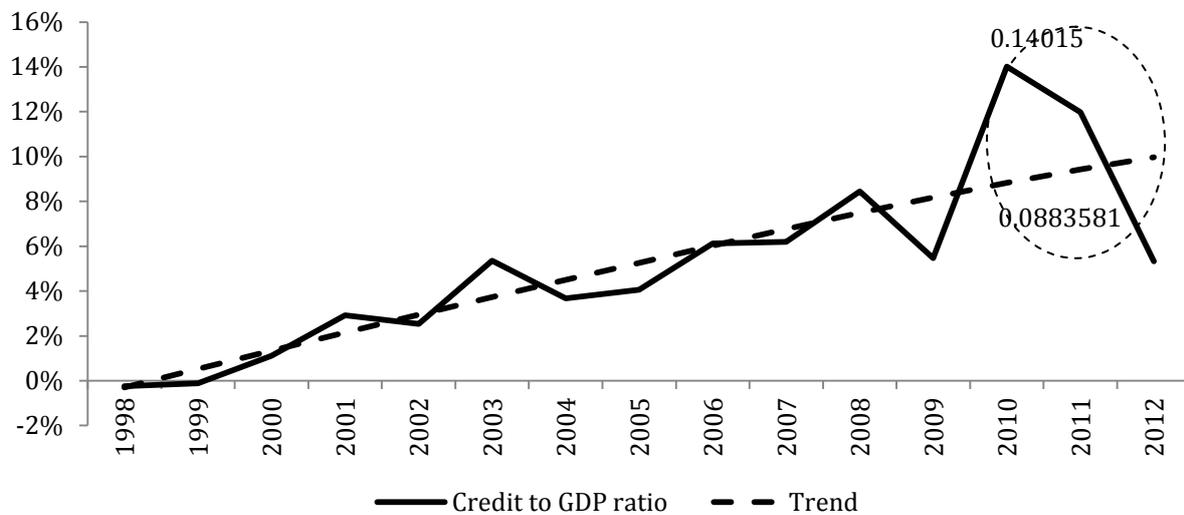
- 3.12. **The size of the buffer to be built up depends on the ‘Gap’.** As given by Table 3 above, a Gap greater than or equal to 500 basis points ( $A-T \geq 500$  bps in Figure 2) will lead to operationalisation of the buffer. The maximum size of the buffer is 2.5% of a financial institution’s risk-weighted assets and will be applicable when the Gap is 1000 basis points or more. The period when financial institutions build up their capital in accordance with the size of the observed Gap, is known as the **Contribution phase**. Note that no contribution will be required if the financial institution already has enough capital to meet the minimum prudential requirements and the requirement imposed by way of the CCyB. In case, it has less capital than that required to meet both these requirements, additional infusion shall be required.
- 3.13. **When the Gap falls below 500 basis points ( $0 \text{ bps} < A-T < 500 \text{ bps}$  in Figure 2), the RMA shall ask FIs to continue to maintain the additional capital that was accumulated on account of the CCyB during the contribution phase.** This is known as the **maintenance phase**. Even though the risk-weighted assets of the financial institutions may increase during the maintenance period, they will not be asked to infuse more capital than was done during the time that the buffer was built.
- 3.14. **When the Gap falls to zero or below ( $A \leq T$  in Figure 2), the RMA shall ask the financial institutions to release the buffer.** Hence this is known as the **release phase**. The release of capital simply means that the core CAR requirement of FIs is now 5% of risk-weighted assets, as prescribed by the PR 2002. The released capital may be used to meet unexpected losses during the bad phase or for lending purpose.

**Figure 2: The three phases of the Counter-cyclical Buffer**

- 3.15. **The CCyB has to be met with Tier 1 Capital.** This means that the reported Tier 1 capital should be adequate to meet the minimum capital requirements and the counter-cyclical capital buffer imposed. The buffer does not have to be set apart in a separate account. However, financial institutions will be required to report the buffer capital as a memo item in MIP2 of the liquidity returns currently submitted to RMA.
- 3.16. **The regulation requires that the rationale of the buffer decision be communicated to all concerned financial institutions.** Such a practice is also encouraged by Basel III. An explanation of why the buffer is being implemented is seen to be important in order to promote transparency. Moreover if FIs have a clear understanding of the situation in which the buffer is to be applicable, they may be encouraged to take pre-emptive action of their own volition. The RMA could choose to periodically carry out an assessment of macro-financial conditions, publicly disclosing whether there is any possibility of a macro-prudential instrument being applied in the near future. The release of the Financial Stability Report may provide this opportunity.
- 3.17. **The implementation of the CCyB should overlap with a sectoral approach.** The CCyB is said to be a crude instrument since it does not address the source of the build-up of risk. That is, the excess build-up of credit may be due to lending to a particular sector. Yet, the CCyB imposes a blanket increase in capital for all exposures, thus failing to provide sharp incentives to FIs to decrease lending to the specific sector. The macro-prudential regulation on sectoral capital requirements would be important in this respect. It would be advisable for the RMA to judge if one or few sectors are responsible for the increase in credit, and then use that regulation, first to augment capital as well as to prevent the risk build up. If the build-up of credit and attendant risks spans across the sectors, imposition of the general CCyB would be the logical step. In essence, the RMA must use its judgement whether to apply the CCyB or the sectoral approach. Ideally the CCyB should not be deployed when the SCR is operational.

**3.18. Data analysis for Bhutan reveals one year in which the credit-GDP gap exceeded its trend value by more than 500 basis points.** The buffer size operational in the corresponding period (2010) would have been about 0.5% of the risk-weighted assets. The GDP data used is as reported by the National Statistical Bureau between 1998 and 2012. Credit data was taken from the Monetary Survey, and the measure of credit taken was ‘private sector credit +other public sector’. The ‘other public sector’ includes government corporations and the public sectors but excludes lending to the government. The reason for this is that credit to the government is itself likely to be low during good times and high during bad times, in line with the operation of fiscal policy. The trend value of the Credit-GDP ratio was calculated using the HP filter. The actual credit to GDP ratio and its trend is shown below in Figure 3.

**Figure 3: Credit-GDP ratio and its HP trend**



Source: National Statistical Bureau and Monetary Survey, RMA

- 3.19. The RMA may also use other indicators to supplement its decision to operationalize the buffer.** As noted above, a high credit-GDP ratio may be a result of desirable financial deepening rather than excessive credit build-up. This was possibly true for Bhutan where 2010 saw the entry of three new entrants in the banking sector as well as an insurance company (that is allowed to lend). Hence the RMA may have to consider all qualitative information available to take a decision on operationalising the buffer. It may look at other supplementary indicators as well to make a decision. This is allowed by section 2.8.1(b) in MPR 2014. One such indicator would be the credit to deposit ratio where the denominator (deposits) would increase simultaneously with credit, in the event of financial deepening.
- 3.20. Going forward, for better judgment of risk build-up, the RMA should consider strengthening its monitoring database.** For example, qualitative surveys on quality of underwriting (on the lines of the Senior Loan Officer Survey in the US), an index of asset prices will go some way in revealing a more accurate picture of potential risks. The RMA would also likely gain from international lessons in policy implementation that will emerge as more and more countries employ macro-prudential policies.

**Box 2: Illustration of CCyB**

Consider a situation where the Gap is a little above 500 basis points. This would lead the RMA to set a buffer equalling a size of 0.5% of risk weighted assets. Further, consider three banks in the economy whose capital position is given by the Table 4 below. As is evident, Banks A and B have more capital than the minimum core CAR requirement imposed by the PR2002. Moreover, when the CCyB is imposed, the capital required on that count (Column 7) is less than the excess capital held by the two banks (Column 5). On the other hand, Bank C initially has just enough capital to meet the 5% minimum requirement on the core CAR. As a result, when the CCyB requirement equalling 0.5% of risk-weighted assets is imposed, it shows a shortfall of Nu. 21 million worth capital. This has to be infused by the bank.

**Table 4: Illustrative impact of CCyB on banks**

Bank	RWA (Nu. Mn)	Tier 1 Capital held (Nu. Mn)	Required Tier-1 capital as per PR 2002 (Nu. Mn)	Core CAR	Excess Tier- 1 capital (Nu. Mn)	Required Tier-1 capital for CCyB (Nu. Mn)	Capital injection required?
1	2	3	5= (2*5%)	5= (3/2)	6= 3-4	7= (0.5% *2)	8= (7-6)
A	2400	192	120	8.0%	72	12	No
B	2160	194	108	9.0%	86	10.8	No
C	4200	210	210	5.0%	0	21	Yes

- 3.21. **While the effective date for this regulation is 7th May 2014, the financial institutions and the RMA may need more time to adjust to the provisions of this regulation.** In particular, the RMA may need time to set up monitoring of relevant indicators, enhance staff capacity for monitoring and forecasting data etc. Moreover, Basel III advocates that countries implement the CCyB post 2016, operationalising the buffer as and when risks emerge. Accordingly, the RMA may wait till 2016 before deploying the counter-cyclical capital buffer.

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### Regulation 3. Sectoral Capital Requirement

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- 3.22. **SCR plays a dual role of mitigating emerging risks to the financial system during economic boom and enabling expansion of credit growth to revive the economy during economic slowdown/ stagnation.** It is envisaged as an additional capital requirement imposed against exposures to sectors which are perceived as contributing towards build-up of significant risks to overall financial stability during economic booms. The availability of this additional capital during periods of economic downturn may allow FIs to meet their minimum capital requirements without decreasing their lending. This in turn would lead to smoother credit flows than would be observed otherwise. Apart from this, the imposition of higher capital requirements on sector-specific exposures also facilitates moderation of credit to the risky sectors by making it more expensive for them to lend to the sectors in question.

- 3.23. The criteria for selection of the sectors requiring the imposition of SCR is as follows:

3.23.1. The sector(s)/sub-sector(s) shall be subject to sectoral capital requirements if the sector in the last 12 quarters:

- i. has an average share of 15% or more in the aggregate outstanding credit of the economy. This shall be calculated by taking the share of a sector in the total outstanding credit at the end of each quarter and averaging the same over the last 12 quarters i.e.,  $\frac{\sum_{j=1}^{12} S_{ij}}{12}$ , where  $S_{ij}$  is the share of the  $i^{\text{th}}$  sector in aggregate credit  $j^{\text{th}}$  quarter.
- ii. exhibits a higher growth of at least 500 basis points over the growth rate of outstanding credit in the economy. This shall be calculated as follows:
  - a. calculate the Year-On-Year (Y-O-Y) growth rate of outstanding credit of the economy and of the sector at the end of each quarter for past 12 quarters;
  - b. Take the average of the Y-O-Y growth rate of the outstanding credit of the economy (X) and the sector (Y);
  - c. Take the difference of Y and X.

3.24. **The RMA may exclude sectors which it deems are critical to the social and economic development of Bhutan.** For example, loans to hydro-power or agricultural sectors may be excluded. Similarly, if in the backdrop of a natural disaster, loans to housing and construction increase at an unprecedented rate, the RMA may consider the mitigating circumstances before deciding to impose SCR on loans given to the sector.

3.25. Applying the same criteria to current data for Bhutan reveals that if the RMA were to implement the regulation at the present time, 'personal loans' would be a possible candidate for SCR. We carry out the necessary calculation in 2 steps.

**Step 1:**

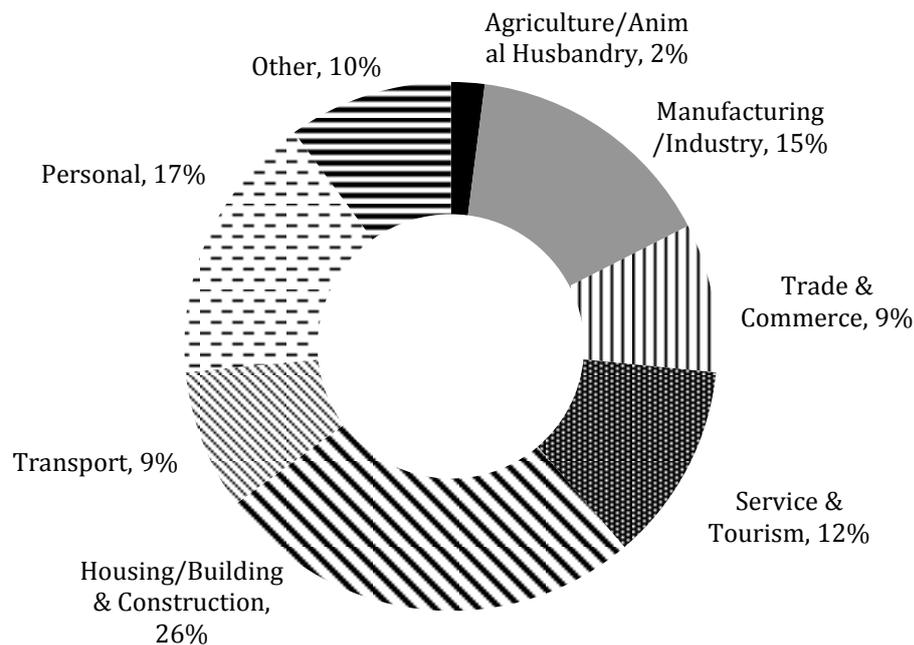
3.26. Identify the sectors accounting for more than 15% of the overall loan portfolio

3.27. Based on the data for the 12 quarters preceding (and including the quarter ending September 2013), the sectors having a share of more than 15% of the entire loan stock are-

- Personal Loans,
- Housing/ Building and Construction loans and
- Manufacturing/Industry loans

3.28. This can be seen from Figure 4 below. Share of each sector is obtained by first calculating the share of credit outstanding to a particular sector as a percentage of total credit outstanding at the end of each quarter. Then the average of this ratio for the past 12 quarters (preceding and including the ratio for the quarter ending September 2013) is calculated.

**Figure 4: Average share of sectors in overall credit outstanding (Dec-10 to Sep-13)**



Source: Financial Regulation and Supervision Department, RMA

**Step 2:**

- 3.29. Examine the average growth rates of credit to each of the sectors identified in Step 1 and compare with the average growth rate of total outstanding credit.
- 3.30. Table 5 shows average growth rates of outstanding credit to the sectors identified in Step 1 and the difference with respect to overall growth rate for the period encompassing 12 quarters preceding and including the ratio for the quarter ending September 2013. The average growth rate of outstanding credit to a particular sector is arrived at by first calculating the year-on year growth rate of credit for every quarter.

Y-O-Y growth rate of Quarter  $i$

$$= \left[ \frac{\text{Credit Outstanding at the end of Quarter}_i \text{ of Year}_t}{\text{Credit Outstanding at the end of Quarter}_i \text{ of Year}_{t-1}} - 1 \right]$$

3.31. Subsequently, this growth rate is averaged over the past 12 quarters, preceding and including the growth rate for the quarter ending September 2013. This calculation is carried out for credit outstanding in each sector and overall. The difference of these two averages is shown in Column 3 of Table 5.

**Table 5: Difference in Average Quarterly (Y-O-Y) Growth Rates (Dec-10 to Sep-13)**

(1)	(2)	(3)
Sector	Average Growth Rate In percent	Difference from Growth rate of Overall Portfolio In basis points
Manufacturing/Industry	33%	1000
Housing/Building & Construction	26%	300
Personal	35%	1200
Aggregate credit <sup>9</sup>	23%	0

3.32. As is evident, Personal loans, comprising 17% of the overall portfolio on average, grew at a rate roughly 1200 basis points higher than the rate at which the overall loan portfolio grew. Clearly, by the criteria we have outlined above, Personal loans is a potential candidate for sectoral capital requirements.

3.33. **Manufacturing/Industry grew at a rate of 33%, about 1000 basis points higher than overall credit growth rate.** The sector constitutes more than 20% of GDP. Based on the criteria outlined above, it should be subject to sectoral capital requirements. However, given the size of the sector it may include various sub-sectors which are not contributing to building up of risk and are also critical for the socio-economic development of Bhutan. For example, micro, small and medium enterprises (MSME) and electricity, gas and water sub-sectors are critical for development of Bhutan. Similarly, risks may not be same across various sub-sectors of manufacturing / industry which includes sawmill, mining and quarrying, manufacturing, electricity, gas and water, MSME, and export packaging credit. In the absence of such data, it may be difficult to identify the particular sub-sector requiring the accumulation of additional capital.

3.34. Lastly, loans to the “Housing/Building and Construction” sector grew at a rate 300 basis points higher than the growth rate of the overall stock of loans. This does not meet the minimum criteria of 500 basis points.

<sup>9</sup> Aggregate credit refers to non-government sector credit, i.e. credit given to the private sector and public sector undertakings.

3.35. **Note that when the second criteria is not met by a sector any longer, the RMA may direct financial institutions to stop contributing to the SCR.** In other words, the difference between the average growth rate of outstanding credit to a particular sector and the average growth rate of total outstanding credit falling below 500 basis points should mean no additional capital is built up on account of the SCR in that sector. Subsequently, financial institutions can utilize the capital accumulated on account of this regulation in a manner they deem fit, as long as all stipulations of the PR 2002 are met. However, the draw-down of capital in a quarter must not exceed 25% of the amount accumulated. This is to ensure that the released capital is not immediately pumped to extend credit to the risky sectors.

### Box 3: Illustration of SCR

Suppose that out of six sectors in Bhutan, the RMA (on the basis of the criteria outlined above) decides to impose SCR for four sectors. The assumed size of the SCR imposed, as a percentage of risk-weighted assets in that sector is given by Column E of Table 6 below. As can be seen, two sectors (Sector 5 and Sector 6) require no SCR. Column C of the table shows a bank's hypothetical outstanding credit in the sectors. Column B lists the illustrative risk-weights that may have been applied by the RMA on each of the sector. The product of the entries of Columns B and C yields the risk-weighted assets of the bank in the six sectors respectively. The amount of additional capital that the bank is required to keep against its specific exposures to Sectors 1 to 4 is given by Column F of the table. It is computed by multiplying the sector-specific risk weighted assets of the bank with the imposed sectoral capital requirement. Adding up the entries of Column F shows that the total additional capital that the bank is now required to hold on account of the proposed regulation is Nu. 28 million. Expressed as a percentage of total risk weighted assets (irrespective of sector), this comes to 1.4%. This in turn is lower than the maximum allowable size of the overall SCR-2.5% of total risk weighted assets.

**Table 6: Example of impact of imposed SCR on a fictional bank**

A	B	C	D= (B*C)	E	F= (D*E)
Sector	Risk Weight (in %)	Outstanding credit ( Nu. Mn)	RWA	Assumed SCR (% of RWA in the sector)	SCR (Nu mn)
1	20	876	175	1.5%	3
2	50	321	161	2.0%	3
3	100	573	573	3.0%	17
4	40	738	295	1.8%	5
5	150	426	639	0.0%	0
6	40	631	252	0.0%	0
		<i>Total RWA=</i>	<i>2096</i>	<i>Total SCR</i>	<i>28</i>
				<i>SCR (as % of total RWA)=</i>	<i>1.4%</i>
				<i>Maximum Limit</i>	<i>2.5%</i>

- 3.36. **Like the CCyB, any SCR imposed shall be met with Tier 1 capital.** This means that the reported Tier 1 capital should be adequate to meet the minimum capital requirements and the SCR imposed. The Sectoral Capital Requirement does not have to be set apart in a separate account. However, financial institutions will be required to report the buffer capital as a memo item in M1P2 of the liquidity returns which is currently submitted by financial institutions to the RMA.
- 3.37. The SCR imposed by the RMA at any particular time must be less than or equal to 2.5% of a financial institution's total risk-weighted assets.
- 3.38. **While the effective date for this regulation is 7th May 2014, financial institutions and the RMA may need more time to adjust to the provisions of this regulation.** In particular, the regulation above requires the RMA to judge the extent of risk build-up in a particular sector and the possible losses that are likely to ensue if the exposures to that sector turn non-performing. Accordingly, like the CCyB, the SCR should be implemented post 2016.

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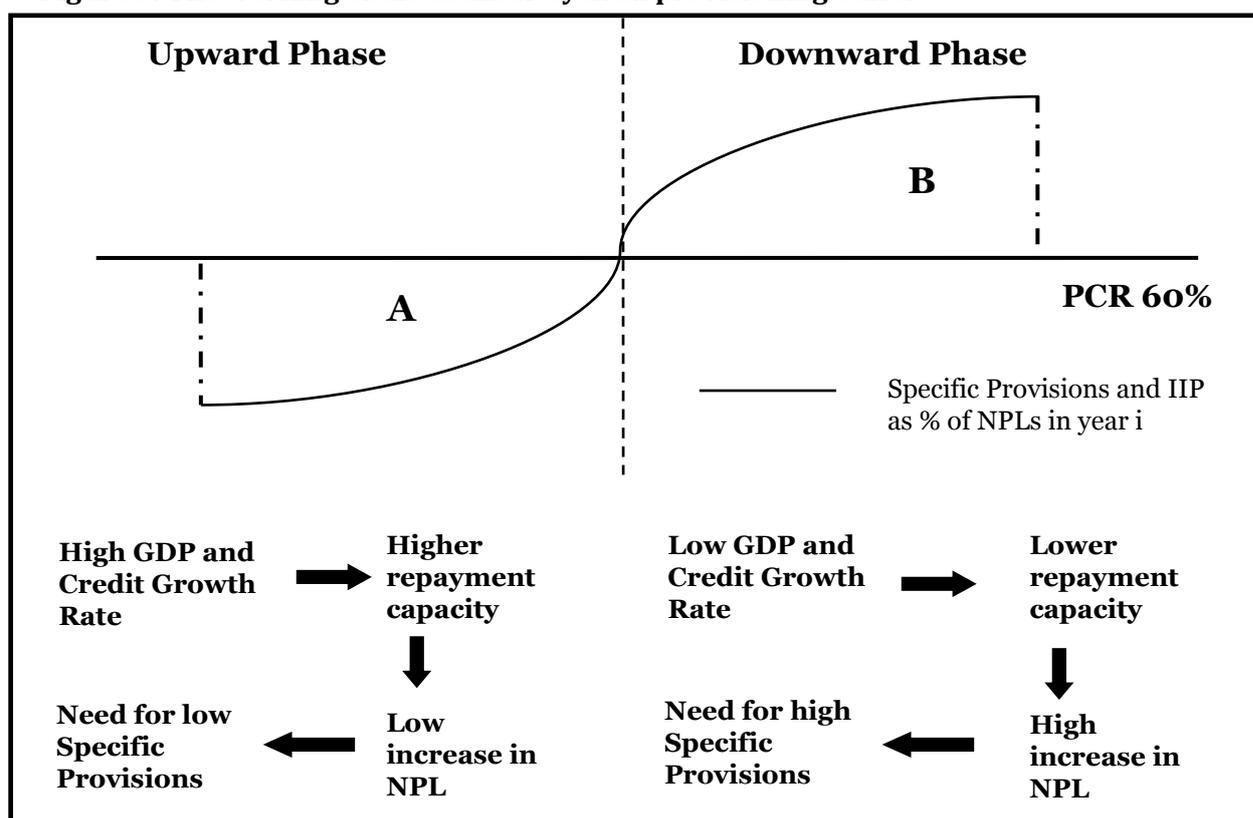
#### **Regulation 4. Time varying capital provisioning and margin requirements**

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- 3.39. **Time varying capital provisioning helps ease the burden on financial institutions exerted on them while maintaining specific provisions against non-performing loans.** As per PR 2002, financial institutions are required to keep specific provisions as a proportion of various categories of non-performing loans. During economic booms, repayment capacity is better. Hence, the yearly increase in non-performing loans is low. As a result, the provisioning requirement is low as well. However, during downturns, when economic distress is reflected in non-repayment of loans, the provisioning requirements increase. Since provisions are to be adjusted from profits, this may pose risks to financial institutions' sustainability. The regulation on TVCP requires FIs to maintain a buffer of provisions during the good times, which could be used to augment the specific provisions during bad times.
- 3.40. **MPR 2014 uses the concept of a Provisioning Coverage Ratio (PCR) to operationalize the above principle.** The idea behind it is to ensure that FIs maintain a PCR of 60% of additional gross NPLs on a yearly basis. This is represented by the horizontal line in Figure 5. The PCR would subsume within it the increase in mandatory specific provisions, interest-in-suspense account (IIS), plus certain excess provisions. However this excess provisioning is only expected to be present during good times. Note that during good times (represented by an economic and credit boom), NPLs and the incremental change to it are low. Hence, the corresponding additional specific provisioning (and IIS) required is also low-presumably lower than the stipulated PCR of 60% of additional gross NPLs. The amount of excess provisioning can be depicted by 'A' in the figure below. These excess provisions will add to a 'counter-cyclical provisioning buffer'.

3.41. **In bad times, the additional NPLs and hence the required provisioning against it will be relatively high.** The specific provisioning required is likely to be higher than the mandated PCR ratio of 60%. In those times, maintaining the PCR itself will be a redundant exercise. However, the provisioning buffer accumulated during the good times may be now drawn down to meet the high specific provisioning requirement (B in figure below). This in turn ensures that financial institutions face less pressure on their profits during times of overall economic distress.

**Figure 5: The working of the Counter-cyclical provisioning buffer**



3.42. The PCR has to be calculated on a yearly basis in the following manner:

$$\frac{\text{Specific Provisions owing to additional NPLs in year } i + \text{addition to interest-in-suspense account in year } i + \text{accretion to counter-cyclical provisioning buffer in year } i}{\text{Additional gross NPLs in year } i} \times 100$$

3.43. **It is possible that NPLs do not increase every year.** It may also decrease. In that case, financial institutions shall have to keep a PCR equal to 50% PCR provisioning made in the preceding year. Since there is no additional specific provisions required in that year, the entire PCR will add to the counter-cyclical provisioning buffer. Note that the philosophy of time-varying capital provisioning requires buffers to be built when times are good.

**Box 4: Illustration of Time varying capital provisioning****Table 7: Example of Counter-cyclical Provisioning Buffer**

	Year	Gross NPL in year i	Additional NPL in year i	Additional specific provisions in year i	Additional IIS in year i	Required PCR	Accretion to the buffer year i	Countercyclical provisioning buffer (Stock)	
	1	2	3	4	5	6 = (60%* Col. 3)	7 = (6-5-4)	8	
<b>Upward Phase</b>	1	100	100	50	4	60	6	6	<b>Accumulation Period</b>
	2	205	105	52	4	63	7	13	
	3	315	110	54	4	66	8	21	
	4	431	116	56	4	69	9	29	
	5	553	122	58	5	73	10	39	
	6	680	128	61	5	77	11	50	
	7	814	134	63	5	80	12	62	
<b>Moderate Phase</b>	8	959	145	71	6	87	10	72	
	9	1115	156	79	7	94	8	80	
	10	1284	169	89	7	101	5	85	
	11	1466	182	100	9	109	1	86	
<b>Downward Phase</b>	12	1663	197	111	10	118	-3	83	<b>Utilization period</b>
	13	1884	221	132	12	132	-11	72	
	14	2131	247	155	14	148	-21	51	
	15	2407	277	183	17	166	-34	17	

In Table 7 above, till year 7, the economic cycle is in an upward phase. This is approximated by a relatively low growth rate of NPL (5%) and attendant specific provisions (see Table 8 for assumptions). During this period, the PCR requirement is binding in the sense that the sum of additional specific provisions required and interest in suspense account is lower than 60% of additional NPLs. The excess provisioning on account of the PCR is then 'accretion to the counter-cyclical provisioning buffer' shown in Column 7 of Table 7. The size of the buffer stock in the corresponding year is shown in Column 8 of the same table.

3.44. **This is certainly the case when a financial institution experiences decrease in NPLs.** At the same time, imposing very high provisioning requirements on an institution that has managed to reduce its NPLs may distort incentives for financial institutions. In other words, if such financial institutions are systematically asked to keep higher provisioning than FIs experiencing a yearly increase in NPLs, this may discourage banking practices aimed at ensuring sound asset quality. The current provision in the regulation balances both of these concerns.

**Box 5: Assumption for TVCP**

**Table 8: Assumed year-to-year growth rates**

	<b>Growth in NPL</b>	<b>Growth in specific Provisions</b>	<b>Additional Interest-in Suspense A/C</b>
Upward Phase	5.0%	4.0%	4.0%
Moderate Phase	8.0%	12.0%	14.0%
<b>Downward Phase</b>	<b>12.0%</b>	<b>18.0%</b>	<b>20.0%</b>

Year 8 marks the beginning of the economy's moderate phase. The increase in NPLs in this phase is higher than before (8%, seen in Table 8), but the extent of specific provisions required against the additional NPLs still allows for a positive accretion to the buffer. The increase in the size of the buffer however slows down. The economic cycle enters its downward phase in Year 12. The NPLs increase at a high rate of 12% (Table 8) every year. It is likely that this increase is accompanied by a shift of the distribution of NPLs-where a disproportionate share of NPLs is loss assets. This in turn means that the specific provisioning requirement increases at a higher rate. In fact, the additional specific provisions and interest in suspense now exceed 60% of additional NPLs. Consequently, the financial institution in discussion can reduce its buffer to meet this high requirement. The reduction in the buffer can be seen from Column 7. The size of the buffer decreases (Column 8), though still remaining positive.

3.45. **By imposing margin requirements, the proposed regulation aims to mitigate funding risks in loan against securities.** It is often seen that financial institutions' underwriting standards are largely pro-cyclical. When times are good, FIs may be willing to compete amongst themselves in order to lend and risk management concerns are placed on the back-burner. This may lead to lower rates of interests or lower margins. On the other hand, when times turn bad, FIs may adopt caution and ask for higher margin against securities kept as collateral. This may be also necessitated by a fall in the value of securities-likely in an adverse economic scenario. Such demands increase the uncertainty attached with funding. A minimum margin requirement at all times can mitigate this risk.

3.46. **Table 9 lists minimum margins against different securities.** The minimum margin to be kept against shares and corporate bonds is 50% of the market or face value of the security, whichever is lower. The minimum margin to be kept against government securities is lower at 20% of book value to reflect the risk characteristics of the instrument. If individuals borrow against corporate bonds, then the maximum size of loan that can be advanced is Nu. 2 million. Once a rating agency is set up in Bhutan that can attest to the safety or riskiness of different corporate bonds, this ceiling may be dispensed. A similar ceiling is not applicable for loans against government securities or shares. This is to encourage the development of capital markets in Bhutan.

**Table 9: Minimum Margin Requirements and Ceilings**

Type of Security	Minimum Margin required	Ceiling on Loans Given to Individuals (in Nu)
Government Securities	20%	None
Corporate bond	50%	Up to 2 million
Shares	50%	None

**Box 6: Illustration of Margin Requirements**

Consider 100 Government securities each with a face value of Nu. 10 and an overall worth of Nu. 1000. If a borrower applies for a loan of Nu.800 against this, the relevant margin may be calculated by the following formula:

$$\begin{aligned} \text{Margin (in \%)} &= \frac{(\text{Value of security used as collateral} - \text{loan value}) * 100}{\text{Loan value}} \\ &= \frac{(1000 - 800) * 100}{800} \\ &= 25\% \end{aligned}$$

This is higher than the minimum mandated margin of 20%. Hence, this loan could be approved if the financial institution's other internal conditions are satisfied.

3.47. **The effective date for this regulation is 7th May 2014.** However, the implementation date for the two sub-parts of the regulation is different. The technical nature of the regulation on time varying capital provisioning and the demands it makes of the financial institution's profits necessitates that adequate time be given to institutions to adjust to its provisions. Accordingly, this regulation be implemented post 2016. On the other hand, the provisions regarding margin requirements are currently followed by financial institutions and limits used are in line with MPR 2014. Hence, this regulation shall be implemented post 1<sup>st</sup> November 2014.

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## Regulation 5. Loan to Value and Loan to Income restrictions

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- 3.48. **The objective of this regulation is to mitigate risks of default arising from fall in collateral values or inadequate repayment capacity of borrowers.** The loan to value (LTV) ratio addresses the former while the Loan to Income (LTI) limit is imposed to tackle the latter. Sub-prime lending where loans were advanced to borrowers with inadequate capacity to repay led to many loan defaults during the global financial crisis of 2008. A regulatory requirement mandating that the monthly debt obligation from the loan could not exceed a certain proportion of the borrower's income (LTI limit) would have helped impose discipline on financial institutions. Another proximate reason for the global financial crisis was the asset price bubble. The bursting of the real estate price bubble in the US led to voluntary foreclosures where borrowers preferred to not repay the loan and lose the underlying house that the loan had helped purchase. This was mainly because the value of the remaining instalments on the loan exceeded the value of the asset at stake. A cap on LTV, i.e., the ratio of the loan value to the value of the underlying housing collateral purchased with the loan, could have stemmed these voluntary foreclosures.
- 3.49. **Consider an example of how a cap on the loan to value ratio would work.** Suppose the underlying asset has a value of Nu. 100. If no cap on loan to value exists, then the FI may provide loan up to the entire value of this asset. Later, if the asset value falls to Nu. 80, when Nu. 90 of the loan still remains unpaid, the borrower may choose to default. In case a LTV ratio of 70% applies, the maximum allowable loan amount is Nu. 70. The remaining Nu. 30 has to come from the borrower's own resources as down-payment. In this case, even if the asset price falls to Nu.80, the borrower would prefer repaying the loan amount than lose the asset which is worth more. Hence, given a certain fall in the price of the underlying asset, a lower LTV ratio decreases the risk of non-repayment.
- 3.50. The proposed LTV-LTI regulation for Bhutan is applicable for all loans.
- 3.51. The LTV limit varies by the type of the property mortgaged to account for the differential risks attached.
- 3.52. **The RMA may also choose to make the LTV regulation dynamic.** Section 5.8.8 of the MPR 2014 states that the RMA may vary risk weights attached to assets of financial institutions where the loan size relative to the value of the underlying collateral is high. This is an indirect way of modulating credit to the highly exposed sector. Higher capital requirements against high-LTV loans would incentivize FIs to decrease such lending to that sector. The timing for such a decision would be based on RMA's subjective judgment of macro-financial developments. In particular, if the regulator fears a rising asset-price bubble (reflected by for example high price to rent ratio) it may use this provision to arrest such a development.

**Table 10: Maximum LTV limits**

Loan Amount	Maximum LTV
Up to Nu. 50 million	70%
More than Nu. 50 million	60%

- 3.53. **Loan to income ratio, as defined in the regulation, refers to the ratio of all outstanding monthly debt obligations to the monthly disposable income of the borrower.** The outstanding debt obligations include all existing obligations as well as the additional debt obligation created if the current loan were to be passed. The monthly disposable income is to be calculated by each financial institution as the average income (net of taxes) earned by the borrower in the past six months. If the individual were to earn a fixed income (by way of a salary for example), up to 100% of the average of this income could be considered as the denominator of the LTI ratio. Notably, future rental income expected from a housing unit could be treated as fixed income. The exact proportion of such income to be included in the measure for total income is left to the financial institutions. For a loan applicant earning a variable income (say, through business profits), up to 70% of his/ her average income of the last six months could be considered as the denominator for the LTI ratio.
- 3.54. **The maximum allowable LTI ratio increases with increase in monthly disposable income of the loan applicants** (see Table 11). This is based on the fact that as income goes up, the proportion of income going towards necessary or committed expenditures decreases. In other words, a larger proportion of income is available to the borrower to make loan repayments-essentially implying higher repayment capacity.

**Table 11: Maximum allowable loan to income by type of borrower and monthly disposable income**

Monthly disposable Income	Maximum LTI
Single Application	
Up to Nu. 50,000	50%
Above Nu. 50,000 but below Nu. 100,000	60%
Nu 100,000 and above	70%
Joint Application	
Any amount	50%

- 3.55. **The proposed effective date for this regulation is 7th May 2014.** However, FIs should be given at least six months to adjust to all provisions of this regulation. Since all financial institutions already follow internal LTV and LTI limits as part of their credit management policy, such a transition period should be adequate. Accordingly, we propose the implementation date for the regulation to be 1<sup>st</sup> November 2014. All loans sanctioned on or after this date will be subject to the provisions of this regulation.

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## **Regulation 6. Debt to Equity Ratio for Project Financing**

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- 3.56. **This regulation aims to ensure that the borrower has a financial stake in the project being developed.** The equity portion of the value of the project essentially reflects this interest. This financial interest means that the lending institution faces a lower credit risk. Moreover, in case a project loan turns non-performing, the lower exposure of the financial institution to a given project (owing to the provisions of this regulation) helps limit losses.
- 3.57. **Debt, according to the proposed regulation, should finance no more than 75% of the total cost of the project.** At least 25% of the project cost should be financed by equity. Moreover, the equity portion of the project must come from the borrower's own resources. This echoes Section 13.7 of the PR 2002 that notes "FIs will not finance more than three-fourths of the cost of the project, and the borrower should be required to finance the remaining one-fourth of the project cost from primary sources". While retaining this, the new macro-prudential regulation strengthens the regulation on other counts.
- 3.58. **Section 6.8.4 of MPR 2014 asserts that project financing be routed through a single financial institution or consortium of institutions.** Part-financing or multiple-bank lending in this domain is discouraged at the present time though the RMA may regulate this type of lending, should the need arise. The reason the current regulation forbids part financing is because of the riskiness associated with informational asymmetry that this type of financing creates. In particular, there are two issues- legality and divisibility. The project in question may get stuck if any lending institution seeks any sort of legal recourse against the borrower. This would affect other associated financial institutions adversely. Such an eventuality is unlikely to result when the financing is conducted through a consortium of FIs. The issue of divisibility arises due to the scale of the project. If different lenders stake claim to different parts of the project, liquidation in the event of non-repayment of loan would be problematic.

3.59. **Subject to the condition that debt constitutes less than or equal to 75% of the project cost, the FI may decide on the size of loan on the basis of credit-worthiness of the borrower and the collateral he/ she is able to bring. Up to 20% of the debt component of the project cost may not be supported by the collateral.** The exact proportion is left to the discretion of the individual financial institutions on the basis of the assessed credit worthiness of the borrower. This may take the form of a credit-scoring report based on internationally accepted parameters. For the remaining part of the loan, primary collateral will have to be provided. Primary collateral is closely related to the project. It may be the underlying asset on which the project is being constructed, or the project asset itself. The size of loan advanced against the primary collateral must not exceed a certain specified percentage of the value of the collateral. This is known as the loan-to-collateral value ratio and varies with the size of the total loan component of the project. The maximum allowable loan to collateral value ratios corresponding to different loan sizes is given by Table 12 below. If the primary collateral is inadequate to back the remaining loan amount, the borrower will have to bring in additional collateral to meet the funding gap. The extent of the additional collateral required will be decided by using the same slab of loan-to-collateral value ratios.

**Table 12: Maximum Loan to Collateral Value ratio by size of the total loan amount**

<b>Loan Amount</b>	<b>Maximum Loan to collateral value</b>
Up to Nu. 5.0 Million	90%
Nu 5 million above but up to Nu 10 million	80%
Nu 10 million above but up to Nu 50 million	70%
More than Nu. 50 million	60%

**Box 8: Illustration of Debt to Equity Ratio**

Assume a particular project cost is Nu. 100 million and that the bank is willing to furnish a loan equalling 75% of the cost (i.e., the maximum allowable debt-equity ratio). This implies the borrower shall have to bring minimum equity of Nu. 25 million. Assume that this is by way of cash. Next, the bank assesses the borrower's credit-worthiness and determines that 20% of the value of the loan need not be collateralized. This amounts to Nu. 15 million. Let the value of the associated primary collateral be Nu. 60 million. To determine the value of loan to be given against the value of the primary collateral-loan to collateral value ratios specified by this regulation will apply. Since the value of the loan is Nu. 75 million, Table 12 clearly shows the applicable loan to collateral value to be 60%. Nu. 36 million could be extended as loan against the primary collateral.

This implies approvable loan based on primary collateral and the internal evaluation is Nu. 51 million. However, the applied loan amount is Nu. 75 million. This leaves a funding gap of Nu. 24 million. In this case, the borrower shall have to provide additional collateral consistent with the loan to collateral value ratio. Using the loan to collateral value of 60%, the borrower shall have to bring minimum additional collateral of Nu. 40 million (Nu. 24 million/60%).

**Table 13: Example of Debt-to-equity ratio for project financing**

S. No.	Item	Amount (Nu. Million)
a.	Project cost	100
b.	Debt-Equity Ratio	75:25
c.	Equity required	25
d.	Loan Required	75
e.	Primary Collateral Value (assumed)	60
f.	Loan to Collateral Value ratio	60%
g.	Approvable loan based on primary collateral only (e*f)	36
h.	Additional approvable loan based on internal evaluation (assumed)	15
i.	Total approvable loan based on primary collateral and internal evaluation (g+h)	51
j.	Funding gap (d-i)	75-51=24
k.	Loan to Collateral Value ratio	60%

3.60. **The proposed effective date for this regulation is 7th May 2014.** However, FIs should be given at least six months to adjust to all provisions of this regulation. Since all financial institutions already follow internal debt-equity limits, subject to the provisions of the PR 2002, such a transition period should be adequate. Accordingly, we propose the implementation date for the regulation to be 1<sup>st</sup> November 2014. All project loans sanctioned on or after this date will be subject to the provisions of this regulation.

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## Regulation 7. Restrictions on Distribution of Profits

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3.61. **Rationalizing distribution of profits helps attain two objectives.** First, it balances the interests of small deposit holders and shareholders. Distributing less profit at a point in time helps add to capital and protect the FI against unexpected losses. This is in the interest of deposit-holders. On the other hand, interests of shareholders also need to be protected to encourage more wide-spread participation in public ownership of banks. These interests can be balanced by introducing a mechanism of dividend distribution where the maximum allowable dividend payout ratio (Ratio of Proposed Dividend to Profit after Tax) is linked to performance indicators of the FI. This ensures that when times are bad (i.e. the FI fares poorly on the chosen performance indicators), an FI is able to distribute only a small (or zero) proportion of its profits to shareholders. Second, introducing a standard regulation determining the quantum of dividend payable introduces discipline and uniformity to the practice of dividend distribution across the financial sector.

3.62. **Next, it is important to consider the banking performance indicators on which the dividend distribution practice will be based.** The proposed regulation uses the capital adequacy ratio (CAR) and the net Non-Performing Loan (NPL) ratio to this effect. In particular, to be eligible to distribute dividends, a FI must have a minimum CAR of 10% in the two previous years and the year for which it proposes to distribute dividends. The quantum of dividends payable will depend on the net NPL ratio of the FI for the year for which it proposes to distribute dividends. If this ratio is 7% or more, a FI shall not distribute any profits. A FI will be able to distribute up to 50% (the maximum possible payout ratio) of its profit after tax as dividend if in addition to meeting the CAR norm, it has a net NPL ratio of less than or equal to 3% for the year in which it proposes to declare the dividend. This can be seen in Table 14 below.

**Table 14: Maximum Dividend Payout ratio by net NPL ratio**

	Net NPL Ratio			
	Up to 3%	More than 3% but less than 5%	5% and above but less than 7%	7% and above
	<b>Minimum Capital Adequacy ratio of 10% in past 3 completed years</b>			
Maximum Dividend Payout Ratio	50%	40%	30%	Nil

- 3.63. **A leeway is also available to financial institutions.** That is, if the financial institution was unable to meet the CAR norm in the two previous years, but has a CAR higher than 10% in the current year (for which it proposes to declare dividends), it may still distribute dividends up to 15% of the profit after tax. However, this would be contingent on the financial institution having a net NPL ratio of less than 5%.
- 3.64. **The CAR and the net NPL ratio together are able to capture the performance of the banking sector well.** Note that the CAR acts as the first benchmark for measuring the performance of a financial institution in many instances including for credit rating purposes. However, the CAR does not deteriorate overnight. Economic distress first translates into increasing non-performing loans. Only later, when the NPL is written off from profit and loss account, does the profit and consequently the capital deteriorate by the full extent of the loss. From this perspective then, the parameter that can supplement the CAR is the non-performing loan ratio.
- 3.65. **Notably, the proposed regulation mandates that all financial institutions adhere to the existing norms on profit appropriation that the RMA imposes.** For instance, Section 6.5 of the PR 2002 states that if a FI is unable to meet its minimum capital adequacy requirements, it must enter into a rehabilitation period during which it may distribute no dividends to shareholders. Similarly, Section 11.3 of the same regulation states that one-fourth of the total gains on their foreign exchange dealing must be deducted from profit after tax to go towards the foreign exchange fluctuation reserve. Section 12.3 requires each financial institution to take approval from the RMA before distributing any dividend. Section 82 of the FSA 2011 states that financial institutions' whose reserve fund is 50% or higher of their paid-up capital must transfer 25% of their profit-after tax to their reserve fund. Financial institutions with lower reserve fund must transfer at least 50% of their profit after tax to the reserve fund. If, after meeting all regulatory requirements, a financial institution is left with a lower proportion of profit after tax than it is eligible to distribute as dividend, it will have to distribute lower dividends to that extent.

#### Box 9: Illustration of the Restrictions on Distribution of Profits

Table 15 below shows the CAR and net NPL ratios recorded by 4 fictional banks. Bank A in the table below can distribute up to 50% of its profit after tax since it meets the CAR norm in the past three years, and records a less than 3% net NPL ratio in the current year. Bank B meets the CAR norm only in the current year. However, since its net NPL ratio is low enough, it can distribute up to 15% of its profit after tax as dividend. While Bank D is similar to Bank B in terms of meeting the CAR norm, it is not allowed to distribute any dividend since its net NPL ratio is higher than 7%. The impact of these restrictions on a bank (Bank A in this case), can be seen from Table 15 below.

**Table 15: Example of Maximum Dividend Payout ratio applicable to banks**

Bank	CAR (%)			Net NPL (%)	Maximum permissible dividend payout ratio
	Year t-2	Year t-1	Year t	Year t	
A	11%	21%	25%	2.40%	50%
B	8%	9%	12%	2%	15%
C	11%	13%	11%	5.20%	30%
D	12%	10%	14%	9%	Nil

**Box 10: Illustration of restriction on distribution of profits****Table 16: Impact of regulation on Bank A**

Bank A	Calculation	Amount (in Nu. million)	% of PAT
PAT	-	698	-
Transfer to General Reserves	30% of PAT	209	30%
Forex Gain		46	-
Forex loss		0	-
Net Gain	Forex Gain-Forex Loss	46	-
Transfer to Exchange Fluctuation Reserve	25% of Net Gain	11	2%
Provision for Dividend	50% of PAT	349	50%
Transfer to Retained Earnings	Residual	128	18%

The Bank has profit after tax of about Nu. 700 million. It decides to distribute 30% of that as dividend (Nu 180 million). Assuming its reserve fund exceeds 50% of the paid-up capital, the bank has to transfer 25% of the PAT to its reserve fund (by Section 82 of the FSA 2011). Assume that it actually transfers 30% to general reserves. The bank is also mandated to transfer 25% of its net foreign exchange gains to the foreign exchange fluctuation reserve. This amounts to 2% of PAT. Post these mandatory transfers, the bank is left with adequate profits to distribute the full extent of its eligible dividend payout ratio (Nu. 349 million) to shareholders. The rest of the profits are retained earnings-Nu 128 million recorded in the last row of Table 16.

3.66. **The effective date of the regulation is 7th May 2014.** This means that FIs have to adhere to the provisions of this regulation when distributing profits for the year ending December 2014.

## 4. Summary and Conclusions

4.1. In the preceding sections, it was pointed out that Bhutan already has micro-prudential regulations in place, to govern its financial sector. However, macro-prudential policy is missing from the RMA's regulatory toolkit. Macro-prudential regulations are needed in order to meet systemic risks that the financial sector may be subject to. These may be in terms of contagion risks (arising due to inter-linkages between various financial institutions) or pro-cyclicality. The pro-cyclical nature of the financial system can itself engender a situation where economic distress translates into a credit crunch which further causes the real sector scenario to worsen. Micro-prudential regulations like minimum capital adequacy requirements can itself exacerbate these tendencies. Macro-prudential instruments on the other hand can help temper the same. The subsequent section of the policy paper discussed each macro-prudential regulation in detail, explaining the rationale behind all provisions according to the requirement. Each discussion also highlighted the potential 'effective date' and 'implementation date'. This is summarized by Table 17 below.

**Table 17: Proposed Implementation dates**

<b>S. No.</b>	<b>Regulation</b>	<b>Effective date</b>	<b>Implementation Date</b>
1	Counter-cyclical capital buffer for banks	7 <sup>th</sup> May 2014	As per fresh directive by RMA Suggested implementation date: Post 01 <sup>st</sup> January 2016
2	Sectoral capital requirements	7 <sup>th</sup> May 2014	As per fresh directive by RMA Suggested implementation date: Post 01 <sup>st</sup> January 2016
3	Minimum Ceiling on leverage ratio for banks	7 <sup>th</sup> May 2014	1 <sup>st</sup> November 2014
4	Loan to value and loan to income restrictions	7 <sup>th</sup> May 2014	1 <sup>st</sup> November 2014
5	Debt-to-equity ratio	7 <sup>th</sup> May 2014	1 <sup>st</sup> November 2014
6	Time varying capital provisioning and margin requirements	7 <sup>th</sup> May 2014	1 <sup>st</sup> January 2016- Time varying capital requirements 1 <sup>st</sup> November 2014- Margin requirements
7	Restriction on distribution of profits	7 <sup>th</sup> May 2014	Applicable to the dividends declared for the accounting year ending 31 <sup>st</sup> December 2014

## ***Annexure.1 List of Indicators***

Possible Indicators to monitor and corresponding signalling properties

<b>Indicator</b>	<b>Signaling Properties</b>
Output gap (Aggregate and Sector-specific)	A higher positive deviation from trend may be a signal of the economy overheating.
Credit growth as reflected by <ul style="list-style-type: none"> <li>• Credit-GDP ratio gap from its trend value</li> <li>• Overall credit growth</li> <li>• Sector-specific growth rates of credit</li> </ul>	A fast pace of credit growth may reflect build-up of potential risks. However, for an economy like Bhutan, it is possible that desirable financial deepening may be itself contributing to a shifting the trend. Lack of long time series data also makes it difficult to conclusively prove the utility of this indicator. The sectoral growth rates of credit, combined with the absolute levels of credit in each sector may be useful in identifying the need for macro-prudential instruments in general, and sectoral capital requirements in particular.
Interest rates charged on different classes of loans	Lower interest rates (in conjunction with the other indicators) may imply buildup of risks as banks and insurance companies bid down the interest rate in order to compete with each other.
Tier 1 capital ratio and Overall capital adequacy ratios	Declining capital adequacy ratios, on account of rising assets (expressed in the denominator) may signal overheating. However, in case all other indicators signal build-up of potential risks, and capital adequacy ratios are still high, increasing capital requirements may not help the RMA to achieve its objective of limiting exposures to a certain sector.
Leverage ratio	It is possible that the capital adequacy ratios do not exhibit a decline due to the nature of risk-weighting. In such a scenario, capital adequacy as measured by a depleting leverage ratio will be more indicative of risks building up.
Ratio of risk weighted assets to total assets	A higher ratio indicates more riskiness attached with a given asset portfolio.
Inter-Financial Institutional lending growth	Reflects a measure of credit in the economy, not entirely captured by the final credit data. A high and increasing number reflects increasing inter-connectedness among financial institutions that may translate into contagion risk.

<b>Indicator</b>	<b>Signaling Properties</b>
Household debt to GDP ratio	Higher indebtedness indicates higher risk of borrowers being unable to repay their debt obligations in the backdrop of an economic downturn, which may translate into a financial crisis.
Real estate price index to rent index	A higher ratio indicates potential asset price bubble in the real estate sector.
LTV in residential mortgages	A higher LTV implies poorer underwriting standards that are generally seen to be present during a credit boom. Lending institutions engage in these practices in order to compete with each other to offer loans and earn the resultant interest payments.
LTI in residential mortgage/ automobile loans	A higher LTI implies poorer underwriting standards that are generally seen to be present during a credit boom. Lending institutions engage in these practices in order to compete with each other in to offer loans and earn the resultant interest payments.
Spread on new mortgage lending	A lower spread reflects potential underpricing of risk that is likely to be true during credit booms.
Spread on new corporate lending	A lower spread reflects potential underpricing of risk that is likely to be true during credit booms.

