

Anand Sinha: Macroprudential policies – Indian experience

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Introduction

1. Good Morning. It gives me great pleasure to share with you our experience in implementing macroprudential policies in India. The current global financial crisis has brought to fore serious lacunae in the approach to regulation and supervision and put the issue of systemic risk on to the regulatory agenda. A comprehensive definition of systemic risk is, “*The risk of disruptions to financial services that is caused by an impairment of all or parts of the financial system, and can have serious negative consequences for the real economy.*”¹

2. There are two facets to systemic risk. One is in terms of its distribution within the system at any given point in time and another is its evolution with time. The cross-sectional dimension is how risk is distributed within the system at any given point in time. Systemic risk in this dimension arises due to the inter-connectedness of institutions, balance sheet entanglements, common exposures and, sometimes, even common business models of financial institutions. The time dimension on the other hand deals with how aggregate risks in the financial system evolve over time – the procyclicality issues in the financial system. The dynamics of the financial system and the macroeconomy interact with each other increasing the amplitude of booms and busts. The larger is the boom, the larger is the bust and larger is the damage to the economy.

Systemic risk management and macro prudential policy

3. The set of policies which deal with managing the downside of systemic risk is known as macro prudential policy. Macroprudential policies primarily use prudential tools to limit systemic risk and thereby minimize disruptions in the provision of key financial services that can have serious consequences for the economy by (i) dampening the buildup of financial imbalances; (ii) building defenses that contain the speed and sharpness of subsequent downswings and their effects on the economy; and (iii) identifying and addressing common exposures, risk concentrations, linkages and inter-dependencies that are sources of contagion and spillover risks that may jeopardize the functioning of the system as a whole². While the third objective of macroprudential policy [(iii) above] is concerned with the cross-sectional dimension, the first two objectives [(i) and (ii) above] are concerned with the procyclicality issues. The second objective of building defenses, i.e., increasing the resilience of the financial system is viewed as a narrow objective and is attained by build-up of buffers during boom times which can be used when risks materialize during busts. The first objective of dampening the buildup of financial imbalances is considered a broader objective and is essentially “leaning against the wind” aspect during the boom phase for dampening the credit

¹ IMF-BIS-FSB(2009).

² IMF(2011).

and asset price boom. The buildup of buffers should achieve this objective by affecting the cost of credit, though evidence is not unequivocal in this regard. A more ambitious interpretation of the first objective would be moderation of credit supply through both booms and busts i.e. ensuring stable credit supply. While the objective of dampening the credit exuberance during boom and, thereby, moderate credit supply looks plausible, increasing credit supply during busts by leaning against the wind i.e. by releasing buffers, does not seem as plausible because of risk aversion that is likely to set in among banks and other economic agents as well as the market pressure and expectation from banks to maintain high levels of capital when risks are apparently highest. Thus macroprudential policy is likely to have asymmetric impact from “leaning against the wind” during booms and busts. BCBS and FSB are currently involved in developing a range of macroprudential policies to deal with the procyclicality issues as also with systemically important financial institutions and other aspects of systemic risk on account of inter-connectedness and common exposures.

4. Reserve Bank of India (RBI) has been using macroprudential policies, more notably the countercyclical policies, since 2004 as a toolkit for ensuring financial stability though it had used them sporadically even earlier. It would be useful to describe the broad structure of the Indian financial system and the linkages between the monetary policy and financial stability in India, to provide a backdrop for discussing the implementation of policies.

Structure of the Indian financial system

5. The Indian financial system is heavily dominated by commercial banks. Within the banking system, public sector banks (majority shareholding held by the Government of India) account for nearly 70 per cent of the banking system assets.

6. RBI regulates banking sector, non-banking financial companies (NBFCs), as also the money, forex and Government securities markets which are dominated by banks. Thus, the interconnectedness channels, both from the institutional and market perspectives, come within the regulatory ambit of RBI. There are separate regulators for capital markets, insurance sector and pension funds. With many Indian banks having expanded into the above mentioned activities through subsidiaries, associates or otherwise, there has been a need for coordination among sectoral regulators which has been ensured through inter-regulatory bodies within the umbrella of a high level committee chaired by the Governor, RBI and with representatives from Ministry of Finance. This institutional arrangement has recently undergone a change with the establishment of the Financial Sector Development Council (FSDC) chaired by the Finance Minister.

Role of RBI in maintaining financial stability

7. The Reserve Bank of India Act, 1934 provides a broad legal mandate to RBI to secure monetary stability and generally to operate the currency and credit system of the country to its advantage. In practice this meant the dual objective of growth and price stability, the relative emphasis being dependent on the context. Since 2004, RBI has added financial stability as an additional objective in view of the fast growing size and importance of the Indian financial sector³. It is in this setting that RBI has been using macroprudential framework in both time and cross-sectional dimensions for quite long without christening these policies as macroprudential policies as is the case with some other countries, notably some Asian countries. Operationally, while pursuing multiple objectives, multiple indicators, including growth in credit and money, are used to track the macroeconomic conditions. India being a bank-dominated economy, the bank credit becomes a key monetary policy

³ Y.V.Reddy (2011).

transmission channel. Thus, the aggregate bank credit growth has always formed an important variable in the conduct of monetary and countercyclical policies.

Elements of macro-prudential framework in India

Overview

8. RBI's countercyclical policies have focused on banks due to the centrality and criticality of the banking system in the Indian economy. In any case, application of countercyclical policies to the shadow banking system i.e. the Non-Banking Financial Companies (NBFCs) is extremely challenging. These policies have aimed at increasing the resilience of the banking system. The instruments used have been time varying risk weights and provisioning norms on standard assets for certain specific sectors wherein excessive credit growth, in conjunction with sharp rise in asset prices, has caused apprehension of potential build-up of systemic risk and asset bubbles. In the process, the policies have "leaned" against the wind and have had the desired effect of moderating the credit boom in the specified sectors both through signaling effect and affecting the cost of credit. Evidence, though limited, suggests that the leaning against the wind has been more effective in dampening the lending exuberance in the boom phase than in the downturn in ensuring a stable credit supply. Several measures have been taken to reduce the inter-connectedness among banks on the one hand and between banks and NBFCs on the other, and limits have been placed on common exposures to address the cross-sectional dimension of systemic risk.

Objective of counter-cyclical policies

9. The objective of these policies is best stated in the words of Dr. Y.V Reddy, former Governor RBI. "The RBI articulated its approach to countercyclicity in its policies by indicating the criticality of the banking system for large segments of the population and for the economy as a whole. Hence the RBI adopted a precautionary approach to essentially protect the banking system from a "bust" were it to occur for any reason."⁴ This was amplified in October 2005 in the Mid-term Review of Annual Policy for the year 2005-06, while increasing provisioning on standard assets across the board (except for SMEs and agriculture):

"Traditionally, banks' loans and advances portfolio is pro-cyclical and tends to grow faster during an expansionary phase and grows slowly during a recessionary phase. During times of expansion and accelerated credit growth, there is a tendency to underestimate the level of inherent risk and the converse holds good during times of recession. This tendency is not effectively addressed by the prudential specific provisioning requirements for the impaired assets since they capture risk ex post but not ex ante.

The various options available for reducing the element of pro-cyclicity including, among others, adoption of objective methodologies for dynamic provisioning requirements, as is being done by a few countries, by estimating the requirements over a business cycle rather than a year on the basis of the riskiness of the assets, establishment of a linkage between the prudential capital requirements and through-the-cycle ratings instead of point-in-time ratings and establishment of a flexible loan-to-value (LTV) ratio requirements where the LTV ratio would be directly related to the movement of asset values."

⁴ Y. V. Reddy (2011).

10. It is apparent that the policy does not specifically mention ensuring stable credit supply though this would certainly be a collateral objective. It is also notable that while other available options i.e., dynamic provisioning, through the cycle ratings for capital purposes and time varying LTV ratios have been discussed, the policy prescription preferred was increasing provisions on standard assets which is somewhat akin to dynamic provisioning though not exactly similar. Moreover, RBI never used cap on LTV ratios till much later in 2010 but in a different context.

Methodology

11. Ideally, a sound macro-prudential policy should be based on the determination of the economic cycles, assessment and measurement of the build-up of systemic risk and also the effect of the stance of other public policies like monetary policy, fiscal policy etc., on the risk taking behavior of the financial sector. Since the development of a framework is in infancy, RBI's methodology has not been based on extensive statistical analysis or modeling or on determination of build-up of asset bubbles. It is largely judgmental based on trends in aggregate credit and sectoral credit growth in the macro-economic settings. For this reason, it has not been rule bound which will require either some model or at least some measurement of systemic risk and its sensitivity to the prudential parameters. While undertaking counter-cyclical measures during the high GDP and high credit growth period of 2004–08, there was no explicit attempt to determine the deviation of the credit to GDP ratio from its long term trend, though the GDP growth and the macro-economic setting were kept in view. Similarly, the possibility and not the absolute proof of asset bubbles was explored in terms of broad indicators and possible threats⁵. Some evidence from Annual Financial Inspections of banks carried out by RBI, together with market intelligence on possible loosening of underwriting standards due to aggressive lending, was also factored in.

Dimensions of RBI's macro-prudential policies

Counter-cyclical policies

12. Implementation of countercyclical capital and provisioning regulations in India during the period from December 2004 to December 2010 is reflected in Table 1 below.

Date	Capital Market		Housing		Other Retail		Commercial Real Estate		Non-Deposit taking Systemically Important Non-Financial Companies	
	Risk Weight	Provisions (%)	Risk Weight	Provisions (%)	Risk Weight	Provisions (%)	Risk Weight	Provisions (%)	Risk Weight	Provisions (%)
Dec-04	100	0.25	75	0.25	125	0.25	100	0.25	100	0.25
July-05	125	0.25	75	0.25	125	0.25	125	0.25	100	0.25
Nov-05	125	0.40	75	0.40	125	0.40	125	0.40	100	0.40
May-06	125	1.00	75	1.00	125	1.00	150	1.00	100	0.40
Jan-07	125	2.00	75	1.00	125	2.00	150	2.00	125	2.00
May-07	125	2.00	50-75	1.00	125	2.00	150	2.00	125	2.00
May-08	125	2.00	50-100	1.00	125	2.00	150	2.00	125	2.00
Nov-08	125	0.40	50-100	0.40	125	0.40	100	0.40	100	0.40
Nov-09	125	0.40	50-100	0.40	125	0.40	100	1.00	100	0.40
Dec-10	125	0.40	50-125*	0.40-2.00#	125	0.40	100	1.00	100	0.40

Provisioning requirement for housing loans with teaser interest rates was increased to 2.0 per cent in December 2010. It will remain at 2% till one year after reset of interest rate to higher rate and thereafter it will be 0.4%. For other housing loans the provisioning will remain at 0.4%.

* The risk weights for housing loans vary according to amount of the loan and the loan to value ratio as below

⁵ Y. V. Reddy (2011).

Loan Amount	Loan To Value (LTV) Ratio (cap of 80 per cent for loans above ₹. 2 million and 90 per cent for loans upto ₹. 2 million)	Risk Weight (%)
Upto ₹. 3 mio	≤75%	50
	>75%	100
₹. 3 mio to below ₹. 7.5 mio	≤ 75%	75
	>75%	100
₹. 7.5 mio and above		125

Source: Reserve Bank of India.

13. Table 2 indicates the movement in monetary measures as well as the movement in the provisioning norms and risk weights of the specific sectors during the three phases of implementation of the countercyclical policies.

Table 2: Monetary Measures and Prudential Norms (Changes in basis points)				
Sr.No.	Measure	Monetary Tightening Phase	Monetary Easing Phase	Monetary Tightening Phase
		(September 2004-August 2008)	(October 2008-April 2009)	(October 2009 till date)
1	2	3	4	5
Monetary Measures				
1	Repo rate	300	-425	250
2	Reverse repo rate	125	-275	300
3	Cash reserve ratio	450	-400	100
Provisioning Norms				
4	Capital Market Exposures	175	-160	0
5	Housing Loans	75	-60	160*
6	Retail Loans other than Housing Loans	175	-160	0
7	Commercial Real Estate Loans	175	-160	60
8	Non-Deposit taking Systemically Important Non-Financial Companies	175	-160	0
Risk Weights				
9	Capital Market Exposures	25	0	0
10	Housing Loans	-25 to 25 [®]	0	0-25 [#]
11	Retail Loans other than Housing Loans	25	0	0
12	Commercial Real Estate Loans	50	-50	0
13	Non-Deposit taking Systemically Important Non-Financial Companies	25	-25	0

Source: Reserve Bank of India.

* Provisioning requirement for housing loans with teaser interest rates was increased to 2.0 per cent in Dec 2010.

[®] Risk weights on housing loans of relatively smaller size classified as priority sector was reduced from 75% to 50% in May 2007, which was not a countercyclical measure but rather an attempt to align the risk weights on secured mortgages with the provisions of Basel II which was to be implemented w.e.f. March 2008. On the larger loans and those with LTV Ratio exceeding 75% the risk weight was increased from 75 to 100%.

[#] The risk weight on loans above Rs. 7.5 mio was increased to 125%.

14. The period covered in Table 2 is divided into three distinct phases from monetary policy perspective which correspond to three phases from countercyclical policy perspective. The monetary tightening and easing phase corresponds respectively to increase in sectoral capital and provisioning requirements (build up phase) and easing of these requirements (release phase). The period wise classification from this perspective is: – (i) Build-up phase: September 2004–August 2008, (ii) Release Phase: October 2008–April 2009, and

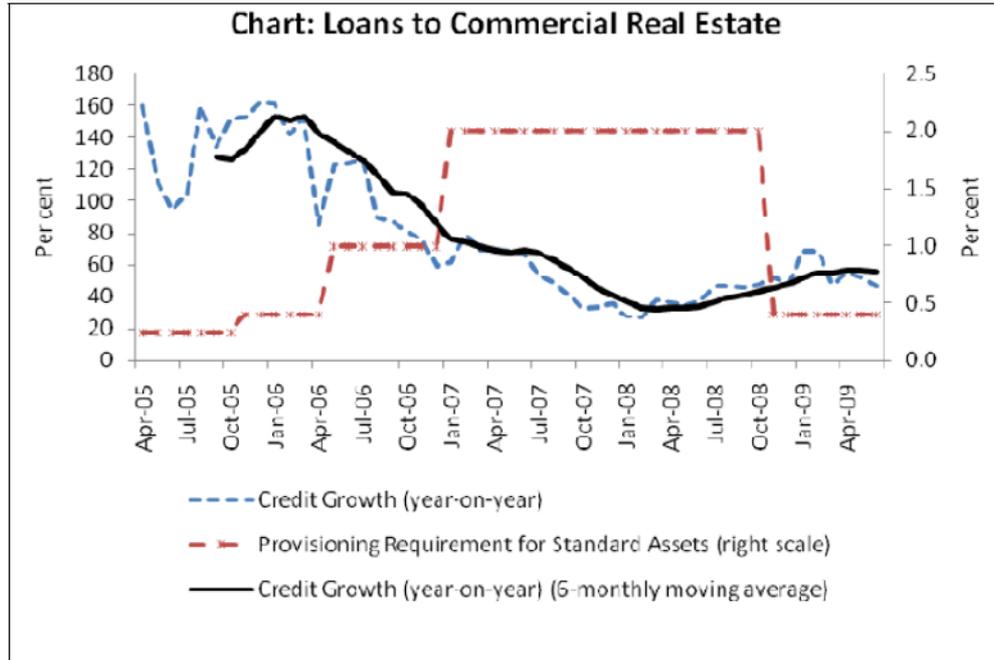
(iii) Re-build-up phase: October 2009 till date. It may be noted that the monetary and countercyclical measures have always been in the same direction i.e. have been complementary so far.

Build-up phase: (September 2004–August 2008)

15. During 2004–08, the Indian economy exhibited high real GDP growth, of around 9 per cent per annum. Given the high growth and inflationary pressures, monetary policy was in a tightening mode to contain aggregate demand and inflation. During this period, India also received large capital flows, which were intermediated by the banking sector. High growth created a huge demand for bank credit. While the overall bank credit growth accelerated sharply (to over 30 per cent), credit growth to certain sectors such as real estate accelerated much more sharply (reaching more than 100 per cent, year-on-year, for an extended period April 2005–July 2006 and remained above 50 per cent till later than mid-2007). Concomitantly, asset prices, especially those of real estate, rose sharply. This exposed the banking sector to huge risks. In view of the rapid credit expansion in the period 2003–06, it was explicitly indicated by the RBI in April 2006 that growth of non-food bank credit, including investments in bonds/debentures/shares of public sector undertakings and private corporate sector and commercial paper, would be calibrated to decelerate to around 20 per cent during 2006–07 from a growth of above 30 per cent. Inflationary expectations had also started firming up and as a part of monetary management, the repo rate was increased by 300 basis points in stages to 9 per cent by August 2008 from its level of 6 per cent in September 2004. Further, the Cash Reserve Ratio was also raised by 450 basis points in stages from 4.5 per cent in September 2004 to 9 per cent. In order to protect banks' balance sheets against such risks, the Reserve Bank tightened prudential norms in the form of provisioning norms and risk weights in specific sectors beginning October 2004 (Table 1).

16. Noticing the steep increase in bank credit to the commercial real estate sector in conjunction with that in the prices of real estate, risk weights for banks' exposure to commercial real estate were increased from 100 per cent to 125 per cent in July 2005, and further to 150 per cent in May 2006. The risk weights on housing loans extended by banks to individuals, were increased from 50 to 75 per cent in December 2004. Subsequently, while the risk weights on smaller size housing loans (priority sector) were reduced from 75 to 50 per cent, the risk weights on larger loans and those with LTV ratio exceeding 75 per cent were increased to 100 per cent. When there was a boom in consumer credit and equities, risk weights for consumer credit and capital market exposures were increased from 100 per cent to 125 per cent. The provisions for standard assets were revised upwards progressively in November 2005, May 2006 and January 2007, in view of the continued high credit growth in the real estate sector, personal loans, credit cards receivables, loans and advances qualifying as capital market exposures and loans and advances to the NBFCs. The provisioning requirement for all other loans and advances classified as standard assets, namely, direct advances to the agricultural and small and medium enterprise sectors and all other loans and advances were kept unchanged.

17. The tightening of prudential norms made the credit to targeted sectors costlier thereby moderating the flow of credit to these sectors. There is evidence that moderation in credit flow to these sectors was also in part due to banks becoming cautious in lending to these sectors on the signaling effect of RBI's perception of build up of sectoral risks. For instance, these measures helped moderate the flow of credit to the commercial real estate sector. The credit growth decelerated to around 50 per cent by 2008 from a very high level of around 150 per cent (Y-o-Y basis) in late 2005 as shown in the graph below.



Source: Mohan, Rakesh and Muneesh Kapur, 2009, "Managing the Impossible Trinity: Volatile Capital Flows and Indian Monetary Policy", Working Paper, Stanford Centre for International Development

18. Simultaneously, as indicated earlier, monetary policy was also in a tightening mode to contain demand pressures. Thus, while monetary tightening helped in containing the overall credit growth, prudential norms moderated the credit growth to the specific sectors. Thus, monetary policy and prudential norms complemented each other. That is, we deployed both interest rates and prudential instruments during 2004–08 to ensure both price stability and financial stability.

Release phase: 2008–09 (October 2008 to April 2009)

19. The Indian economy was also impacted by the global financial crisis, though a major part of the impact was felt indirectly through channels of trade and cross-border capital flows. In order to mitigate the adverse impact of the global financial crisis on the Indian economy, the Reserve Bank aggressively eased the monetary policy. During this period, prudential norms were also relaxed in a countercyclical fashion, again mainly following a sectoral approach (Tables 1 and 2). The relaxations focused primarily on real estate and NBFC sector as these were the segments which had been most severely hit due to the downturn. In addition to easing of risk weights and provisioning norms for standard assets, RBI’s prudential framework governing restructuring of advances (corporate workouts) was also temporarily modified to facilitate restructuring of greater number of units which had potential viability but had been affected in a most unexpected manner. However, despite the easing of monetary policy and aggressive relaxation in prudential measures in a countercyclical fashion, the credit growth slowed down substantially due to, among other reasons, subdued credit demand and risk aversion among banks as is clear from Table 3.

Table 3

Credit to select sectors during September 2008 to September 2009

(Per cent)

Month	Year-on-Year Growth			
	Non-food Credit	CRE	NBFCs	Housing
September-2008	25.7	42.5	49.7	9.5
October-2008	29.4	44.8	60.5	10.9
November-2008	28.0	49.6	54.0	9.0
December-2008	25.1	45.7	38.2	7.8
January-2009	22.7	66.5	42.5	7.7
February-2009	19.6	59.3	37.0	6.3
March-09	18.0	46.3	25.2	7.3
April-2009	18.8	54.7	33.4	7.0
May-2009	17.6	54.9	31.3	5.8
June-2009	15.6	49.1	23.3	5.3
July-2009	15.9	46.8	32.2	5.6
August-2009	13.3	41.5	30.8	5.4
September-2009	12.7	34.1	29.9	6.4

Source: Reserve Bank of India.

20. The credit growth, overall as well as to the target sectors, decelerated. During October 2008 to September 2009, the credit growth to commercial real estate (CRE) decelerated from 45 per cent to 34 per cent on a year-on-year basis, to NBFCs from 61 per cent to 30 per cent, and to housing from 11 per cent to 6 per cent (Table 3). The total non-food credit during the same period decelerated from 29 per cent to 13 per cent.

Re-build phase: October 2009 onwards

21. By late 2009, domestic growth began to recover from the slowdown induced by the global financial crisis. However, while the overall credit growth continued to remain subdued, credit growth to the commercial real estate sector remained high well above the overall credit growth (Table 4). As indicated in para 19, in the wake of the global financial crisis, the Reserve Bank had temporarily modified its prudential guidelines for restructuring of advances. However, the extent of restructured advances to the commercial real estate sector was relatively high. Accordingly, provisioning norms on standard assets were increased for the commercial real estate sector in November 2009. This was the period when the Reserve Bank began exiting from crisis-driven expansionary monetary policy as India was confronted with an upturn in inflation – a rising wholesale price index (WPI) inflation and stubbornly

elevated consumer price index (CPI) inflation. The exit began by reversing the immediately reversible unconventional measures such as, restoring of export credit refinance facility to pre-crisis level, and discontinuation of special refinancing facilities extended to scheduled commercial banks, etc.

Table 4
Deployment of gross bank credit by major sectors

Table 4: Deployment of Gross Bank Credit by Major Sectors		
Sector	Year-on- Year Variation (per cent)	
	August 2007 to August 2008	August 2008 to August 2009
Non-Food Gross Bank Credit (1 to 4)	26.5	13.3
1. Agriculture & Allied Activities	18.6	25.6
2. Industry	32.9	17.9
3. Personal Loans	14.4	2.3
3.1 Housing	12.4	5.4
3.2 Advances against Fixed Deposits	7.0	0.6
3.3 Credit Card Outstanding	32.8	-14.3
3.4 Education	38.2	34.5
3.5 Consumer Durables	-3.1	-16.7
4. Services	33.8	11.0
4.1 Transport Operators	26.3	9.1
4.2 Professional Services	65.1	22.1
4.3 Trade	21.3	13.8
4.4 Real Estate Loans	43.1	41.5
4.5 Non-Banking Financial Companies	51.8	30.8
Memo item: Micro and Small Enterprises	21.1	27.4

Source: Reserve Bank of India.

22. In December 2009, as the economy had just emerged from the crisis, there were apprehensions about asset quality on account of exuberant lending during the boom phase. Since banks were still making good profits, it was decided to prescribe a Provisioning Coverage Ratio (PCR) of 70 percent of gross non-performing advances, as a macro-prudential measure, with a view to augmenting provisioning buffer in a counter-cyclical manner. Banks had to achieve this by September 2010.

23. PCR was intended to be an interim measure and it was hoped that it would be replaced by a forward-looking counter-cyclical provisioning methodology being developed by the Basel Committee on Banking Supervision (BCBS) and International Accounting Standards Board (IASB) or by a methodology similar to Spanish dynamic provisioning framework we are working on. Since in the absence of a calibrated methodology it would be difficult to allow banks to use the countercyclical provisions built up under PCR freely and there were certain design issues too, it was decided to freeze the PCR with reference to the gross NPA position in banks as on September 30, 2010. The buffer (surplus of provisions over specific provisions) will be allowed to be used by banks for making specific provisions for NPAs during periods of system wide downturn, with the prior approval of RBI. It may be added that the banking system has already exceeded the 70 per cent PCR though some banks have yet to reach that level.

24. By November 2010, the Reserve Bank had raised the policy rate by 150–200 basis points on account of concerns about high and stubborn inflation. During this period, residential property prices had risen sharply and had attained the pre-crisis level. Some banks had come out with certain residential housing loan schemes (teaser loans and 10:90 scheme) where RBI had apprehensions about asset quality going forward. Moreover, it was felt that these schemes were creating artificial demand for housing loans which could push up the housing prices further (which had already reached pre-crisis levels) with the potential of putting housing beyond the reach of many. In November 2010, therefore, the Reserve Bank initiated the following measures: (i) the provisioning norm for “standard” teaser housing loans was increased from 0.4 per cent to 2.0 per cent in November 2010; (ii) for the first time a cap on Loan To Value (LTV) ratio was prescribed at 80 per cent in December 2010 for loans above Rs.2 million and at 90 per cent for loans up to Rs.2 million; and (iii) the risk weight for residential housing loans of Rs.7.5 million and above, irrespective of the LTV ratio, was raised to 125 per cent. These measures are, however, intended to serve more a micro-prudential rather than a macro-prudential objective.

25. **Concluding observations on countercyclical policies**

- (i) View regarding the implementation of countercyclical policies was based on tracking of various indicators in the economy, notably the general credit growth and the sectoral credit growth. This was complemented with market intelligence and some feedback from the Annual Financial Inspections of banks. No detailed statistical analysis or modelling was used. The decisions were judgmental based on constant monitoring of macroeconomy and were not rule based.
- (ii) RBI, being the monetary authority as well as the regulator and supervisor of banks, NBFCs and important segments of markets i.e. forex, Govt. Securities and money markets, had the necessary information and overall view of the risks building up in the system. It was, therefore, well placed to operate the countercyclical policies.
- (iii) Monetary policy and the countercyclical policy were in the same direction (Table 2). Such a coordinated response was facilitated due to RBI’s wide regulatory ambit. If policies are not well coordinated, the costs of implementing such policies may be high.
- (iv) It was important to deal with sectoral exuberance through countercyclical policies even as monetary policy, while dealing with inflation scenario, dealt with generalised exuberance. Interest rate alone, being a blunt instrument, would not have been able to handle the sectoral exuberance, or else, the cost to the economy would have been higher.
- (v) Combination of risk weights and provisioning requirements for standard assets were used as countercyclical policies. It would appear, however, that varying the provisioning requirements may have been more effective than varying risk weights in moderating credit flow to the specific sectors. This is because, since the average capital adequacy ratio of banks operating in India has been well above 12 per cent for the last many years (as on December 2010, it was above 14 per cent), risk weights may not always be effective in dampening the growth of credit as banks can continue to finance riskier sectors yielding higher returns by allowing their capital adequacy ratios to fall by a few basis points and still remain much above the regulatory requirements. To the extent higher risk weights translate into increase in interest rates, demand for credit may come down. On the other hand, varying provisioning requirement would be potentially more effective as it would impact the Profit and Loss account of banks to which banks are more sensitive.
- (vi) The countercyclical policies were able to dampen exuberant credit growth in the targeted sectors. However, their effect was asymmetrical during downturn. Despite aggressive easing of monetary policy and prudential measures in a countercyclical fashion, the credit supply did not increase adequately. The credit growth slowed

down substantially due to, among other reasons, subdued credit demand and risk aversion among banks.

- (vii) Since the monetary policy and countercyclical policies have operated in tandem, it is difficult to isolate the effect of countercyclical policies from that of monetary policy.

Dealing with cross-sectional dimension of systemic risk

26. To address systemic risks arising out of inter-connectedness among banks and between banks and NBFCs (shadow banks) and from common exposures, some of the important measures taken are as under:

27. Prudential limits

- (i) For limiting interconnectedness of banks, prudential limits have been put on aggregate interbank liabilities as a proportion of their net worth
- (ii) In order to ensure that inter-bank market functions in a non-disruptive manner, access to un-collateralised funding market is restricted to banks and primary dealers and there are caps on both lending as well as borrowing by these entities.
- (iii) Investment in the capital instruments of other banks and financial institutions is restricted to 10% of investing banks' capital funds, in addition to the stipulation that a bank cannot hold more than 5% of other bank's equity. Though these cross-holding limits are primarily designed to ensure that the capital of banks and financial institutions is contributed largely by investors outside the financial system, reduction in inter-connectedness is also a collateral objective.
- (iv) In order to contain regulatory arbitrage, banks' exposure to NBFCs is subject to tight limits and NBFCs have been increasingly subjected to more stringent prudential regulations. Systemically important NBFCs are closely monitored.
- (v) Investments in liquid schemes of Debt-oriented Mutual Funds (DoMFs) by banks are subject to a prudential cap in relation to their net worth. This limit has been placed in the backdrop of banks' investments in liquid schemes of DoMFs having grown manifold. The liquid schemes rely heavily on institutional investors such as commercial banks whose redemption requirements are likely to be large and simultaneous. DoMFs, on the other hand, are large lenders in the over-night markets such as collateralised borrowing and lending obligation (CBLO) and market repo, where banks are large borrowers. DoMFs also invest heavily in Certificates of Deposit (CDs) of banks. Such circular flow of funds between banks and DoMFs could lead to systemic risk in times of stress/liquidity crunch. Thus, banks could potentially face a large liquidity risk.

Restrictions on exposure to complex activities and products

28. Banks' large involvement with complex products such as exotic derivatives and other risky activities like private equity, venture capital funds, etc. is disfavoured by RBI. Additional capital requirements are also prescribed in certain cases where reputational risk is considered to be high.

Monitoring of financial conglomerates

29. Financial conglomerates represent domestic systemically important financial institutions. While there is no differential prudential framework for these banks, they are subject to more intense supervisory oversight. Since Indian financial system is bank dominated, banks are the holding companies for most of the financial conglomerates. Since

2004, a mechanism for close monitoring of the financial conglomerates has been put in place through offsite surveillance, regular interaction with the CEOs of parent companies and other entities in the group and periodic reviews by College of Supervisors having members from sectoral and financial market regulators. The focus of the supervisory process is on management of group-wide risks, intra-group transactions and corporate governance. There are prudential regulations regarding Group capital adequacy, exposure limits and intra-group transactions.

Monitoring of common exposures

30. Banks' exposure to capital market is subject to a regulatory limit of 40 per cent of their net worth, both on solo as well as Group wide basis. Banks' exposures to sensitive sectors such as real estate are closely monitored. Exposure of systemically important NBFCs to sensitive sectors is also closely monitored.

Enhancing transparency and risk mitigation in OTC transactions

31. Recognising the risks associated with OTC transactions, considerable emphasis has been placed on their transparency and risk management. While the regulatory reporting on a periodic basis was already in place for these transactions, electronic reporting platforms were set up, about a decade ago, to enable online capturing as well as real-time information dissemination. The electronic reporting platform was setup in 2002, to start with, for the secondary market transactions in government securities. Such reporting arrangements have, subsequently, been extended to other important segments of OTC market and, currently, cover transactions in corporate bonds (both outright as well as repo), CPs, CDs, call/notice money and interbank rupee interest rate derivatives. The recently permitted CDS transactions also are proposed to be reported to the trade repository to be set up for this purpose. There is a proposal to set up a single point reporting mechanism for all OTC interest rate and forex derivative transactions.

32. As regards the issue of CCPs, CCP settlement of OTC trades in certain segments commenced as back as in 2002. CCP system for Government securities transactions was put in place in April 2002 while Forex (spot and forward) transactions were brought under CCP settlement in Nov 2002. CCP settlement of IRS and FRA trades is under advanced stage of finalization. With the setting up of mandatory reporting and the guaranteed settlement of OTC transactions across various segments of the financial markets, the transparency and counterparty risk management issues have been considerably addressed. However, keeping in consideration, the concentration of risks in the CCP, the oversight of the CCP systems is being actively pursued to contain systemic risks. This would be further strengthened as part of certain proposals in Basel III Framework relating to capitalisation of banks' exposure to CCPs which are likely to be finalized by BCBS towards the end of this year.

Other micro-prudential measures

33. Several other micro-prudential measures have been taken which contribute to financial stability. Some of these measures are:

(i) Forex liabilities and capital account management

- There is a limit on overseas borrowings by banks, other than for lending for exports. Limits are also placed on net open positions in relation to bank's capital funds.
- Excessive volatility of capital funds results in significant costs to the economies and has implications for financial stability. While equity flows both FDI as well as portfolio, have been accorded substantial freedom in the capital account regime in

India, debt flows are regulated with quantitative and price based measures. Debt flows are also calibrated into sovereign as well as corporate debt.

- The sovereign balance sheet has been protected from crisis inasmuch as India does not have foreign currency market borrowing and has limited dependence on foreign investors in respect of domestic currency debt. The general experience of Emerging Market Economies (EMEs) is that foreign investors in sovereign debt prefer short term investments. However, since India has a strong domestic investor base, elongation of maturity of debt has been possible.

(ii) Other measures

- Banks have to maintain a minimum of 24 per cent of their liabilities in the form of liquid assets, largely domestic sovereign securities. This provides adequate liquidity buffer.
- Profit on sale of assets under securitization to SPVs is allowed to be recognized only over the life of the securities issued by the SPVs. This effectively constrains incentives for “originate-to-distribute” model.

Concluding remarks

34. Macro-prudential approach to regulation and supervision involves a paradigm change. These are very early days and there is no doubt that over a period of time, various aspects of these policies would evolve. Currently, because of its infancy, there are several unsettled issues. The identification and measurement of systemic risk which has to be the starting point for designing macro-prudential policies needs a lot of work. Other important issues illustratively are: better understanding of the interaction of macro-prudential policies with other public policies, particularly with monetary policy; development of a tool kit to deal with systemic risk; designing of a robust early warning system regarding build up of systemic risks; evolving an optimal mix of rules and discretion while operating macro-prudential policies; extending the perimeter for macro-prudential instruments to cover the shadow banking system also which is going to be a very challenging task; defining the mandate and powers of the macro prudential authority and evolving a methodology to ensure accountability of such authority; and putting in place a framework for international cooperation, etc.

35. The institutional set up for macro-prudential authority is evolving and varies from country to country, the common denominator being that central banks typically play a major role in the conduct of these policies. The institutional structure for macro-prudential regulation in India has also undergone a change recently. RBI has historically been the macro-prudential regulator. Post crisis, in India, as in several other jurisdictions across the world, the institutional mechanism for financial stability has been sought to be strengthened. In December 2010, the Financial Stability and Development Council (FSDC), under the chairmanship of the Finance Minister, has been set up to deal with issues related to, *inter alia*, financial stability, inter-regulatory coordination and macro-prudential supervision of the economy, including the functioning of large financial conglomerates. The Council has all the financial sector regulators as members. A Sub-Committee of the FSDC, which is chaired by the Governor of the Reserve Bank, will assist the Committee. The Sub-Committee is expected to evolve as the operative body for financial stability in normal times while the FSDC would have a broad oversight and will assume a central role in crisis times. Now that the FSDC is in place, conventions and practices will develop over a period of time which will, while serving the goal of financial stability, also ensure that the autonomy of the regulators is not eroded.

36. The methodology for forward looking countercyclical provisioning which is long in making, needs to be finalized at the earliest.

37. While the BCBS has put in place guidance for national authorities operating the countercyclical buffer based on the credit/ GDP metric, it is difficult to apply this methodology to India and other EMEs as there is a large structural component in the credit/GDP metric which needs to be identified and segregated from the cyclical component. Similarly, experience shows that the credit exuberance is in specific sectors which a credit/GDP metric may not be able to address adequately.

38. Since the EMEs are undergoing rapid structural changes, the credit GDP ratio is likely to trend upwards much faster. The credit GDP ratio in India has shown a steady rising trend since 2001 as a result of which the credit gap has been generally positive and increasing during 2001–2011. However, output gap during the same period has alternated between positive and negative depending on the state of the economy. This suggests that the positive credit gap at times was co-synchronous with negative output gap. While negative output gap would suggest that the economy was in a downswing requiring expansionary monetary policy, positive credit gap trending upwards would, in a mechanical sense suggest application of capital buffers. This suggests that a more nuanced approach is required in the case of India, and, possibly, other EMEs, to counter procyclicality. It would also seem that the sectoral approach would be the more appropriate one as we have found in India. It would, therefore, be useful to devise a methodology for segregating the structural component from the cyclical component in the credit/GDP metric and devise a robust methodology to deal with the sectoral approach including jurisdictional (international) reciprocity.

39. The issue of communication while applying countercyclical policies has not received sufficient attention. As discussed earlier, the countercyclical prudential policies are likely to be less effective during downturns in ensuring stable credit supply. This is understandable because the risk perception is high in a downturn and the use of capital buffers for continued lending could be somewhat counter-intuitive. Maybe a nuanced communication regarding these policies and the actions taken under them at different points of time can create the right environment and understanding for these policies to work optimally during downturns. As the central banks have perfected the art of communication regarding monetary policy over a period of time, there would be a need for macro prudential authorities to similarly improve communication in this regard.

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