Macroprudential frameworks, implementation, and relationship with other policies

Reserve Bank of India

Abstract

Macroprudential tools were actively used in India long before the onset of the global financial crisis. The regulatory tools, and the power to activate them, reside with sectoral authorities, while the Financial Stability and Development Council is the apex body concerned with financial stability. Its Sub-Committee has taken on the role of finalising broad-based macroprudential policies and tools. As India is a bank-dominated economy, and the Reserve Bank of India regulates banks, non-bank financial companies and most other important segments of the financial markets, the Bank is the main centre for macroprudential analysis. This paper documents the successful implementation of various macroprudential tools such as provisioning, risk weights, loan-to-value ratios and capital flow measures. We also highlight the coordinated use of macroprudential and monetary policies in response to changes in the macro-financial environment before and after the crisis. Lastly, the analytical approaches to systemic risk assessment in India, together with the use of communication as a policy tool, are discussed.

Keywords: macroprudential, countercyclical policies, risk weights

JEL classification: G28, E44, E58

Background

The use of macroprudential framework and tools has found support from the G20 as a part of the post-crisis international regulatory reforms agenda. More recently, a joint stocktaking of the international post-crisis experience of developing and implementing macroprudential policies was presented to the G20 Leaders' 2016 Hangzhou Summit by the International Monetary Fund (IMF), Bank for International Settlements (BIS) and Financial Stability Board (FSB).

In this context, it may be mentioned that the Reserve Bank of India (RBI) applied macroprudential tools long before the Great Financial Crisis (GFC). In fact, we believe that, thanks to these pre-crisis macroprudential measures, the banking system emerged more resilient and better prepared to withstand the impact of the GFC. The IMF's 2012 Financial Sector Assessment Program (FSAP) for India also noted that the country had long-standing experience in the use of macroprudential instruments to counter credit cycles and that continued efforts to strengthen systemic oversight were being made.

This note presents the macroprudential policy framework in India covering the institutional framework, the RBI's policymaking mechanism for banks, non-banks and other sectors, interaction with other policies, process for systemic risk assessment, and communications policy.

Institutional framework

No single statutory authority or body is explicitly tasked with macroprudential policy for India's financial system as a whole. The Financial Stability and Development Council (FSDC) is the apex body responsible for financial stability. Its Sub-Committee (FSDC-SC), has become a body for finalising broad-based macroprudential policies for the system as a whole. Traditionally, the RBI has played a predominant role in the design and implementation of macroprudential policies as the regulator of a large section of the Indian financial system.[1] This function complements its lender of last resort role. Since its inception in 1935, the RBI has had a legal mandate to secure monetary stability and, for about a decade since 2004, financial stability was also included as an additional objective in its articulation of monetary policy, recognising its role in the conduct of monetary policy and to price stability. More recently, the RBI has formally moved to flexible inflation targeting, following the monetary policy framework established through an amendment of the Finance Act, 2016. This legislation established a Monetary Policy Committee (MPC) to determine the policy interest rate required to achieve the inflation target. The primary objective of the monetary policy is to maintain price stability, while taking economic growth into account.

Post-crisis, the institutional framework for financial stability underwent some significant changes. With a view to establishing a body to institutionalise and

[1] The RBI is the regulator of the scheduled commercial banks (SCBs), non-bank financial companies (NBFCs) and important segments of financial markets, ie forex, government securities and money markets.

strengthen the mechanism for maintaining financial stability, financial sector development and inter-regulatory coordination, the Financial Stability and Development Council (FSDC)[2] was set up in December 2010. As stated earlier, the FSDC has become the apex body concerned with financial stability along with macroprudential supervision of the economy, although it has a broader mandate that also includes financial sector development and inclusion. The RBI is a member of the FSDC along with the Securities and Exchange Board of India (SEBI), the Pension Fund Regulatory and Development Authority (PFRDA) and the Insurance Regulatory and Development Authority of India (IRDA). Given the largely bank-based system in India, macroprudential analysis and policy is carried out mainly by the RBI, in conjunction with other regulatory authorities such as SEBI, IRDA and PFRDA.

The FSDC is headed by India's Finance Minister. The executive arm of the FSDC is its Sub-Committee (FSDC-SC), which is headed by the Governor of the RBI. A number of permanent technical groups under the aegis of the FSDC-SC, such as the Inter Regulatory Technical Group (IRTG), discuss issues relating to financial stability risks and inter-regulatory coordination. Among these groups are also the Inter Regulatory Forum (IRF) for monitoring financial conglomerates (FCs) and the Early Warning Group (EWG), which looks for early signs of crisis situations. Each regulator independently takes decisions in its respective domain, while inter-regulatory issues, are discussed at the FSDC-SC Inter Regulatory Technical Group (IRTG) and then decided at the FSDC-SC itself. Macroprudential measures as well as tools framed or identified by each regulator may also be brought to the FSDC-SC for finalisation. Thus, the FSDC-SC serves as the authority for finalising broad-based macroprudential policies for the system as a whole.

The RBI's macroprudential policy framework

Regulatory tools, as well as the decision about when to activate them, reside with the sectoral authorities rather than with the FSDC. Given that India's financial system is dominated by banks and that the RBI regulates both banks and other types of financial institutions, macroprudential policy is set mainly by the RBI.[3] Macroprudential policy at the RBI has developed organically from microprudential regulation and supervision, and the same internal processes are used for decision-making purposes. The macroprudential dimension complements the microprudential focus on the soundness of individual institutions. Overall, macroprudential policy is assessed regularly through the biannual Financial Stability Reports (FSRs), which are subsequently discussed in the FSDC. Thus, a framework exists to consider macroprudential policy and assess its implementation.

Macroprudential tools are used to target the build-up of risks arising from (i) cyclical fluctuations in the credit supply, ie time-varying capital, time-varying general and specific provisioning etc; (ii) interdependence across institutions and sectors; and (iii) cross-border spillovers. Tools are implemented and calibrated based on continuous monitoring of various indicators of vulnerabilities, ie aggregate credit growth, credit growth in different segments such as commercial real estate,

[2] Set up by a Gazette notification available at http://finmin.nic.in/fsdc/GazNote31122010.pdf.

[3] Financial Stability Board (2016).

loan-to-deposit ratios, the credit-to-GDP gap, growth of non-performing assets, interest coverage ratio etc. In addition, tools can be differentiated by type of institution, sector, currency etc.

Bank-specific macroprudential orientation

In terms of Section 35 A of the Banking Regulation Act 1949, the RBI is empowered to issue directions to banks or bank groups. Some of the specific macroprudential measures are discussed below.

One of the early experiments with macroprudential policy in India can be traced back to the early 2000s. Banks were then directed to build up an investment fluctuation reserve (IFR) of at least 5% of their investment portfolio by transferring the gains realised on sale of investments within a period of five years. The IFR enabled banks to maintain stable capital adequacy and ensured that a cushion was built up during "good times", which was then used to "buffer" the hard times. This helped to cushion the impact of fluctuations in interest rates on banks' mark-to-market profits. The prescription was withdrawn gradually as the capital charge for market risk was implemented in a phased manner during 2004–06.

The RBI has used risk weight and provisioning requirements at different times to protect banks' balance sheets. Such measures also helped to reduce overheating of various sectors, such as capital markets, housing and commercial real estate. Anticipating emerging risks from this runaway credit growth, the RBI adopted pre-emptive countercyclical provisioning and differentiated risk weights for these sectors in 2004.[4] In addition, provisioning requirements for standard assets were also raised in November 2005, May 2006 and January 2007 in certain specific segments such as capital markets, retail loans and exposures to NBFCs. After the crisis unfolded, during 2008–09, RBI unwound some of the pre-crisis tightening measures, again responding countercyclically – easing both risk weights and standard asset provisioning norms – following a largely sectoral approach.

A loan-to-value (LTV) cap, along with a differential risk weight requirement for housing loans, was used to reduce overheating of the housing sector. An LTV cap as a function of loan size was introduced for the first time in 2007.[5] In the years leading up to 2012 and amidst a rapid increase in gold prices, some NBFCs expanded their lending against gold jewellery as collateral at a very rapid pace. The RBI noted that such growth rates were out of line with their NBFC peers and past experience. In response, the RBI imposed, in March 2012, a 60% LTV ratio on these companies as a prudential ceiling. Also, margins have been applied for loans against sensitive commodities and sectors that are generally subject to market fluctuations. For example, in the case of loans to individuals against capital market instruments as collateral, banks are required to maintain a minimum margin of 50% of the market

4 In its Mid-term Review of the Annual Policy for 2004–05, the RBI put in place a macroprudential measure by raising the risk weight on housing loans from 50% to 75% and that for consumer credit (including personal loans and credit cards) from 100% to 125%. The move had a major impact in arresting the credit and asset price bubble in a timely manner.

5 For loans of up to INR 3 million, a risk weight of 35% was allowed in the case of an LTV of up to 80%, but a higher risk weight of 75% was levied if the LTV exceeded 80% up to an LTV cap of 90%. For loans of INR 3–7.5 million, the risk weight was kept at 35% with the LTV cap at 80%. For loans exceeding INR 7.5 million (around US$ 150,000 at the time) a higher risk weight of 50% was prescribed with a lower LTV cap of 75%.

value of equity shares/convertible debentures held in physical form. In the case of shares/convertible debentures held in dematerialised form, a minimum margin of 25% is prescribed. There are also limits in relation to net worth on exposure to capital market instruments other than assets held as strategic investments.

Apart from the above tools, a framework for the countercyclical capital buffer (CCyB) and additional capital requirements for domestic systemically important banks (D-SIBs) have also been put in place. As regards the CCyB, its activation will take place when circumstances warrant. While taking the final decision on the CCyB's activation, along with the credit-to-GDP gap as the main indicator, the RBI may use its discretion to use all or some of the supplementary indicators, eg gross non-performing assets (GNPA) growth, the incremental credit-deposit ratio for a moving period of three years, the Industry Outlook Assessment Index, and the interest coverage ratio (along with its correlation with the credit-to-GDP gap). The indicators and thresholds for CCyB activation decisions are subject to continuous review and empirical testing, and other indicators may also be used by the RBI to support CCyB activation decisions.

For the D-SIBs, RBI uses a similar approach for adapting the Basel Committee on Banking Supervision (BCBS) framework to domestic circumstances.

Non-bank-specific macroprudential policies

NBFCs are exposed to risks arising out of counterparty failures, funding and asset concentration, interest rate movements and risks pertaining to liquidity and solvency. Risks of the NBFC sector can hence be easily transmitted to the financial sector, and similarly the NBFCs can be affected by adverse developments in the financial sector. As seen during the 2008 financial crisis, NBFCs came under pressure due to funding interlinkages between NBFCs and mutual funds. In response, RBI undertook a range of measures to support the NBFCs.

The NBFC sector is closely connected with the rest of the financial system and a few large companies that belong to financial conglomerates (FCs) operate in the insurance, broking, mutual fund and real estate sectors.[6] Their interconnectedness with other financial intermediaries has increased with expanded access to public funds through non-convertible debentures (NCDs) and commercial paper (CPs), as well as borrowing from banks and financial institutions. The financial parameters of NBFCs are analysed through off-site data on a quarterly basis, while the build-up of concentrations in specific sectors is analysed through a robust off-site return mechanism and through on-site inspections. Any potential risks are mitigated by prescribed safeguards (stringent norms for NCD issuances) etc. A well structured regulatory framework comprising, inter alia, capital requirements, credit concentration norms, leverage prescriptions and asset-liability management (ALM) prescriptions acts as a risk mitigant. Further, there is an attempt to harmonise the NBFC regulations with those for banks, with the objective of removing any arbitrage opportunity that might have implications for financial stability.

[6] A FC is identified on the basis of its significant presence – as determined by the respective regulator – in two or more market segments (banking, insurance, securities, non-banking finance, pension funds). Each FC has a "designated entity" within the group to act as the nodal entity.

Capital flow management measures

The RBI has also implemented measures to reduce financial stability risks caused by capital flow volatility, particularly those which amplify foreign currency risks or liquidity mismatch risks. To the extent the capital flow management measures (CFMs) address systemic financial sector risks, these measures may be viewed as being macroprudential in nature.

As regards capital flows, caps are in place, for various sectors receiving foreign investment, that have been gradually liberalised over time. These include sector-specific caps, domestic entity-specific caps and restrictions on external commercial borrowings (ECBs). Such prescriptions have been changed from time to time depending upon the circumstances. For instance, during the crisis, the all-in-cost ceilings under the approval route were removed, so that corporates could access ECBs. When credit market conditions improved, the all-in-cost ceilings under the approval route for the ECBs were re-imposed. RBI has also modulated the eligibility limit for foreign exchange remittances under the Liberalised Remittance Scheme (LRS) in both directions, as warranted by external market situation.

The Indian strategy has generally been to use soft capital account measures when needed. For example, to contain the forex volatilities seen in the wake of the 2013 "taper tantrum", the RBI applied CFMs, including direct administrative measures aimed at reducing capital outflows[7] and incentivising capital inflows, as well as measures to tighten domestic liquidity through the interest rate and the quantity channels. When the adverse spillover of these policies in the domestic markets, particularly the debt market, became evident, the RBI announced regulatory dispensations to protect banks' earnings. These measures were largely macroprudential in their orientation. In addition, the RBI introduced incremental provisioning and capital requirements for bank exposures to entities with unhedged foreign currency exposures in 2014.

Interaction with other policies

The RBI is mandated by law to maintain inflation within a 4±2% band. The Bank also functions as the main pillar of macroprudential policy authority in India, besides serving other objectives such as banking regulation and financial inclusion. The optimal balance between conflicting objectives may depend upon the circumstances under which a policy decision has to be undertaken.

Monetary and macroprudential policy could both work to a significant degree in shaping economic agents' expectations about the macro-financial outlook. As cited in a recent CGFS report,[8] the Indian experience shows how both policies could be used in a coordinated fashion in response to changes in the macro-financial environment. For example, countercyclical policies were accompanied with monetary policy tightening during 2004–08. During October 2008 to April 2009, when the RBI

7 India temporarily lowered the limit on the outward US dollar remittances of resident Indians from $200,000 to $75,000. It also lowered the cap on the overseas direct investment (ODI) of Indian firms for all fresh transactions from 400% of the net worth to 100%. In addition, it took monetary policy measures to lower rupee liquidity to curb dollar purchases and increased short-term interest rates as a transitory response.

8 Committee on the Global Financial System (2016b).

relaxed its macroprudential measures, it was also aggressively easing its monetary policy. The stance reversed after October 2009, when inflationary pressures warranted monetary tightening while increased credit growth in some segments of the economy necessitated macroprudential tightening. This demonstrated a coordinated approach to the conduct of monetary and macroprudential policy with the aim of simultaneously pursuing price and financial stability. Such coordinated responses were facilitated by the RBI's wide regulatory ambit. RBI policies were effective in reducing credit to commercial real estate and housing credit. Further, these measures were able to curb the disproportionate increase in sectoral credit without jeopardising or disrupting the flow of credit to other productive areas and priority sectors.

The Indian experience, so far, has also not demonstrated any major conflict between financial stability, financial sector development and financial inclusion. As discussed above, the regulatory framework for banking and non-banking sectors, has discouraged regulated entities from entering excessively risky business areas. On the other hand, steps to accelerate financial inclusion have further accelerated the diversification and expansion of banks' retail base. The competences of the FSDC, FSDC-SC and the regular interactions of the Ministry of Finance with financial sector regulators are considered adequate to deal with trade-offs, if any, between stability, development and inclusion.

Systemic risk assessments

The RBI uses state-of-the-art techniques for systemic risk assessment in support of the macroprudential analysis. The aim is to take a holistic view of the financial system through an ongoing systemic risk analysis process that includes stress tests, network analysis and contagion simulation. Various analytical tools, including advanced econometric tools, are employed, including (a) the systemic risk survey; (b) single factor sensitivity analysis; (c) banking stability maps and indicators; (d) estimation of expected loss, unexpected loss and expected shortfalls of banks; (e) macro stress testing; (f) stress testing of the derivatives portfolio of banks; and (g) financial network analysis. Macro stress tests aim to capture the impact of the real economy on the banking system. Most of the stress tests conducted by RBI are top-down in nature. However, bottom-up methodology is used in stress testing banks' derivatives portfolios, in which more than 20 leading banks in terms of the notional value of their derivatives portfolios participate. Also, a bottom-up version of the sensitivity analysis is carried out to assess credit risk, interest rate risk, liquidity risk and forex risk. Network analysis primarily looks into the interconnectedness that exists between different institutions to identify any build-up of systemic risks. It captures these linkages through different connectivity ratios. Further, contagion simulation helps in assessing the possible loss of capital to the financial system due to a random failure of one or more financial institutions. Both the solvency and liquidity effects of an institution's failure are assessed in this joint solvency-liquidity contagion analysis.

A Systemic Risk Survey is conducted twice a year with external experts, including market participants. More recently, the RBI has started to carry out detailed stress analysis of highly leveraged corporates and their impact on the health of the banking system. Other authorities, particularly the SEBI, have also begun to carry out systemic risk analysis.

The biannual *Financial Stability Report* (FSR) highlights vulnerabilities and potential risks, and include stress tests to assess the resilience of the banking system. The vulnerabilities and resilience of other sectors such as the capital markets, insurance and pension funds are assessed and monitored through the internal stability assessment framework of the respective regulators (ie SEBI, IRDA and PFRDA) and reported in the FSR. The report is approved by the FSDC-SC and published by the RBI, with contributions from all other members of the Sub-Committee.

In the case of banking system, the regulatory departments of the RBI identify the risks and vulnerabilities pointed out in the FSR and prepare a detailed analytical note on the regulation/initiatives in place to deal with them as well as those required to be put in place to mitigate risk. The note is submitted to the Board for Financial Supervision (BFS), the apex body for the supervision of banking system, and the issues and required actions are then discussed. The observations in the FSR are also submitted to the RBI's Central Board of Directors.

Progress has also been made in addressing data gaps, for example via the creation of a Central Repository of Information on Large Credits (CRILC) and the collection of data on corporates' foreign currency exposures and their hedging. Steps have been initiated by the FSDC to form a Financial Data Management Centre to facilitate information-sharing and analysis.

Communication of macroprudential policies in India

In India, macroprudential policy announcements are made when required, generally as part of the Statement on Developmental and Regulatory Policies released together with the Monetary Policy Statements. The aim and reasoning behind the policy is explained in the policy statements or in the notifications on policy changes. Major intended changes are often communicated in draft form and comments or feedback are solicited from the stakeholders. The comments or feedback received are analysed and any changes are incorporated before the final report or notification is communicated to the wider public.

While policy decisions are communicated through notifications and press releases, any background information on the rationale and possible impact of the policy stance, or any possible alternatives, is communicated to the wider public mainly through speeches by senior management and publications such as the Annual Reports and Financial Stability Reports. Regulations relating to a particular aspect of policy are consolidated in regularly updated master documents. In addition, the RBI conducts workshops for the media on the background and rationale of regulations.

The RBI's annual *Report on Trend and Progress of Banking in India* traces developments in banking regulation and supervision together with the major policy guidelines and their rationale. The biannual *Financial Stability Report* has been mentioned above.

Concluding observations

The RBI generally uses macroprudential tools in coordination with other policy instruments. Macroprudential policy actions are based on informed judgment rather than rules, in response to trends in aggregate credit and sectoral credit growth. This approach also meets the need for coordination between the macroprudential, monetary, and fiscal policymakers. On the whole, the RBI exercises guided discretion in the appraisal and implementation of macroprudential instruments, based on qualitative judgement supported by quantitative analysis to the extent possible.

Generally, macroprudential tools are implemented with a specific objective in mind. The RBI's analysis and decision-making process for macroprudential polices are not influenced by the state ownership of a large part of the banking sector. As is widely accepted, measuring the cost of macroprudential actions is difficult especially when more than one tool is used concomitantly. Further, measuring the costs and benefits of the macroprudential policies may not always be quantifiable and hence the analysis is more subjective in nature. This has been a challenge globally. However, the RBI is continuously seeking ways to improve the robustness of both its qualitative as well as quantitative cost-benefit analysis of macroprudential policy tools keeping in view global developments in this area.

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