

Chapter V

Financial Sector Policies and Infrastructure

The international regulatory community has made significant strides in drawing up a blue print for regulatory reforms which strives to tackle the perceived fault lines in the pre-crisis regulatory set up. The big ask for emerging market economies (EMEs) like India is that the requirements for higher capital come precisely at a time when the growth impetus and greater financial inclusion are expected to result in higher credit off-take. Careful phasing in of the enhanced international requirements will be warranted though the comfortable capital adequacy position of banks in India and the rigorous pre-crisis regulatory framework means that the banking system may not be unduly stretched in adjusting to the higher capital requirements. At the individual bank level, some banks will have to raise additional capital. However, given an extended time frame for implementation of the Basel III measures, it should not present any significant challenge. The use of a macroprudential toolkit has achieved reasonable degree of success in India in countering the potential adverse impact of asset price fluctuations and high credit growth in some sectors on banks' balance sheets. However, important issues need to be addressed if the effectiveness of such policies is to be sustained. Interconnectedness between various segments of the financial markets and between financial market participants has emerged as an important element of macroprudential supervision. Closer supervision of institutions which are highly interconnected in payment and settlement systems or through inter-bank liabilities may be warranted. Adoption of international norms will be challenging and will require concerted efforts and suitable calibration to domestic conditions. The regulation of financial conglomerates (FC) will need to be improved drawing upon international policy developments. The introduction of the financial holding company structure could be a step towards better ring fencing banks from the risks of associated group companies relative to the parent led model in which it is the bank which carries the risks, including reputational risks arising from the activities of the subsidiaries/associates. Enhancing the regulatory framework for Non Banking Financial Companies (NBFCs), plugging regulatory gaps in this sector, addressing the emergent issues relating to the microfinance sector and tackling the very complex issue of the road map for foreign banks in India present important challenges. The payment and settlement system infrastructure continued to function smoothly. Some soft spots remain – concentration of payment and settlement transactions amongst a few participants, concentration of risks in Central Counterparties (CCPs) and the fact that some critical settlement systems remain outside the purview of the Payment and Settlement Systems Act, 2007. Safety net arrangements are in place though some deficiencies and vulnerabilities remain.

5.1 Financial stability depends, in part, on a robust and well-managed financial infrastructure. Reforms in financial policies, improvements in financial market infrastructure and reorganisation of regulatory architecture are all part of a package of measures aimed at ensuring the stable supply of financial services to the real economy and at removing the fault lines which permitted the cyclical build up of risks, several of which were thrown into sharp relief during the global financial crisis.

5.2 The first part of this chapter outlines the unfolding financial sector reforms agenda internationally

and highlights the challenges ahead with respect to implementing them in India. The second part discusses the issues thrown up by the single most critical lesson of the crisis – that of the importance of macroprudential supervision for systemic risk management, and presents the results of an empirical exercise highlighting the interconnectedness in the Indian banking sector. The emerging trends in regulatory architecture globally are then discussed and some specific issues/gaps in the Indian context highlighted. Finally, the key developments in financial market infrastructure and in the arrangements for financial safety nets are presented alongwith the critical issues thereof.

Financial Sector Policies

5.3 In the period since the publication of the first FSR in March 2010, there has been significant progress in crystallising the global regulatory reforms agenda which was set in motion with a view to fortify the financial system, correct the incentive framework and ensure its long term stability. While there is considerable emergent international consensus on the requirement for more stringent regulatory norms, there is a simultaneous realisation that, given the current health of the banking and financial system and of the global economy, a well calibrated transition is mandatory to ensure that the still fragile, global recovery is not impeded.

5.4 The Basel Committee on Banking Supervision (BCBS) has announced a series of measures to strengthen prudential or firm level regulation which will help in raising the resilience of the individual financial institutions. The Committee has also announced a series of reform measures with a macroprudential focus to address system-wide risks. The Financial Stability Board (FSB) has coordinated a range of regulatory reforms including measures to address the moral hazard risk associated with Systemically Important Financial Institutions (SIFIs), ensure supervisory intensity and effectiveness, reduce reliance on credit rating agencies, improve compensation practices and effect reforms in the OTC derivative markets. Some progress has also been made in achieving convergence in international accounting standards.

5.5 The previous issue of the FSR had outlined the various policy initiatives taken prior to and during the financial crisis which enabled the Indian financial system to remain resilient in the face of the disturbances to financial stability internationally. The strong regulatory and supervisory framework put in place in the country for financial institutions, especially banks, financial markets and financial infrastructure imply that adjusting to many of the reform measures being contemplated internationally may not unduly stress the system. In fact, several measures that are now being thought about internationally have already been designed into the Indian regulatory architecture. Nevertheless, the proposed reforms agenda calls for a shift in certain policy approaches.

Capital Adequacy Framework – BCBS proposals

5.6 Collectively, the new global standards to address both firm-specific and broader, systemic risks have been referred to as "Basel III". Basel III comprises the following building blocks, which have been agreed and issued by the Basel Committee and the Governors and Heads of Supervision between July 2009 and September 2010:

- Raising the quality of capital to ensure banks are better able to absorb losses on both a going concern and a gone concern basis;
- Increasing the risk coverage of the capital framework, in particular for trading activities, securitisations, exposures to off-balance sheet (OBS) vehicles and counterparty credit exposures arising from derivatives;
- Raising the level of the minimum capital requirements, including an increase in the minimum common equity requirement from 2 per cent to 4.5 per cent and a capital conservation buffer of 2.5 per cent, bringing the total common equity requirement to 7 per cent;
- Introducing an internationally harmonised leverage ratio to serve as a backstop to the risk-based capital measure and to contain the build-up of excessive leverage in the system;
- Raising standards for the supervisory review process (Pillar 2) and public disclosures (Pillar 3), together with additional guidance in the areas of sound valuation practices, stress testing, liquidity risk management, corporate governance and compensation;
- Introducing minimum global liquidity standards consisting of both a short term liquidity coverage ratio and a longer term, structural net stable funding ratio; and
- Promoting the build up of capital buffers in good times that can be drawn down in periods of stress, including both a capital conservation buffer and a countercyclical buffer to protect the banking sector from periods of excess credit growth.

5.7 A timetable for the transition to the new standards¹ has also been announced based on, *inter*

¹ <http://www.bis.org/publ/bcbs179.pdf>

alia, the findings of a Quantitative Impact Study conducted by the Basel Committee. National implementation of the Basel III capital requirements in respect of common equity will begin on 1 January 2013 and is expected to be completed by 2015. Thereafter, the calibration of the capital conservation buffers will commence, reaching the final level at the end of 2018.

The proposed capital rules – the banking system not likely to be unduly stretched but some banks may face some challenge

5.8 The Basel III proposals reflect the lessons from the crisis and are expected to be "quite game changing"². In particular, for emerging economies like India, the implementation comes at a time when credit demand is expected to pick up given, *inter alia*, the compulsions of robust growth, the investment needs of infrastructure and the demand ushered in by increasing financial inclusion. Simultaneously meeting the requirements of additional capital buffers and the sharply growing credit needs of the economy at an affordable cost will be no easy task. However, the comfortable capital adequacy position of the banks in India (CRAR at over 14 per cent and core CRAR at over 10 per cent as on September 30, 2010) under Basel II norms means that the Basel III requirements, once fully calibrated, are not likely to be very much higher than the current position.

5.9 Nevertheless, there remain important challenges. First, there could be some impact when the new standards are adopted due to shifting of some deductions such as intangible assets and deferred tax assets from Tier I and Tier II capital to common equity. A quick estimate of the impact of the requirements under Basel III on the capital adequacy ratio of banks in India indicates, however, that, on application of the Basel III deductions for common equity, the common equity ratio will remain above 7 per cent.

5.10 Notwithstanding the current position at the aggregate level, the capital adequacy ratios for a few individual banks may fall short of the Basel III norms in the coming years, which means capital may need to be augmented. However, as the phase in time allowed

is long enough, these banks should be able to adjust to the enhanced requirements comfortably.

5.11 A further impact is likely to result from the proposed changes aimed at increasing the risk coverage of the capital adequacy framework. The proposed changes in respect of the counterparty credit risk framework are likely to have implications for the capital adequacy ratios of banks in India, especially those with large OTC derivative positions. However, the impact from the changes proposed to securitisation exposures and trading book positions may not be very significant.

Leverage ratio not expected to be a binding constraint

5.12 Leverage of Indian banks remains moderate and is unlikely to be affected by the Basel Committee's present proposals in this respect. However, some concerns arise with respect to the treatment of the statutory liquidity ratio (SLR) portfolio of the banks. As the portfolio is a regulatory mandated part of the bank's balance sheet, there is a strong argument in favour of excluding the portfolio from calculations of leverage. The argument is further strengthened by the fact that this portfolio carries only moderate risk. Proposed international norms do not, however, permit this and require that no assets, including cash, should be excluded from the measurement of the leverage ratio.

Liquidity position comfortable – but some challenges remain

5.13 Most Indian banks follow a retail business model and do not depend much on short term / overnight wholesale funding. They also have a substantial amount of liquid assets which should enable them to meet the new standards for liquidity. Hence, many of the new requirements under Basel III are not expected to unduly stretch banks in India.

5.14 There remains an issue about the extent to which SLR holdings can be taken into consideration for the purpose of calculating the liquidity ratios. As these holdings are required to be maintained on an ongoing basis, there could be an argument that they should not be reckoned at all. However, it may be reasonable to reckon at least part of the SLR holdings in calculating the liquidity ratio under stress conditions, as the SLR

² "Post-crisis Reforms to Banking Regulation and Supervision – Think Global, Act Local', Inaugural address by Dr. D. Subbarao, Governor, Reserve Bank of India, at the FICCCI-IBA Conference on Global Banking: A paradigm Shift", September 2010

holdings are primarily government bonds against which the Reserve Bank provides liquidity.

5.15 Banks in India may have to deal with the complex job of formulating and predicting liquidity stress scenarios with reasonable accuracy and consistency according to the requirements of the new liquidity standards. Given that Indian markets have not experienced the levels of stress that global markets were subjected to, predicting stress scenarios is going to require a qualitative judgemental call. Adding to the difficulty would be the constraints in availability of accurate and granular data in a timely manner.

Calibration of buffers requires careful judgement about the macroeconomy

5.16 The calibration of the proposed countercyclical buffers requires important judgements about the state of the macroeconomy. This implies understanding the stage of the business cycles at the aggregate and sectoral levels, which presents some difficulties. The deviation of credit-GDP ratio from its long term trend is generally used for the purpose, but this metric has not proved to be a reliable indicator in emerging markets like India where it tends to rise for structural reasons – higher credit off take due to higher growth and greater financial inclusion. In fact, a study undertaken by the Reserve Bank shows that the credit to GDP ratio has not historically been a good indicator of build up of systemic risk in the banking system. Even the sectoral countercyclical policy measures undertaken by the Reserve Bank in the last decade or so have relied on a number of qualitative and quantitative indicators - deteriorating underwriting standards revealed by onsite inspection of banks, signs of under pricing of risks in the real estate sector, emerging trend of second homes for investment purposes, anecdotal evidence in respect of build up of inventories of completed properties and steep increase in land prices – many of them not easily quantifiable.

The NBFC sector is expanding rapidly even as regulatory norms are tightened

5.17 Tightening the regulation of the banking sector increases the incentives for regulatory arbitrage by moving business to non-banking financial institutions

(NBFI)s). This is particularly so in the current environment in India when NBFCs (in particular, the non-deposit taking systemically important NBFCs) are expanding rapidly and both interconnectedness and product competition across types of institutions are intensifying. Regulatory reforms in the non-banking sector as well as enhanced supervision to indentify and plug scope for regulatory arbitrage would be critical in ensuring that the proposed reforms achieve their objective of creating a more resilient financial sector. Several initiatives have been taken to tighten the regulatory framework for the non-banking financial sector which include, *inter alia*, increasing application of prudential norms as applicable to banks to the shadow banking sector³.

Assessing the impact of the reforms package

5.18 Not surprisingly, there has been considerable attention on the final form of the proposed reforms, their implications, pros and cons and impact on global growth. Three recent studies, two by the Bank for International Settlements (BIS) and one by the Institute for Industrial Finance (IIF), a Washington based private sector body, have arrived at different estimates of the impact of the reforms on growth, both in the short and long term.

5.19 According to the BIS study, there could be a modest impact of the transition towards higher capital standards on aggregate output, especially if the higher requirements are phased in gradually (a percentage point increase in the bank's ratio would lead to a decline in annual growth rate by an average of 0.04 per cent over a four and a half year period). The IIF study concludes that the implementation of regulatory reforms would subtract an annual average of about 0.6 per cent from the path of real GDP for the G3 (US, Euro Area and Japan) over a five year period and an average of 0.3 per cent over a ten year period. The differences in estimates are partly a result of differing assumptions as also a consequence of the weak database and the fact that many relationships in the financial markets and between the financial and the real markets are non-linear.

5.20 The Reserve Bank has also made a preliminary assessment of the increased capital requirements on the country's growth path and will calibrate the phase

³ Reserve Bank of India, Report on Trends and Progress in Banking, 2009-2010 (<http://rbi.org.in/scripts/PublicationsView.aspx?id=12975>)

in of the standards to ensure that any sacrifice of growth is within acceptable limits.

Managing the moral hazard posed by SIFIs

5.21 The financial crisis brought to the centre stage the need to ensure that large and complex financial institutions (LCFIs) are subject to regulatory and supervisory requirements which are commensurate with the degree of risk they pose to the financial system. The crisis underscored the moral hazard associated with such "too big or too interconnected to fail" entities – markets /investors believe that the LCFI will be bailed out in the event of distress, thus requiring a lower rate of return on debt issued by them which translates into a "funding advantage" for such entities and providing incentives for higher risk taking⁴. The problem is exacerbated as most jurisdictions do not have in place adequate legal frameworks to deal with distressed large and interconnected financial firms. As the 12th Geneva Report on the World Economy states, "*The end game – resolution of failing institutions - is not well defined at a cross border level and often within countries as well*".

5.22 International efforts at reforming policies related to SIFIs have proceeded towards addressing three specific issues: (i) reducing the probability and impact of failure via higher prudential requirements including higher capital requirements, better supervisory practices, potential limitation on the size, breadth and intra-group connectivity; (ii) improving resolution capacity; and (iii) strengthening core financial infrastructures and markets to address interconnectedness and lessen the risk of contagion in case of failure.

5.23 The work involved, however, necessitates answers to some very complex questions. In the first place, there is the ticklish issue of assessing the systemic importance of a financial institution. International opinion⁵ is veering towards a combination of factors, primarily size (relative or absolute), interconnectedness (i.e. linkages with the rest of the system e.g. through interbank lending or as an important counterparty in a key market) and

substitutability (the extent to which other components of the system can provide the same services in the event of a failure). These factors can, at best, constitute the basic criteria for measuring the systemic importance of an institution and the final decision will need to incorporate institutional factors - both quantitative and qualitative.

5.24 The specifics of higher prudential requirements for SIFIs, including the magnitude of higher loss absorption capacity are still under preparation. Work is ongoing for improving the resolution capacity of firms, putting in place firm specific recovery and resolution plans (RRPs) and developing an effective resolution regime for cross border financial institutions.

5.25 A related issue involves the imposition of a levy or tax on the financial sector to ensure that the sector pays for the costs associated with any government intervention. A few countries have announced or are considering such taxes and the IMF has made a series of recommendations in the matter. However, there is no international consensus on the issue and while the tax payer should not have to pay for the rescue of the financial sector, an ex ante financial sector levy cannot be a one size fits all solution. In India, in particular, proactive regulation, caps on leverage and cash reserve ratio (CRR)/SLR prescriptions can reduce the need for any bail out.

Increasing the loss absorbency of regulatory capital

5.26 A separate set of proposals internationally aim at the introduction of new tools that ensure that uninsured creditors also face credible threats of incurring losses should a financial institution run into difficulties. Contingent capital and bail-in capital are two variants of such tools (Box 5.1).

Architecture for the supervision of SIFIs in India – robust but some challenges remain

5.27 The previous FSR had outlined in detail the existing arrangements for regulation and supervision of large financial institutions (FCs) in India. The financial system in India is largely dominated by banks,

⁴ "The value of "too big to fail" big bank subsidy", D. Baker and T. McArthur, CEPR Issue Brief, 2009

⁵ IMF: "Guidance to assess the systemic importance of financial institutions, markets and instruments", 2009

Box: 5.1: Restructuring the Liability Structure of a Bank's Balance Sheet: Contingent Capital and Bail-ins - Perspective and Issues

There has been considerable international interest in re-designing the liability structure of banks' balance sheets, primarily to deal with funding issues and reducing moral hazard of too big to fail institutions. The underlying idea is that there should be enough loss absorbing capacity on the liability side of the balance sheet to absorb all losses without tax payers' support, and the loss absorption should occur in a way which does not shock the system or disrupt essential business activities such as lending. While the focus in this regard has been on finding methods to lengthen bank debt maturities and calibrating a Net Stable Funding Ratio (NSFR), many other proposed measures have also found a place in the policymakers toolbox. Among them, two measures that have generated substantial global debate are Contingent Capital and Bail-ins. Contingent capital, also known as CoCos, has already made its way into regulatory framework whereas bank creditors' bail-in is in a nascent stage of development.

CoCos are a form of debt that converts to equity when a bank faces financial distress. In principle, they are debt instruments in normal times that automatically convert into common equity when a pre-specified stress related trigger is breached. The triggers can be linked to the deterioration in the condition of the specific banking institution and/or to the banking system as a whole. However, using contingent capital during tough times does not necessarily imply actual cash being transferred to the bank, but could simply mean a change in its existing liability structure. On the other hand, bank creditors' bail-in, though similar to contingent capital in its objective, is functionally different as it would possibly apply to a larger part of banks' liabilities and could encompass future as well as existing debt. Bail-ins essentially turn the whole capital structure into contingent capital. The modalities of bail-ins are still under discussion and could take various forms, for instance, a simple haircut and/or a mandatory conversion of senior debt into equity. The current working assumption is that haircut to senior creditors will be imposed only after common equity and subordinated debt are wiped out. Therefore, bail-ins are expected to take place close to the point of non-viability of the bank, which may raise some issues as to the feasibility of bail-ins.

While conceptually both contingent capital and bail-ins appear to be simple yet stout instruments, implementing them is far from easy. An important factor for contingent capital securities to prove effective as a buffer is that the conversion triggers need to be set at the appropriate level. However, this appropriate level is difficult to determine before a crisis actually hits. Published capital ratios can be lagging indicators of financial strength and can be calculated more conservatively by one bank than another. The second issue relates to pricing of contingent capital instruments, which is key to have an investor base. It is almost impossible to see a significant drying up of liquidity near the trigger, which will have an influence on the price. Moreover, the behaviour and psychology of all

stakeholders near the trigger point is not clear and hard to model. Hence, the pricing of contingent capital is not an easy task. The third issue emanating from contingent capital is the fixed income seeking investors, mostly insurance companies, that they attract. This increases interconnectedness since a transmission channel is created that transfers risk from the banking sector to the insurance sector. The conversion of contingent capital may result in losses for the insurers and although conversion may help to resolve a banking crisis, it could create an insurance crisis or a run on certain mutual funds that invest in contingent capitals. Moreover, after conversion, some fixed income investors may end up with equity shares which their investment mandates do not allow them to hold. As a consequence, they will be forced to sell these shares, potentially at fire sale prices. This is likely to put additional pressure on the share price of the bank that could further accentuate investors' losses. Similar issues are also associated with bail-in instruments. The most obvious impact would be an increase in the cost of funding for the banking sector as a whole, as the bail-in instruments will have to be priced significantly higher to attract investors. Bail-ins can be effective tools for resolution or recapitalisation of a failing institution. This can be achieved by either having a resolution regime that empowers regulators to impose losses on various categories of fund providers or by having categories of fund providers which are contractually committed in advance to absorb losses (via write-down or conversion to equity) so as to achieve recapitalisation. The first instance would require enactment of new legislation which give regulators the resolution powers to impose write-down or conversion on specified categories of non-capital fund providers. On the other hand, using a contractual route would require that a certain minimum proportion of RWAs should be funded by securities which include convertibility or bail-in procedures within their contractual terms.

Irrespective of the many challenges involved in implementing both contingent capital and bail-ins, they are policy alternatives that can dramatically reduce systemic risk by protecting depositors, transaction payments and key customer activities and by reducing cost of big bank failure and risk of runs. Contingent capital and Bail-in could work together, if purpose of each are made clear. Contingent capital could be used to force early action, create management incentives and address smaller crises, while bail-ins would be the army in reserve, that would be used to eliminate tail risk and help contingent capitals to be more convincing.

References:

- a) *Contingent Capital: an in-depth discussion- Stan Maes and Wim Schoutens*
- b) *Contingent Capital With A Capital Ratio Trigger- Paul Glasserman and Behzad Nouri*

and in most cases they are also the parents of the identified FCs. The current supervisory structure envisages a two-pronged approach encompassing off-site surveillance and periodic interface with the conglomerates, which has proved quite robust in assessing the risks faced by these institutions. Going forward, however, improvements in the regulation and supervision of these large financial firms may be warranted.

Differential prudential norms may be warranted, going forward

5.28 First, the current approach towards FCs is focussed primarily on more intensive supervision and no differentiated prudential requirements have been considered necessary. International regulatory requirements may also not immediately mandate separate prudential requirements for the large domestic firms which are not Global SIFIs. None of the Indian banks are likely to be considered Global SIFIs. Regardless, policies for domestic SIFIs will need to be strengthened drawing on international policy developments in this respect.

A bank holding company structure may ring fence risks better

5.29 The second issue relates to the organisational structure of FCs in India. Deregulation and financial consolidation have led to the development of Financial Holding Companies – allowing commercial banking, insurance, investment banking and other financial activities to be conducted under the same corporate umbrella. In India, however, the parent led model is predominant and any expansion of the activities of a bank can take place either within the bank (Universal Bank) or by way of setting up of subsidiaries / associates/ joint ventures (Bank Subsidiary Model). In this kind of a model, it is the bank which carries the risks, including reputational risks arising from the activities of the subsidiaries/associates. The bank also holds the responsibility of corporate governance in the group. The model may also require banks to set aside a substantial amount of equity to ensure that the subsidiaries are well capitalised. Relative to this, a holding company structure is likely to reduce the risks carried by the bank. A Working Group has been constituted in the Reserve Bank to recommend a roadmap for the

introduction of a bank holding company structure together with the required legislative amendment/framework.

Orderly resolution of FCs could be legally and operationally difficult

5.30 There are several legal and operational difficulties with respect to the infrastructure in place for the orderly resolution of institutions, more so for complex financial institutions. As discussed in paragraph 5.123 of this Chapter, there are limited resolution options available with the Reserve Bank and with Deposit Insurance and Credit Guarantee Corporation (DICGC), the deposit insurer.

Interconnectedness with the non-banking sector continues to be critical

5.31 The fourth and most critical issue related to the operations of FCs in India, as also globally, arises from the inter-connectedness with the non-banking financial sector. While NBFCs (both deposit taking and large non-deposit taking entities) are regulated by the Reserve Bank, other entities are regulated by, *inter alia*, Insurance Regulatory and Development Authority (IRDA), Securities and Exchange Board of India (SEBI) and National Housing Bank (NHB). A coordination mechanism in the form of High Level Co-ordination Committee on Financial Markets (HLCC-FM) (the HLCCFM Technical Committee on RBI Regulated Entities to be precise) has been designated as the inter-regulatory forum for having an overarching view of the FC monitoring mechanism. The Indian financial system is largely a bank dominated one. Outside of the banking sector, however, the capital and liquidity regulatory framework is less rigorous though tightening of the regulatory framework for the sector is an ongoing exercise (paragraph 5.17 of this Chapter).

Compensation

Compensation was always regulated in India – fine-tuning the framework underway

5.32 The particulars of the way towards risk-adjusted compensation are far from clear. Yet, the details of how compensation is earned are essential to sound practices. Post crisis, therefore, compensation has become one of the important areas for reforms. In

India, the compensation of CEOs of banks has always been regulated - fixed by the Government in case of public sector banks and requiring approval of the Reserve Bank in case of the private sector and foreign banks⁶. Notwithstanding, in line with steps taken by the global community, the Reserve Bank has also had a re-look at the current compensation practices of banks. In July 2010, the Reserve Bank issued draft guidelines on compensation practices of private sector banks and foreign banks for public comments. The draft guidelines stipulate norms covering all employees of banks, risk takers as well as risk control staff. They cover various aspects of the compensation framework, viz., governance, risk alignment and disclosure, and are in broad conformity with the FSB principles on compensation⁷. The final guidelines will be issued taking into account the comments received from all stakeholders.

Credit Rating Agencies (CRAs)

Reducing reliance on CRAs – the way forward

5.33 The Financial Stability Board, in a bid to reduce the 'cliff effects' from CRA ratings that can amplify procyclicality and cause systemic disruption, has endorsed a set of principles to reduce authorities' and financial institutions' reliance on CRAs. The principles cover five types of financial market activity: prudential supervision of banks; policies of investment managers and institutional investors; central bank operations; private sector margin requirements; and disclosure requirements for issuers of securities. National and regional authorities internationally have already started taking steps to lessen such reliance or are considering ways to do so. There remain, however, several issues with reducing such reliance.

Identifying objective alternatives to CRAs presents difficulties

5.34 In India, the Reserve Bank has been emphasizing that banks should carry out their own assessment and not rely on ratings exclusively. However, the removal or replacement of CRA ratings in regulations, and the associated reduction in market reliance, cannot happen overnight. In many cases, it will require the

development of alternative measures of creditworthiness and of additional risk management capacity, which will take some time. In particular, the reliance of banks on external ratings for arriving at their capital requirements using the Standardised Approach under Basel II is likely to continue in many jurisdictions, including India. Very few banks can be expected to migrate to the Internal Ratings Based approach. Also, in order to strengthen investors' ability to make their own credit assessments, the quality and quantum of disclosure by issuers of securities would also have to improve significantly.

Regulatory regimes for CRAs being strengthened internationally

5.35 The crisis, *inter alia*, underscored the need for an effective regulatory oversight regime of CRAs. Post-crisis, a number of national and regional initiatives have been taken or are underway to strengthen the oversight of CRAs. The emerging challenge from these initiatives is the need to avoid inconsistencies or frictions arising out of differences among the new CRA regulations in different jurisdictions.

Functioning of CRAs in India robust, but the regulatory framework needs to be strengthened

5.36 There was no prima facie cause for concern in the functioning of the rating agencies in India even in the context of the financial crisis. However, there remains a need to ensure that the CRAs comply with extant codes of conduct and that generic issues such as accountability, transparency and conflicts of interest, which are also being grappled with at the international level, are taken care of. The rating requirements in India are essentially driven by regulatory policies applicable to exposures of the regulated entities to various asset classes. While the Securities and Exchange Board of India (Credit Rating Agencies) Regulations, 1999 empower SEBI to regulate CRAs operating in India, SEBI's jurisdiction over the CRAs only extends to their activities in securities market and dealings of CRAs specifically in instruments categorized as "securities" as defined under the Securities Contract (Regulation) Act, 1956 and does not cover the activities governed

⁶ In terms of the Banking Regulation Act, 1947

⁷ "Principles on Sound Compensation Practices", FSB, April 2009

by other regulators. It is thus imperative that the accreditation process of rating agencies in respect of such activities coming under other regulators and the rating methodology employed for such activities is looked into by the regulator concerned. In respect of banks, the Reserve Bank does accredit CRAs as External Credit Assessment Institutions based on a rigorous evaluation.

5.37 The entire gamut of issues relating to the regulatory infrastructure in place for CRAs was examined by a 'Committee on Comprehensive Regulation of Credit Rating Agencies' formed at the behest of the HLCCFM. The Committee flagged some of the above areas of potential concern relating to the functioning of CRAs and has highlighted the need for strengthening the regulatory architecture in this respect.

5.38 Given the continuing criticality of CRAs in the financial sector, the regulators would also need to work towards further strengthening the rating framework. The system needs to shift away from issue-rating to issuer rating - the rating assigned to a particular instrument cannot be taken as reflective of the credit risk of the issuing entity. The rating agencies are supposed to adopt a through the cycle approach while assigning ratings. The regulators, nevertheless, need to use the risk weights applicable to the external ratings dynamically as per their assessment of systemic risk on a sectoral basis.

International accounting standards

Roadmap for convergence with international standards announced

5.39 A Core Group appointed by the Ministry of Corporate Affairs (MCA) has, since the publication of the first FSR, released phased road maps for convergence with International Financial Reporting Standards (IFRSs) for corporates and banks in India. While scheduled commercial banks are required to converge with the IFRS with effect from April 01, 2013, a phased arrangement for Urban Co-operative Banks (UCBs) and NBFCs has been suggested depending on the size of the entity and on whether the NBFC is listed or not. Regional Rural Banks (RRBs), UCBs and NBFCs with a relatively smaller net worth will continue to follow the notified Indian accounting standards.

Critical accounting standards are currently moving targets and may pose difficulties

5.40 The Indian banking system will need to address certain issues in implementing the convergence with the IFRSs. First, the very crucial IFRS 9 relating to Financial Instruments, is still evolving and the final standard is unlikely to be available before the middle of 2011. Thereafter, the Institute for Chartered Accountants of India (ICAI) will need to promulgate the converged standard for India. The migration to the 'fair value' regime in certain cases and the adoption of expected loss approach to loan loss provisioning could pose significant challenges as extensive guidance may not be available in India in terms of market practices or benchmarks. Converging to the standards would require considerable skill upgradation and modification in the IT systems of banks. The Reserve Bank has constituted a Working Group to address the implementation issues and facilitate formulation of operational guidelines for the convergence.

Macroprudential analysis and systemic risk management

A macroprudential approach to policy – the critical lesson from the crisis

5.41 Explicit pursuit of macroeconomic and financial stability can be said to be the single most significant take away from the recent crisis. The post crisis framework for the regulation of the financial sector has come to encompass two distinct, but highly interrelated constructs - that of macroprudential policy and of systemic risk management. Macroprudential policy requires calibration of financial policies /regulatory and supervisory arrangements from a systemic perspective rather than from the perspective of individual institutions. Systemic risk *per se* is a complex concept with there being little agreement about a precise definition amongst policy makers and academicians (Box 5.2).

Both time and cross sectional aspects of macroprudential policy are being addressed

5.42 Typically, a macroprudential approach to policy encompasses two dimensions – there is a *time dimension*, dealing with how aggregate risk in the financial system evolves over time. And there is a *cross-sectional* dimension, dealing with how risk is allocated within the financial system at a point in

Box 5.2: Measuring Systemic Risk - Issues and Options

The global financial crisis has created renewed interest in unraveling the unknowns that builds up systemic risk. *Systemic risk is now widely accepted as the fundamental underlying concept for the study of financial instability and possible policy responses*⁸. From the days when systemic risk was narrowly used to refer to bank runs and currency crisis, its definition today has become much more broad based. Systemic risk *per se* is a complex and diffused concept. It can be defined as the probability that a series of correlated defaults among financial institutions, occurring over a short time span, will trigger a withdrawal of liquidity and widespread loss of confidence in the financial system as a whole. Two key elements which underscore the definition of systemic risk are shocks and propagation mechanisms. Shocks can be either idiosyncratic, that essentially effects only a single institution, or systemic which effects the entire financial system. Propagation or the transmission mechanism on the other hand determine how an initial idiosyncratic or systemic shock spreads across the financial system. These shock waves are akin to the geological waves created by an earthquake, in the manner that it spreads either horizontally or vertically. While the horizontal systemic risk refers to the spread of shock in the financial sector alone, the concept of vertical systemic risk is concerned with the spread of an initial shock experienced by the financial sector to other sectors of the economy. Since the occurrence of both shocks and the subsequent propagation are uncertain, a *systemic event* can have disastrous effects. However, prudent financial regulation can play a defining role in countering the ill effects of systemic risk. But prior to initiating regulatory reforms, it is absolutely necessary to develop dependable measures of systemic risk which captures all the linkages and vulnerabilities present in the entire financial system and they should be designed to facilitate monitoring and regulation of the overall level of risk to the system.

Post crisis, numerous studies on systemic risk has been done. An equal number of methods to ascertain systemic risk and the ways to deal with it have also been propounded. While no one method can address all the intricacies that are characteristic to each financial system, they can prove to be an effective primer in formulating a customised methodology suiting a particular financial system. However, most of these methods are targeted more towards the identification of systemically important institutions rather than an assessment of overall systemic risk. They are also based squarely on changes in equity prices. But the challenge in dealing with systemic risk lies not only in developing tools, measures and indicators that can identify if

an individual institution or a group of institutions are likely to experience a shock, but also in developing methodologies that can assess systemic linkages. With regards to indicators for institutional level shocks, a post crisis IMF (2009 a) study found that *while measures of leverage contained information useful for predicting intervention, capital adequacy ratios and liquidity ratios did not. Other indicators, including non-performing loans, return-on-equity and equity prices, also did not seem to be informative about the likelihood that a firm would require government support*.⁹ It is therefore imperative that a wise mix of traditional indicators together with advanced credit risk models should be calibrated for predicting stress in institutions. The other area in the study of systemic risk, that of ascertaining systemic linkages has gained immense prominence currently. This essentially helps in establishing methods that can possibly determine propagation channels and the probable *domino effects*. IMF (2009b) surveys a number of methods to assess inter linkages between financial firms and distinguishes between four approaches. These are (a) The *network approach*, which tracks the transmission of financial stress across the banking system via linkages in the interbank market (*a further note on Financial Networks and Systemic Risk Management is detailed in Box 5.3 in the current chapter*) (b) The *co-risk model*, which uses market data on credit default swaps to assess how the default risk of an institution is affected by the default risk of another institution (c) The *distress dependence matrix*, which allows analysts to study a group of financial institutions and to assess the probability of distress for a pair of institutions, taking into account a set of other institutions and (d) The *default intensity model*, which captures the likelihood of default of a large fraction of financial institutions through linkages. In spite of this, there is presently no universally accepted indicator or quantitative framework that can exclusively measure systemic risk. Although considerable progress has recently been achieved, even the most sophisticated tools so far only account for a certain 'form' of systemic risk, and often rely on narrow definitions of a systemic event. Past experiences of financial fragility, financial booms and financial crisis, suggests that problems rarely appear at the same place in the financial system twice in a row. Part of what turns an initial spark into a fully fledged crisis is that it has not been expected by market participants and regulators. In the light of this, the need is to calibrate a method that can estimate systemic risk by focusing on monitoring traditional indicators of financial soundness, measuring inter linkages between financial institutions and changes in the behaviour of prices of financial assets.

time¹⁰. To each dimension corresponds a source of system-wide financial distress - procyclicality of the financial system in the time dimension and common exposures and inter-linkages in the cross-sectional dimension.

5.43 Both these aspects are sought to be addressed through the slew of policy reforms being put in place internationally. The BCBS proposals include capital buffers that are built up in good times and can be drawn

⁸ What is Systemic Risk Today ? Oliver De Bandt and Philip Hartmann

⁹ Defining and measuring systemic risk-Stefan Gerlach

¹⁰ "Implementing a macroprudential framework: Blending boldness and realism". Claudio Borio, BIS, July 2010

down in periods of stress. Proposals for the introduction of expected loss provisioning aim at basing loan loss provisions on methodologies that reflect expected credit losses in loan portfolios over the life of the portfolio and are expected to address concerns related to the potential procyclicality inherent in current provisioning requirements. Proposals relating to capital incentives for banks using CCPs for derivative products and higher capital requirements for trading and derivative activities and for complex securitisation, OBS and inter-financial sector exposures are aimed at mitigating the risks arising out of interconnectedness between global firms.

Macroprudential policy in India warrants careful calibration

5.44 A Committee on Global Financial Systems (CGFS) survey¹¹ found the use of macroprudential instruments and a macroprudential policy framework more prevalent in emerging economies like India. In fact, in India, macroprudential indicators have been monitored periodically since March 2000. A number of specific macroprudential policy tools including provisioning and risk weights were pre-emptively and proactively used, especially during the last decade. These were discussed in the previous FSR. More recently, several measures have been put in place to tighten prudential norms for housing loans, as discussed in Chapter IV of this Report.

5.45 In India, the use of a macroprudential toolkit has achieved reasonable degree of success in countering the potential adverse impact of asset price fluctuations and high credit growth in some sectors on banks' balance sheets. However, important issues need to be addressed if the effectiveness of such policies is to be sustained. As observed by the aforesaid CGFS report, "*Many open issues remain in the development of a full-fledged macroprudential framework that delivers the promise of more effective stabilisation policy. Some of the issues are empirical, while others relate to operationalisation.*"

Difficulties in identifying a reliable indicator for calibrating countercyclical policy

5.46 Leaning against the cycle, as is required by any macroprudential policy framework, places heavy

demands on analytical abilities to identify the build up of financial risks and more so in EMEs where the quality of financial data may require considerable improvement. The inadequacy of the preferred metric i.e. the deviation of credit to GDP ratio from its long term trend, particularly in EMEs is discussed in paragraph 5.16 of this Chapter. The ultimate diagnosis of macroprudential risks and the design of a macroprudential policy framework will therefore have to rely on an element of judgement and discretion. The framework being proposed internationally is also flexible enough to allow national discretion to suit the country situation in a "comply or explain" framework. There will, however, remain critics, especially in a political economy context, advocating the use of a rule-based approach so as to ensure a predictable and transparent policy framework.

Data gaps complicate assessment of the state of the economy

5.47 Bridging data gaps – to facilitate the identification of risk concentrations / vulnerabilities analysis and /or understanding how contagion from one institution can spread to other institutions - is critical if any macroprudential policy framework is to be successfully calibrated. Multi-pronged efforts are ongoing internationally to identify gaps in availability of data for the identification of systemic linkages and risks. In India too, these data gaps are likely to be significant especially outside of the scheduled commercial banking sector, where the information systems have been organised up to a level and are improving continuously due to adoption of new technology. The gaps in the Indian context will need to be revisited once the international efforts in this direction have crystallised.

Systemic interconnectedness

Inter-linkages in the financial system need to be identified and monitored

5.48 As discussed in paragraph 5.42 of this Chapter, the cross sectional dimension of macroprudential policy emphasises the criticality of inter-linkages in the financial system. As the recent crisis demonstrated, the consequences of an intertwined and highly interconnected financial system mean that the consequences of any disturbance are particularly hard

¹¹ "Macroprudential instruments and frameworks: a stock taking of issues and experiences", CGFS, BIS, May, 2010

to predict. This has underscored the importance of developing strong analytical methods that help better

identify, monitor and address systemic linkages. Network analysis is one such tool¹² (Box 5.3).

Box 5.3: Financial Networks and Systemic Risk Management

When the news of the outbreak of a new strain of influenza virus, *H1N1*, broke in April 2009, the world was gripped with previously unseen fear psychosis. This coupled with certain rumours about the virus, made the resulting illness assume pandemic proportions. By the time when the World Health Organisation officially announced the end of the pandemic in August 2009, *H1N1* had already caused huge economic loss to the world. However, deaths due to the virus were about eighteen thousand, which is approximately only 4 per cent of annual influenza deaths in the world. In a strikingly similar fashion, the news of Lehman Brothers filing for chapter 11 bankruptcy in a New York courtroom in September 2008, spread like wildfire causing banks and other financial institutions to hoard liquidity and stopping them from lending to other banks and institutions suspected to be *infected*. Businesses, that till the evening before partied with each other, suddenly lost faith and banks started to fall like ninepins. The macroeconomic impact of these events were huge, yet in the final reckoning, the direct losses from Lehman's failure seem likely to be relatively modest with net payouts on Lehman's CDS contracts amounted to only around \$5 billion. These similarities can be summarised as such. *An external event strikes. Fear grips the system which, in consequence, seizes. The resulting collateral damage is wide and deep. Yet the triggering event is, with hindsight, found to have been rather modest*¹³. The behavioural pattern of complex adaptive networks was clearly demonstrated in both the cases. The networks are complex because the interconnections involved among the agents are massive and adaptive because while the agents in the networks always wants to be in an optimal position, yet they are mostly confused or are not fully informed.

With this in the background, the world now sees with an altogether different perspective, the importance of interconnectedness that exists between banks and other financial institutions and how the financial linkages can act as a channel for propagation of shocks. Subsequently, a new field of study called Financial Network Analysis has emerged and has gained much prominence. A financial network can be typically defined as a collection of nodes which can be Banks and other Financial Intermediaries and the links in the form of credit and financial relationship that exists between them. These links, which are called *in-degrees* that represents obligations from others and *out-degrees* that represents a financial entity's obligations to others, affects the nodes and the structure of the links affect the performance of the system as a whole. Financial network analysis tries to make use of advancements achieved in the field of pure science as well as various social sciences and apply those tools and mechanism to study patterns in the financial system. In the practical world, an elaborate combination

of claims and obligations that links the balance sheets of various financial intermediaries forms into a financial network. Allen and Gale (2000) have extensively analysed the spread of contagion due to direct inter linkages of balance sheets in the financial system using a simple four bank model. They derive that when the network is complete, with all banks having exposures to each other in such a manner that the amount of interbank deposits held by any bank is evenly spread over all other banks, the impact of a shock is readily attenuated. Every bank takes a small 'hit' and there is no contagion. By contrast, when the network is 'incomplete', with banks only having exposures to a few counterparties, the system is more fragile. The initial impact of a shock is concentrated among neighbouring banks. Once these succumb, the premature liquidation of long-term assets and the associated loss of value bring previously unaffected banks into the front line of contagion.¹⁴ The study of causal chains of network interconnections with nodes taken to be 'agents' with capacity for rule based behaviour or fully fledged autonomous behaviour that represents financial intermediaries and also regulatory authorities, constitutes the new framework of financial network modelling. The contractual obligations between financial intermediaries, intermediaries and end users that determine bilateral flows of payoffs constitute pre-existing network structures while an actual crisis with default of counterparties can trigger further contingent claims such as on derivative obligations and also large losses at default due to collapse in asset markets. Thus, interactions of agents produce system wide feed-back loops. In agent based models, these need not be restricted to pre-specified equations which have to be estimated using past data in econometric or time series approaches. The main drawback of equation oriented analyses is that structure changes from strategic behaviour and tracing of causal links and influences of feedback loops on individual decisions are almost impossible to do. Hence, it is argued that agent-based ICT embedded in fine grained data based driven digital maps of the structural interconnections of financial markets should be developed as the starting point of stress tests and scenario analysis especially in the context of the policy design. The presence of highly connected and contagion causing players typical of a complex system network perspective is to be contrasted with what economists regard to be an equilibrium network. The drivers of network formation in the real world are different from those assumed in economic equilibrium models. In terms of propagation of failure, however, it is not true that financial systems where no node is too interconnected (as in a random network) are necessarily easier to manage in terms of structural coherence and stability. This suggests the need for caution in espousing an ideal network topology for financial networks¹⁵.

¹² IMF, "Assessing the Systemic Implications of Financial Linkages", Global Financial Stability Report, April 2009; ECB, "The Concept of Systemic Risk", Financial Stability Review, December 2009 and "Financial Networks and Financial Stability", Financial Stability Review, June 2010

¹³ Rethinking the Financial Network- Andrew G Haldane, April 2009

¹⁴ See Prasanna Gai and Sujit Kapadia, 'Contagion in Financial Networks'

¹⁵ Sheri Markose, Workshop on Financial Network Analysis, Reserve Bank of India, August 2010

A range of policy levers used to limit inter-connectedness in India

5.49 In India, a mix of policy measures, prescribed well before the crisis seeks to limit interconnectedness. These measures, *inter alia*, include prudential limits on inter-bank liabilities for banks, restricting the overnight un-collateralised funding market only to banks and primary dealers with ceilings on exposures, limits and higher risk weights on investment by banks in subordinated debt of other banks, limits on exposures between banks and NBFCs and mandated CCP arrangements in critical markets.

Systemic importance of participants varies when examined in different dimensions

5.50 An attempt to identify large and interconnected banks in India was made using data in respect of payment and settlement systems for the quarter ended June 2010 and in respect of balance sheet size and interbank liabilities as on June 30, 2010.

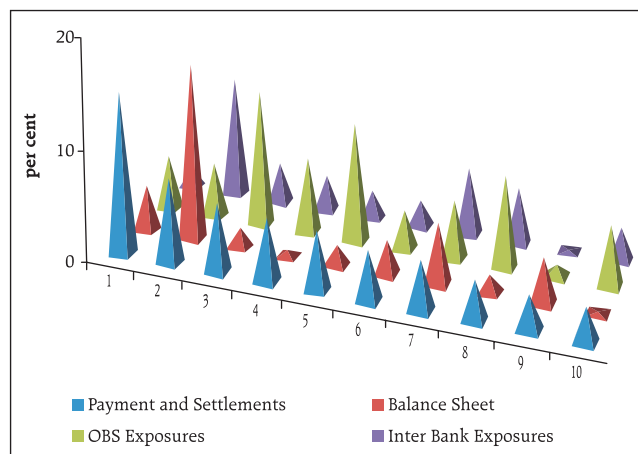
5.51 The analysis indicates that the systemic importance of participants may be very different when examined through different dimensions viz., payment and settlement systems, balance sheet size, OBS exposures and interconnectedness through interbank exposures (Chart 5.1 and Table 5.1).

5.52 The above analysis underscores the importance of taking into consideration different indicators / markets /balance sheet and OBS aspects while drawing conclusions in respect of systemic importance of financial institutions. An approach which subjects financial institutions/banks to more intense supervision based only or largely on size parameters may result in overlooking other institutions which are more interconnected, for example through payment systems or through the inter-bank markets.

REGULATORY ARCHITECTURE

5.53 Efforts to strengthen system-wide oversight and macroprudential policy arrangements are taking place at national as well as the international levels. Legislative changes in various countries are being affected to explicitly task an agency/agencies with the responsibility of macroprudential supervision and management of systemic risk. The significant amendments to the regulatory and oversight

Chart 5.1: Share of Top 10 Payment & Settlement System Participants in Aggregate Balance Sheet, OBS Exposures and Interbank Exposures of Scheduled Commercial Banks



Source: RBI, CCIL

Table 5.1: Ranks of Top 10 Payment & Settlement System Participants in Aggregate Balance Sheet, OBS Exposures and Interbank Exposures of Scheduled Commercial Banks

Payments And Settlements	Balance Sheet Size	OBS Exposure	Inter Bank Exposure
1	6	9	17
2	1	8	2
3	19	1	8
4	40	5	9
5	20	2	13
6	11	12	14
7	3	7	4
8	22	3	5
9	8	17	39
10	51	6	11

Source: RBI, CCIL

architecture have involved, one or more of the following in various jurisdictions,

- Designating the central bank as the systemic regulator with accountability;
- Placing central banks in charge of microprudential regulation, where not already so, in addition to macroprudential regulation, especially with respect to systemically important financial institutions; and
- Setting up financial stability councils/commissions to provide high level focus on financial stability.

FSDC – a macroprudential authority for India

5.54 In India, the Reserve Bank has been implicitly discharging the functions of a systemic regulator. The previous FSR had pointed out the synergies drawn from the fact that the Reserve Bank was the monetary authority, the lender of last resort and the regulator and supervisor of banks, NBFCs and critical financial markets. Post crisis, the Union Budget 2010 has announced the establishment of a high-level Financial Stability and Development Council (FSDC) with a view to strengthen and institutionalise the mechanism for maintaining financial stability. The FSDC is taking shape and it will have one sub-committee to be headed by the Governor of the Reserve Bank. The Reserve Bank's role in it would expectedly be critical.

Legislative reforms – to be driven by policy direction

5.55 The Union Budget proposed the setting up of a separate Financial Sector Legislative Reforms Commission to rewrite and clean up the financial sector laws to bring them in line with the requirements of the sector. The decision is timely and very vital as the current statutory arrangements comprises of laws of varying vintage governing different segments of the financial industry. The statutory arrangement has served the system well by helping maintain an orderly banking system. However, there is a strong case for reviewing all the various legislations and recasting them for a number of reasons including integration of various statutes so as to provide clarity and transparency and building in of provisions which include the lessons from the global financial crisis and the imperatives of financial stability. Any revision to legislations in the banking and financial sector will, however, need to be driven by clear policy direction for the banking and financial industry.

The non-banking financial sector in India – tightening the regulatory norms

5.56 It is now well recognised that, before the crisis, a whole network of bank-like institutions - now called the 'shadow banking system' - grew and flourished outside the regulatory regime of banks. When the systems began to unravel, it was realised that many of these institutions in the shadow banking system posed significant systemic risk.

5.57 In the Indian context, the 'shadow banking system', as it existed in much of the developed world is largely irrelevant. Most of the non-banking financial system is regulated. NBFCs are regulated by the Reserve Bank under the sections of Chapter III B, III C and V of RBI Act, 1934. They are also required to comply with relevant provisions of Companies Act, 1956 (being companies) and SEBI regulations. The Reserve Bank's regulatory perimeter extends to financial entities accepting public deposits and those non-deposit taking financial entities involved in asset financing, providing loans and investments. The regulatory and supervisory architecture is, however, geared towards systemically important non-deposit taking entities (with asset size ₹ 100 crore and above) with the supervisory framework for other non-deposit taking entities being limited.

5.58 Certain categories of entities carrying out NBFI activities are exempted from Reserve Bank regulation by virtue of them being regulated by another regulator viz., HFCs, mutual funds, insurance companies, stock broking companies, merchant banking companies and venture capital funds (VCF), which are regulated by the respective sectoral regulators.

5.59 The above regulatory framework gives rise to two sets of issues which could engender possible regulatory gaps. The first set of issues pertains to a need to plug gaps and tighten regulatory controls for the entities regulated by the Reserve Bank. These are discussed in paragraphs 5.60 to 5.61 of this Chapter. Another set of issues arise in the context of functional activities being unregulated due to the present system of entity regulation. These are discussed in paragraphs 5.62 to 5.66 below.

A calibrated regulatory framework for Reserve Bank regulated entities established

5.60 In case of Reserve Bank regulated entities, a gradually calibrated regulatory framework was created.

This has been discussed in previous FSR. In recent months also, several steps have been taken to strengthen the prudential requirements applicable to NBFCs so as to strengthen the regulatory framework of the sector and to plug regulatory gaps, if any.

NBFCs vis-a-vis banks – a few avenues for regulatory arbitrage remain

5.61 Some concerns nevertheless remain especially in the context of the rapidly expanding NBFC sector. The entry point norms for NBFCs (presently net owned funds of ₹ 2 crore) is low as compared to that of banks (presently ₹ 300 crore), which along with the relatively lighter touch regulation makes setting up of an NBFC a more attractive option. NBFCs are not subject to any restrictions regarding investment in the capital market thereby leading to enhanced market risk; nor do they have any restrictions on setting up of subsidiaries, thereby allowing setting up of possibly opaque structures with concomitant transparency issues. Further, quality of corporate governance and management can give rise to serious concerns. Another issue arises in the context of definition of an NBFC in terms of its "principal business" which makes it possible for an NBFC to conduct some other non-financial activity by deploying funds in non-financial assets, leading to a lack of level playing field vis-a-vis banks. A Working Group is being constituted to look into all this issues comprehensively.

Regulatory gaps permitting surrogate raising of deposits need to be plugged

5.62 NBFCs are exempt from the provisions of Section 67 of the Companies Act, 1956, in terms of which issuance of shares / debentures to more than 49 investors needs to be through public issuance. This means that NBFCs, particularly those not regulated by the Reserve Bank, could issue debt or quasi-debt instruments to a large number of retail/institutional investors on a private placement basis. This would be tantamount to raising public deposits outside the extant regulatory framework.

5.63 Specific concerns in this regard have arisen in the past in the context of private placement of Convertible Preference Shares (CPS) by few NBFCs.

The Reserve Bank is in the process of formulating guidelines in conjunction with the Ministry of Corporate Affairs to plug this regulatory gap.

Prudential regulation of leveraged activities by entities not regulated by the Reserve Bank is warranted

5.64 Certain NBFCs, coming under the purview of other regulators, have been exempted from the regulatory purview of the Reserve Bank subject to certain conditions. For instance, merchant banks have been exempted subject to the condition that they acquire securities only as a part of its merchant banking business; do not carry on any other financial activity referred to in Section 45I(c) of the RBI Act, 1934 and do not accept or hold public deposits. However, this has given rise to instances of certain functional activities of some exempted NBFCs remaining unregulated, viz.,

- Merchant banks also undertake fund based activities such as providing margin financing to clients and undertaking proprietary trading especially in the context of their underwriting business and consequent devolvement on them. They also undertake other investment activities that could, but for the above exemption, require registration with the Reserve Bank.
- Merchant banks, portfolio managers and brokerages also issue structured products like Equity Linked Debentures (ELDs) to their high net worth clients. Being financial market intermediaries, any leverage on the books of these entities needs to be prudentially regulated.

5.65 Appropriate action for addressing the above issues is being contemplated by the Reserve Bank in consultation with SEBI.

5.66 Another regulatory gap which existed in the extant regulations for non-convertible debentures (NCDs) issued by NBFCs (and also corporates) has recently been plugged by mandating that NCDs with a maturity of 90 days and more cannot have call/put options that are exercisable within 90 days from the date of issue¹⁶.

¹⁶ <http://www.rbi.org.in/scripts/NotificationUser.aspx?Id=5743&Mode=0>

Microfinance institutions (MFIs) – recent concerns warrant closer examination

5.67 Of late, a gamut of issues related to the regulation of MFIs in the country have emerged in the wake of the controversy generated by the Ordinance passed in the state of Andhra Pradesh to regulate money lending transactions and ensure transparency of operations. The concerns include, *inter alia*, charging high interest rates, coercive recovery practices and malpractices in lending such as multiple lending, ever-greening of loans and lending beyond the debt sustainability of households. The aforesaid publicity has also affected the operations of the MFIs, especially in the state of Andhra Pradesh. Fresh disbursements have come to a standstill while the recovery rate of the NBFC-MFIs has come down sharply. The impact of non-recovery of MFI loans spilling over to other states and to other channels, including bank lending through SHGs, cannot be ruled out. This needs to be carefully monitored given MFIs have emerged as important agencies fostering greater financial inclusion in the country. The Reserve Bank has set up a Committee to look into the aforesaid issues.

Presence of foreign banks in India – issues and concerns

5.68 An issue where there is vigorous debate internationally relates to the nature of incorporation of foreign banks. The advantages of domestic incorporation of foreign banks i.e. subsidiarisation, include potentially better regulatory control over such banks, clearer separation of ownership from management, a clearer and simpler resolution in the event of bankruptcy and a more effective ring fencing of capital within the country. However, financial stability concerns warrant that, while opting for subsidiarisation, the pitfalls of dominance of the domestic financial system, particularly the banking system, will have to be kept in view. The evidence from other countries suggests that where subsidiaries promoted by foreign banks had a large presence, they tended to acquire a large share at the expense of domestic banks in the boom years. But when the home countries were afflicted, they tended to substantially curtail their operations in or withdraw from, the host country. The Indian experience in this regard has been no exception as the foreign banks were found to have withdrawn

substantially from the credit markets in India during the crisis years with negative advances growth rates in 2009-10 (as discussed in Chapter IV of this Report).

5.69 A gamut of issues arises in this context viz., (i) Should subsidiaries be given full national treatment by virtue of their local incorporation? If not what should be the nature and extent of restrictions? (ii) Should the subsidiary form of presence be mandated for all new entrants or should it be selectively applied based on certain parameters? and (iii) What approach should be adopted towards the existing branches of foreign banks – whether incentives should be provided to them to convert into subsidiaries? All of these issues will require careful consideration.

PAYMENT AND SETTLEMENT SYSTEMS

5.70 The smooth operation and resilience of the payment and settlement infrastructure of a country and of the global financial systems not only contribute to financial stability but are in fact a precondition for it. Financial infrastructure, functioning through interconnectedness in financial systems, may act as contagion channels affecting stability of institutions, markets and the smooth functioning of the financial infrastructure itself¹⁷.

Regulatory architecture

A robust regulatory architecture for payment and settlement systems is in place

5.71 In India, the operations of payment and settlement systems are driven by the objectives of safety; security; soundness (robust); efficiency; accessibility (including the challenge of financial inclusion); and that all payment systems are duly authorised as spelt out in mission statement in "Payment Systems in India Vision 2009-12 (July-June)".

5.72 The Reserve Bank is tasked with the regulatory oversight of the payment and settlement systems in the country. The legal framework for the oversight role of the Reserve Bank is provided by the Payment and Settlement Systems (PSS) Act, 2007 and the Payment and Settlement System Regulations, 2008 framed thereunder. Given the criticality of smoothly functioning financial infrastructure, a Committee of the

¹⁷ "A Framework for Assessing Systemic risk", Miquel Dijkman, World Bank Policy Research Working Paper 5282, April 2010

Board of the Reserve Bank – the Board for Payment and Settlement Systems has been entrusted the responsibility for focused regulation and supervision of payment and settlement systems in the country.

5.73 Since the enactment of the PSS Act, 2007, all payment systems (except stock exchanges and clearing corporations of stock exchanges) operating in the country are required to seek authorisation from the Reserve Bank. An oversight mechanism has since been put in place with focus on offsite surveillance to be supplemented by need based onsite inspection. This is complimented by an effective market intelligence network.

There are, however, some gaps in regulatory perimeter

5.74 While the above regulatory architecture has provided a sound legal basis for the regulation and supervision of payment and settlement systems in the country, some payment systems remain outside the purview of the PSS Act. In terms of Section 34 *ibid* of the PSS Act, 2007, the provisions of the Act do not apply to stock exchanges and clearing corporations set up under stock exchanges (viz., the National Securities Clearing Corporation of India and the Indian Securities Clearing Corporation).

Operational performance of the payment and settlement systems

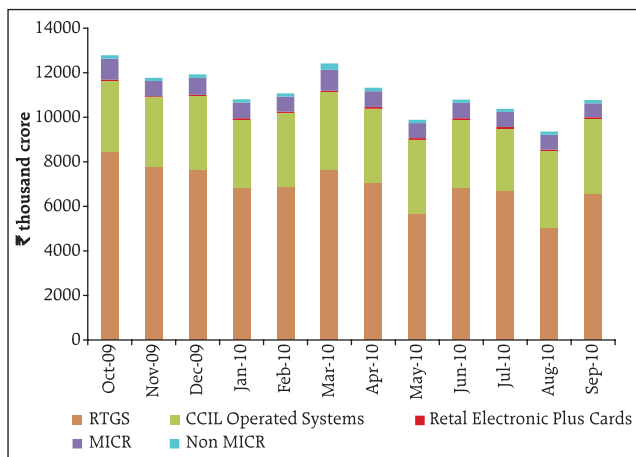
Operational Performance remains robust

5.75 The operational performance of the payment and settlement infrastructure in India continues to be robust. Transaction volumes grew by nearly 2 per cent in the half year ended September 30, 2010, while there was a decline in transaction value by around 12 per cent (Charts 5.2 and 5.3).

Progress in migration to electronic clearing modes continued

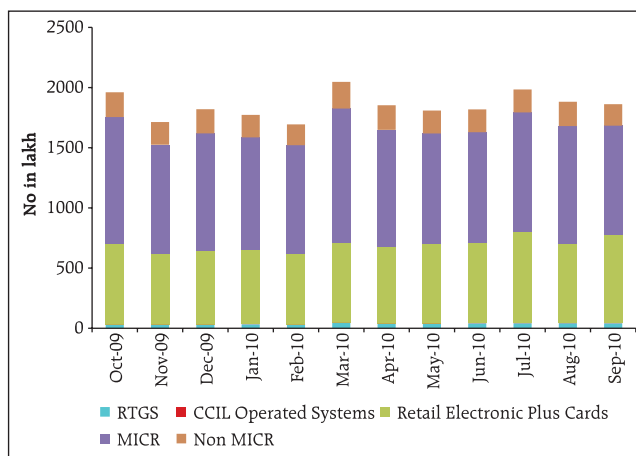
5.76 Critically, the share of the arguably more efficient and secure electronic transactions continued to grow (Chart 5.4). During the half year, a strong impetus to the migration of large value transactions to electronic settlement was provided by the cessation of high value clearing (i.e. same day clearing of local cheques of ₹1.00 lakh and above which was operational in 30 centres) with effect from April 01, 2010.

Chart 5.2: Trends in Value



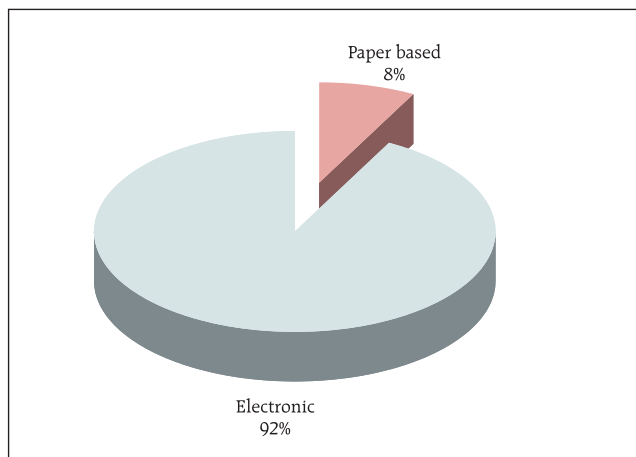
Source: RBI

Chart 5.3: Trends in Volume



Source: RBI

Chart 5.4: Share of Electronic and Paper Based Systems in Payment Transactions: Value



Source: RBI

Continued high volumes in paper clearing and a large network of clearing houses present challenges for robust risk management

5.77 In terms of volume, however, the share of paper based transactions, at 61 per cent during the half year ended September 30, 2010, continued to be large (Chart 5.5). These transactions, though largely of small individual value, nevertheless comprise a significant chunk of total transactions and could potentially be a source of systemic risk as also pose concerns from the customer and depositor protection perspective. However, several measures – mandating electronic clearing for all transactions above ₹10 lakh and measures to place settlement finality on a sounder legal footing - taken in recent years have mitigated this risk to a great extent.

5.78 Given that migration of a larger share of payment transactions to electronic payment modes involve significant challenges related to, *inter alia*, the geographic expanse of the country and the social habits and psyche of the participants, the Reserve Bank has been initiating a number of efforts aimed at enhancing the efficiency of paper based clearing systems. These, *inter alia*, include a phased introduction of the Cheque Truncation System, standardisation of cheque forms being used by banks and enhancement of security features in cheque forms and introduction of speed clearing.

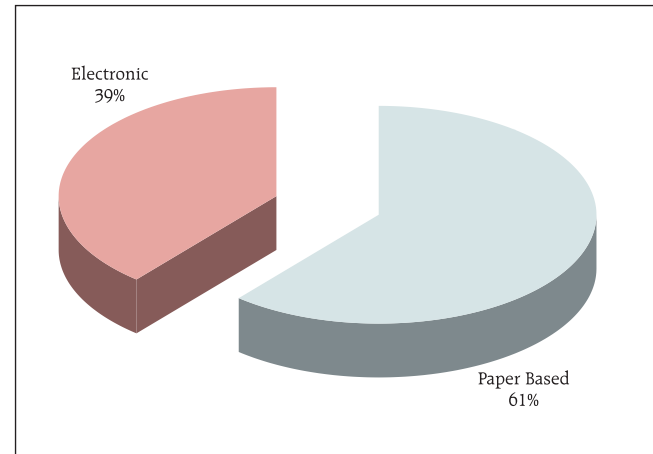
5.79 Paper transactions in the country are cleared and settled through a large network of 1150 clearing houses across the geographic expanse of the country. Certain difficulties involved in managing such large network of clearing houses with a view to ensuring robust risk management standards are sought to be addressed through the prescription of the Uniform Regulations and Rules for Bankers' Clearing Houses, Minimum Standards of operational efficiency for MICR and non-MICR clearing houses and self-assessment at periodic intervals. The clearing houses are subject to oversight.

Operational Risk in payment and settlement systems

Operational risks closely managed and vulnerabilities monitored

5.80 Operational disturbances in the functioning of payment and settlement systems may impede timely

Chart 5.5: Share of Electronic and Paper Based Systems in Payment Transactions: Volume



Source: RBI

processing of financial market transactions and result in liquidity and other difficulties and could be a powerful contagion for financial instability. The Core Principles for Systemically Important Payment Systems also emphasise the operational reliability of critical financial market infrastructure and enunciate that " *The system should ensure a high degree of security and operational reliability and should have contingency arrangements for timely completion of daily processing*".

5.81 Management of operational risks in payment and settlement systems has been engaging the attention of the Reserve Bank for some time. To test the business continuity capabilities of critical payment system applications, it has been conducting periodic disaster recovery drills. Three such drills were successfully conducted since the publication of the previous FSR.

5.82 The majority of critical payment and settlement systems in the country ride on the backbone provided by the Indian Financial Network (INFINET) which is hosted by the Institute for Development and Research in Banking Technology (IDRBT). The INFINET could therefore potentially constitute a single point of failure. The consequent vulnerability is sought to be addressed through building up of adequate redundancies including sourcing the telecommunication network from two service providers.

5.83 The INFINET is designed as a closed user group. This is a critical factor which ensures security of payment and settlement systems from intrusion. However, given the potentially huge impact of any unauthorised intrusion on such systems, periodic vulnerability assessment and penetration testing is an important safeguard to prevent any disruptions to the operations of these systems.

Systemically important payment systems

Large value transactions on Real Time Gross Settlement (RTGS) or deferred net settlements

5.84 Migration of all large value payments to a real time gross settlement system or to settlement on a secured deferred net settlement basis through a CCP and of securities settlement systems to a delivery versus payment mechanism has to a large extent mitigated risks of disruptions to the functioning of the

financial market infrastructure in the country. As mentioned above, these payment systems have been functioning smoothly and with minimal disruptions.

Secured deferred net settlement systems in critical markets ensure economic use of liquidity

5.85 In India, the development of large value payment systems has been guided with a view to enhance both security and efficiency. Settlement of all large value transactions in the RTGS system carries with it the benefits of a secure gross settlement system while the liquidity saving benefits of netting are derived through secure deferred net settlement of critical interbank markets (Table 5.2). At present, in India, the settlement of transactions relating to government securities, market repos, Collateralised Borrowing and Lending Obligation (CBLO) and foreign exchange (spot and forwards) are settled on a guaranteed net settlement basis through CCIL. For the capital market, the major stock exchanges viz., National Stock Exchange (NSE) and Bombay Stock Exchange (BSE) also have their own CCPs (National Securities Clearing Corporation and Indian Securities Clearing Corporation Limited respectively).

Comfortable liquidity position in the RTGS system

5.86 Data regarding usage of intra-day liquidity (IDL) offered by the Reserve Bank (Table 5.3) also indicates that the liquidity position in the payment system is comfortable.

Table 5.2: Netting Efficiency

	G-Sec (Funds) (%)	Forex (%)
2008-09	84.43	94.42
2009-10	82.96	94.07
2010-11 (*)	79.89	95.16

(*) Up to Sep 2010
Source: CCIL

Table 5.3: Usage of Intra-day Liquidity

	IDL(*)
Quarter ended Mar 2010	2.11
Quarter ended Jun 2010	2.67
Quarter ended Sep 2010	3.55

(*) IDL usage as a per cent of total transactions
Source: RBI

Concentration risks in systemically important payment and settlement systems evidenced

5.87 An analysis of transactions in the RTGS and CCIL operated payment systems indicated that the largest participant accounted for 15 per cent of all receipt and payment transactions (Chart 5.6). A significant degree of concentration was also witnessed in the transactions share accounted for by the top five participants, indicating a high degree of interconnectedness in payment and settlement systems.

5.88 This is also demonstrated through the measure of node risk¹⁸ i.e.

$$(\text{Node risk})_x = \frac{(\text{Payment made})_x + (\text{Payments received})_x}{\text{Total Payments made}}$$

The index value for the five most active banks in the system equals approximately 78 per cent with the most active participant accounting for about 30 per cent. The average risk index for the other banks is much smaller suggesting that nearly 80 per cent of the payment activity would be at risk if the five most active banks experience difficulties.

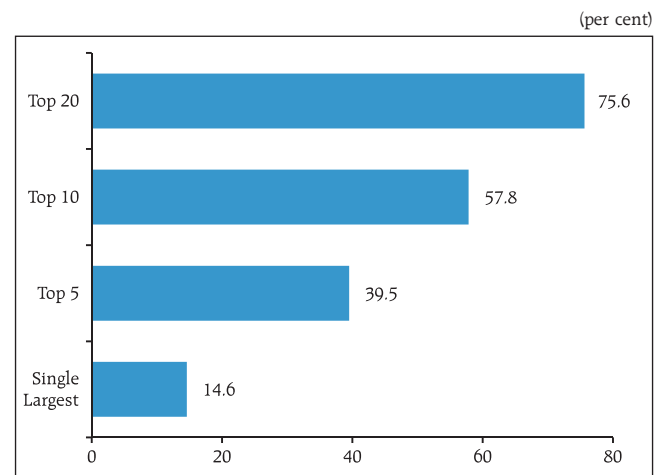
5.89 Similar concentration was observed in CCIL transactions wherein transactions were concentrated in a few foreign banks (five largest participants were all foreign banks). Such concentration of trades is a clear pointer to trends in the underlying market and indicates that despite significant growth in transaction volumes, market participation remains skewed. (Charts: 5.7 – 5.10).

CCP arrangements

CCPs emerging as the preferred mode for settlement globally

5.90 In the wake of the financial crisis, the role of CCPs in contributing to minimising systemic risk has been increasingly realised. By reducing bilateral interconnectedness between major financial institutions, CCPs make an important contribution to limiting contagion risk in the financial system. The presence of CCPs also ensures that trades are

Chart 5.6: Concentration in Payment Systems



Source: RBI, CCIL

Chart 5.7: Share in Outright G-Sec Trades

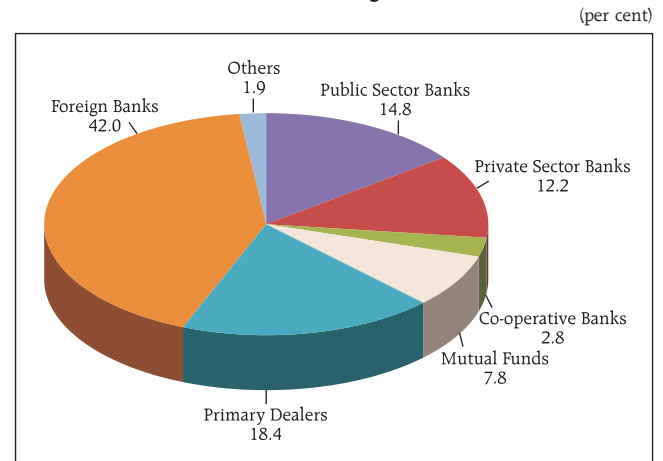
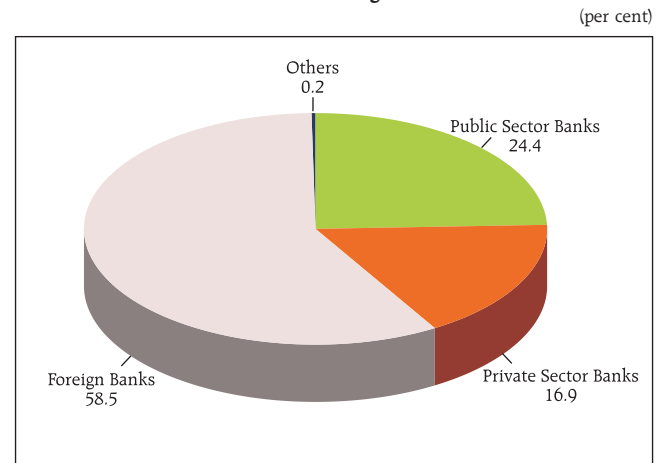


Chart 5.8: Share in Outright Forex Trades



Source: CCIL

¹⁸ Each node represents a participant in a payment and settlement system with the participant making payments to other participants as also being the recipient of payments from other participants.

collateralised. In fact, it typically recalculates new collateral requirements on a daily (or more frequent) basis. This represents a significant improvement from the current position internationally – accordingly to an International Swaps and Derivatives Association (ISDA) survey, only 23 per cent of bilateral trades are collateralised while the position about the remaining 77 per cent is unclear. Finally, a CCP contributes to systemic stability through enhanced transparency, for example, through periodic dissemination of trade related information.

CCPs are not, however, a panacea for all deficiencies/risks

5.91 But, as has also been realised, CCPs are not a panacea for all products and for all markets. In particular, CCP arrangements result in the concentration of counterparty risks in one entity. In case of a sufficiently large CCP, this concentration risk can become systemic and the impact of the failure of such a CCP could be potentially worrying. It is therefore imperative that the risk management standards in a CCP, including the legal framework of its operation, be robust and that the CCP be subject to close oversight. Internationally, the regulatory structure of a CCP needs to be applied on a consistent basis across borders so as to pre-empt scope for regulatory arbitrage and a potential erosion of risk management standards. The Recommendations for Central Counterparties¹⁹, currently being reviewed by the Committee for Payment and Settlement Systems (CPSS) and the International Organisation for Securities Commission (IOSCO), will attempt to address these issues.

CCPs – the preferred settlement mechanism for many large value transactions in India

5.92 In the Indian case, the guaranteed settlements have been the preferred mode of settlement for large value interbank transactions, wherever feasible. In the money and government securities markets, the Reserve Bank facilitated the establishment of the CCIL. CCIL has been brought within the purview of the PSS Act and is subject to close oversight. A few concerns in the CCP arrangements in the country remain.

Chart 5.9: Share in Outright MIFOR Swaps

(per cent)

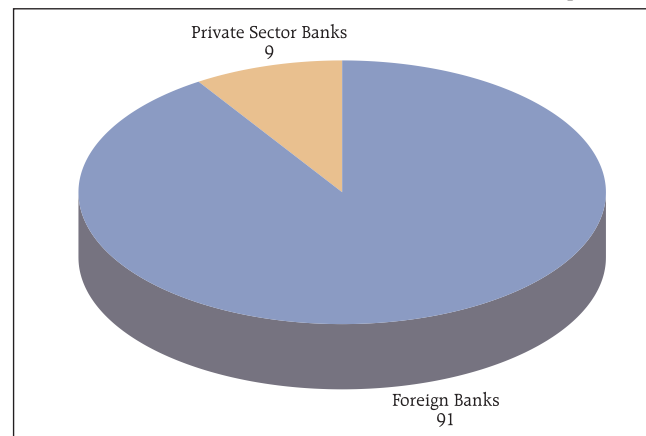
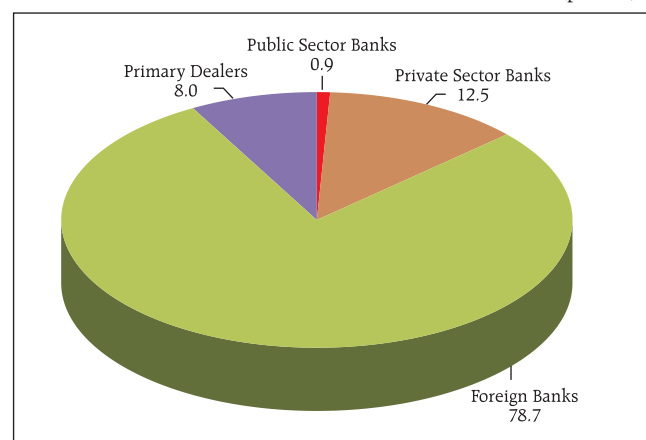


Chart 5.10: Share in Outright MIBOR Swaps

(per cent)



¹⁹ <http://www.bis.org/publ/cpss64.htm>

The design of CCIL as a multi product CCP presents challenges while offering economies of scope and scale

5.93 The design of CCIL, as it has emerged, is that of a single CCP functioning in multiple markets/products. This design brings with itself a number of benefits in terms of economies of scale and scope. It also reduces overall operational costs and access fees for the participants.

5.94 However, the design also implies that the CCIL's network of counterparty exposures widens. In the Indian context, this is especially critical as the same participants operate in different market segments. The model also brings to the fore, challenges in respect of management of the aggregate risk exposure of the CCP and makes it difficult to estimate the impact of tail events. Assessment of the adequacy of the CCP's default fund and the efficacy of its loss absorption system hence becomes difficult. The operational risks associated with such an entity are also commensurately large. A recent report by the BIS²⁰ concluded that "Specific market structures (for CCPs) may create specific risks and amplify interdependencies between systems and markets..... However, market structures may also have risk reduction benefits and mitigate interdependencies."

5.95 From a stability perspective, a multi-product CCP such as CCIL essentially becomes, and will need to be treated as, an entity which is systemically important. As it covers a wide range of markets and participants, the spill over effects of defaults/disturbances in any one market/product is likely to be greater. The oversight mechanism for the institution will need to factor in this aspect. The Reserve Bank, through its supervision over CCIL, attempts to ensure that its risk management standards are robust and that they meet international best practices.

Access of the CCP to central bank liquidity remains an open issue

5.96 An important question which arises in this context is whether CCPs should have access to central bank credit/liquidity facilities. The question, in fact,

remains unresolved even at the international level though a case to the effect is not difficult to build. "... all CCPs should have access to at least a certain amount of central bank facilities. If a CCP finds itself confronted with a temporary liquidity shortage, access to intraday central bank liquidity lines could take the sting out of the tail, thereby reducing the likelihood of unnecessary financial distress²¹." In some jurisdictions, CCPs have been incorporated as 'limited banks' in order to ensure that they have access to central bank facilities.

5.97 Instances for the need for central bank liquidity by CCIL have not been frequent. This has largely been facilitated by a robust risk management framework, on the one hand, and by the fact that Indian financial markets functioned relatively smoothly even during periods of significant disturbances in global markets. Going forward, as Indian markets become more intertwined with global markets, market volatilities may increase CCP liquidity needs beyond margins, especially during situations of stress. Some kind of access of CCIL to central bank facilities may become necessary as CCIL has emerged as an essential market infrastructure in a space characterised by lack of competition. However, no such facility, if provided, can be automatic. CCIL should be able to meet the same (or equivalent) requirements as other counterparties enjoying central bank facilities and the facilities will need to be provided in such a manner that there is no incentive for the dilution of controls.

A few issues of concern need to be addressed.

5.98 Some issues with respect to specific segments also pose some concern in respect of the functioning of CCIL. For example, while considerable risk mitigation has been achieved by CCIL in respect of the settlement of foreign exchange transactions, there remains an element of Herstatt risk associated with such settlements, especially with respect to the US dollar leg of such settlements. In the CBLO segments, large intra day positions are assumed by the five settlement banks which cater to corporate mutual funds and some co-operative banks. This could have systemic implications in the event of failure of any settlement bank. Again, in the CBLO segment,

²⁰ "Market structure developments in the clearing industry: implications for financial stability", November 2010

²¹ Nout Wellink, "Mitigating systemic risk in OTC derivatives markets",

counterparty risk is managed by CCIL through the imposition of a Single Order Limit (SOL). However, the SOL, as a counterparty exposure management tool, may not be as effective as a Net Debit Cap in ensuring that counterparty positions remain within acceptable limits. These issues are being examined.

Several initiatives have placed financial infrastructure on a sounder legal footing

5.99 The enactment of the PSS Act, 2007 ensured compliance with the first Core Principle for Systemically Important Payment Systems which states that "the system should have a well founded legal basis under all relevant jurisdictions". Several initiatives under the aegis of this Act have been taken recently in order to place the financial market infrastructure on a stronger legal footing.

5.100 An important soft spot in Indian payment and settlement systems was that the legal basis for the determination of settlement obligation through netting was provided through bilateral contracts and there was no recognition for multilateral settlements under law. This was addressed through the enactment of the aforesaid Act and recently amplified through issue of a directive on "Settlement and Default Handling Procedures in Multilateral and Deferred Net Settlement Systems"²². The directive seeks to provide certainty and predictability for the method of determining settlement obligations of the participants and the point at which the settlement of obligations is deemed final and irrevocable.

Bankruptcy of participants in systems not covered by the PSS Act could be disruptive

5.101 The PSS Act provides legal certainty for multilateral settlement arrived in payment and settlement systems authorised by the Reserve Bank under the Act. However, similar legal certainty is not in place in case of systems outside the purview of this Act viz., the equity market settlements. Further, banks are the back stop liquidity providers even for these systems. The implications arising from instances of failure to pay or bankruptcy of any participant could potentially be disruptive to the system at large.

OTC markets

Weaknesses in OTC derivative markets need to be addressed to reap the potential benefits of such products

5.102 Setting up of resilient OTC derivatives market infrastructure has been a widely shared key priority for policy makers internationally. OTC derivatives benefit financial markets and the wider economy by improving the pricing of risk, adding to liquidity, and helping market participants manage their respective risks. It is, however, important to address the weaknesses in these markets which had been instrumental in exacerbating the financial crisis. A recent FSB report on OTC derivative markets²³, made a range of recommendations aimed at achieving the objectives set out by the G20 leaders in Pittsburgh in September 2009, "All standardised OTC derivative contracts should be traded on exchanges or electronic trading platforms, where appropriate, and cleared through central counterparties by end-2012 at the latest. OTC derivative contracts should be reported to trade repositories. Non-centrally cleared contracts should be subject to higher capital requirements".

5.103 The key international initiative in respect of the OTC derivative markets has been to integrate these markets into regulated and supervised market infrastructures such as trading platforms, trade repositories and CCPs. There is also a recognition that there will always remain some contracts which cannot be centrally cleared. It thus becomes imperative to enhance the safety of OTC derivatives markets e.g. through increasing transparency and by strengthening the capital requirements for bilaterally cleared trades.

OTC derivative markets in India have developed within a regulated space

5.104 In India, the OTC derivatives markets developed within a regulated framework. A menu of OTC products was introduced in the market in a phased manner commensurate with developments in the broader financial sector. The fundamental requirement for access to the derivative market remains the existence of an underlying commercial transaction or exposure. The method adopted was to improve access to simple,

²² <http://rbi.org.in/scripts/NotificationUser.aspx?Id=6018&Mode=0>

²³ http://www.financialstabilityboard.org/publications/r_101025.pdf

transparent and easy to understand products. Significant success in building up a reporting platform and settlement of derivatives trades, including interest rate derivatives, through a CCP was also achieved. OTC forex and interest rate derivatives already attract higher credit conversion factors than prescribed under the Basel II framework and all exposures are reckoned on a gross basis for capital adequacy purposes.

Many challenges and some concerns remain

5.105 The participation structure in many derivative markets remains skewed with volumes concentrated in a few participants, as discussed in paragraph 5.89 of this Chapter. Volumes in some derivatives markets remain relatively low making it challenging to mandate guaranteed clearing for such products.

5.106 As new products get introduced [the most recent initiative related to the proposed introduction of single name Credit Default Swaps (CDS) products], similarly robust infrastructural arrangements will need to be put in place. But the transition phase will need to be carefully managed. For example, in the early stages of introduction of CDS, it would be difficult to mandate guaranteed settlement, as discussed in Chapter III of this Report.

5.107 A further area for regulatory initiative in the Indian markets would be greater standardisation of OTC products and introduction of central clearing arrangements for a greater number of such products. However, given the vanilla nature of products permitted in the country, standardisation of existing products may not be very difficult.

International standards for Payment and Settlement System

Globally, standards for financial market infrastructure are being reviewed

5.108 Even as efforts are ongoing to strengthen core financial market infrastructures including those related to payment and settlement system infrastructures, the importance of international standards against which the infrastructures in various jurisdictions can benchmark themselves has become critical. Accordingly, a review of the standards for financial market infrastructure viz., 'Core Principles for

Systemically Important Payment Systems', 'Recommendations for Securities Settlement Systems' and 'Recommendations for Central Counterparties', has been undertaken by the CPSS and the IOSCO.

Reserve Bank remains committed to adopting international best practices, as and when finalised

5.109 The Reserve Bank strives to adopt international best practices in various areas including payment and settlements. As reported in the previous FSR, the Committee on Financial Sector Assessment (CFSA) had, *inter alia*, conducted a self assessment of the compliance of the payment and settlement infrastructure in the country with Core Principles for Systemically Important Payment Systems and the recommendations for Securities Settlement Systems and CCPs. The Committee concluded that the country was broadly compliant with the principles/recommendations. The RTGS system in the country was also assessed by a team of experts from the Swiss National Bank at the invitation of the Reserve Bank. This external assessment also observed the system to be largely compliant with the Core Principles. As and when the revised standards are introduced, the same will be considered for incorporation in the Indian framework suitably calibrated to domestic conditions.

DEPOSIT INSURANCE

5.110 The existence of a strong deposit insurance system is an integral part of financial stability arrangements in any economy. The recent financial crisis reemphasised the fact that banks are susceptible to problems of insolvency or illiquidity and reaffirmed the need for deposit insurance in arresting a panic reaction and restoring public confidence in the banking system. The Fifth Report (2007-08) of the Treasury Committee of the House of Commons (titled "Run on the Rock") succinctly concludes that "*All banks and building societies should be covered by a deposit insurance scheme, such that, in cases such as Northern Rock, or an even larger bank, the Government would not be required to step in to protect depositors*".

5.111 Historically too, the emergence of deposit insurance has been motivated by financial stability concerns²⁴. As deposit insurance matured and

²⁴ At the time when deposit insurance was first introduced in the United States in 1933, the main purpose was to "restore public confidence in the nation's banking system" in the wake of large scale bank failures that occurred in the 1920s and 1930s.

progressed along the value chain, consumer protection, and more specifically protection of depositors' interest emerged as the other major public policy objective of the safety net infrastructure. Principle 1 of the Core Principles of Effective Deposit Insurance System²⁵ states "The principal objectives for deposit insurance systems are to contribute to the stability of the financial system and protect depositors".

5.112 The recent financial crisis has exposed the inadequacies and weaknesses in a number of deposit insurance systems around the world and set into motion many efforts to improve the efficacy of such systems. Against the backdrop of the experiences during the crisis, the BCBS and the International Association of Deposit Insurers (IADI) jointly developed the *Core Principles for Effective Deposit Insurance Systems*, which was published in June 2009. IADI has also come out with the draft methodology for assessment of the compliance with these principles.

Deposit insurance system in India– robust but some critical issues remain

5.113 In India, DICGC was set up in 1962 thus making it the second oldest deposit insurance corporation in the world. As outlined in the first FSR, deposit insurance in India is mandatory for all banks (commercial/co-operative/RRBs/Local Area Banks (LABs))²⁶. It covers all deposits except those of foreign governments, Central/State Governments, inter-bank, deposits received abroad and those specifically exempted by DICGC with prior approval of the Reserve Bank.

5.114 Some of the key challenges faced by the deposit insurance system in India include ensuring the adequacy of the deposit insurance fund, reducing the time taken to reimburse depositors, improving the coverage of the deposit insurance system and broadening the mandate of DICGC to include bank resolution. Ensuring compliance with the Core Principles for Effective Deposit Insurance Systems

would remain a challenge pending reforms in the deposit insurance system in India.

Funding of deposit insurance systems: a challenging task

5.115 Adequate funding of deposit insurance systems, typically measured through Fund Ratio / Reserve Ratio (Fund Size to Total Insured Deposits), is a critical issue for ensuring the solvency of the fund and maintaining public confidence. The Reserve Ratio for DICGC at end-March 2010 was relatively low at 0.85 per cent though there is no clear international benchmark in this regard. While no deposit insurance system can be designed to deal with systemic risk of the proportions that was witnessed during the recent financial crisis, it is important that given the contagious nature of bank failures, the deposit insurance funds factor in the possibility of several banks failing simultaneously²⁷. In this context, a stress testing of the Deposit Insurance Fund (DIF) of DICGC was undertaken.

5.116 The stress tests were undertaken based on three scenarios – first, projecting claims on the basis of the average growth in claims settled during the last five years, second, estimating insured deposit of all the weak UCBs if they were to be liquidated and third, if the commercial banks which have been amalgamated (during 2003-2006) with other banks were to be liquidated. The stress tests revealed that under each of these scenarios, the DICGC would be in a position to meet the claims, although under the latter two scenarios, the reserve ratio would drop sharply.

Cross subsidisation raises the issue of moral hazard

5.117 The previous FSR discussed in detail the issue of cross subsidisation of premium in the Indian context. The extent of cross subsidisation can be illustrated by considering that in 2009-10, commercial banks contributed 93 per cent of the premium received by DICGC though no claims from the depositors of these banks were required to be settled. In contrast, the ratio

²⁵ <http://www.bis.org/publ/bcbs156.pdf>.

²⁶ Deposit insurance is not applicable to co-operative banks where the Cooperative Societies Act under which they are registered does not comply with the provisions of Section 2 (gg) of the DICGC Act, 1961. Extension of the scheme to the co-operative banks in the three Union Territories (Chandigarh, Lakshadweep and Dadra and Nagar Haveli) is pending as the concerned State Governments are yet to introduce necessary legislative changes in their respective Cooperative Societies Acts. There are no co-operative banks at present in Lakshadweep and Dadra and Nagar Haveli.

²⁷ "Funding of Deposit Insurance Systems", Usha Thorat, January 2010

of claims settled to premium received in the case of co-operative banks stood at 220 per cent. The cross subsidisation obviously raises the issue of moral hazard. While introduction of risk-based premium is an option, in India, a certain amount of forbearance in this respect has been employed in response to an assessment of trade off between minimising moral hazard and placing additional burden on banks that are already weak and yet serve the very important objective of financial inclusion.

Increasing the deposit insurance premium will need to factor in impact on weak banks

5.118 The deposit insurance regime in India is a low insurance premium regime. With a view to strengthening the DIF, the issue of increasing the deposit insurance premium becomes relevant. In this context, an empirical exercise was undertaken to study the impact on reserve ratio with increase in premium rate from 10 basis points to 30 basis points. The exercise revealed that every 5 paisa increase in premium would lead to an increase in the reserve ratio by 0.06 percentage points. However, any increase in premium would need to factor in the impact of such increase on the weak banks in the system. Further, given the element of cross-subsidisation, the commercial banks would have to bear a disproportionate share of the burden.

Recovery Performance continues to be poor

5.119 The previous FSR had highlighted that the poor recovery performance of DICGC vis-à-vis claim settlements has been a major bottleneck for the regeneration and resilience of the DIF. There has been little improvement in the functioning of the Corporation in this respect with recoveries constituting a mere 14 per cent of claims settled as on March 31, 2010. Legislative disputes challenging the priority of the Corporation in recoveries have hindered the recovery process and build-up of funds. A number of other factors - increasing investment income by expanding the scope of investment options, issues of taxation (taxing the deposit corporation is not a common practice across the world) and a backup line of credit from the central bank (currently the line of credit is restricted to ₹ 5.00 crore) - are important in ensuring the adequacy and resilience of the DIF and increasing the Reserve Ratio and will require careful consideration.

Reducing the time taken to settle claims remains a tough proposition

5.120 For deposit insurance to be credible, it is important that claims are settled at the earliest possible in the wake of a bank failure. In this context, the Fifth Report (2007-08) of the Treasury Committee of the House of Commons (titled "Run on the Rock") has observed that "*There should be requirement in law that all insured deposits should have to be paid within a few days of a bank failing and calling on the deposit protection scheme*".

5.121 As per the DICGC Act, currently, DICGC is required to pay the amount payable in respect of the deposits of each depositor within two months from the date of receipt of the claim list from the liquidator. The liquidator is given three months to prepare the claim lists. While the Corporation is able to disburse the claim amounts within the stipulated period of two months, there are tremendous delays in submission of information by the liquidators. Thus, the average time taken between deregistration of a bank and claim settlement extends to more than a year. Putting in place a robust delivery system to reduce the time taken to effect payments well within the stipulated time, in fact, to even reduce the stipulated time to pay claims, presents a huge challenge given the geographic spread of the country and the unsatisfactory quality of data in respect of particulars of depositors. The process will require leveraging on technology to improve record keeping - the Corporation has already initiated early steps in this direction; and in putting in place an effective system of accountability of liquidators to ensure timely flow of information to the Corporation.

Low levels of coverage could impair effectiveness of the deposit insurance system

5.122 The global financial crisis prompted a number of countries to shift the focus of their coverage from protecting small depositors to stabilising the financial system. As a result, the deposit insurance coverage was increased in many countries, in most cases on a permanent basis. In India, however, no compelling case for increasing the deposit insurance cover was felt given that, under the existing insurance coverage, about 90 per cent of the deposit accounts (number-wise) and about around 55 per cent of total assessable deposits (value-wise) are insured. Nevertheless, the coverage

ratio of deposit insurance in the country remains one of the lowest in terms of per capita income. The need for increasing the cover needs to be examined carefully.

Mandate of the deposit insurance requires to be broadened

5.123 Another critical issue faced by the deposit insurance system in India is to improve its efficacy by upgrading the existing pay box mandate given to DICGC to an extended mandate with powers for least cost resolution, as was observed in the previous FSR. This may, however, require amendment to the DICGC Act, 1961.

Compliance with international norms – some gaps will need to be addressed

5.124 Paragraph 5.112 of this Chapter discussed the draft methodology being finalised by the IADI for the purpose of assessment of compliance with the Core Principles for Effective Deposit Insurance Systems. Before finalisation of the methodology, the IADI conducted its field testing for which DICGC was one of the deposit insurance providers selected.

5.125 The field testing observed that the deposit insurance system in India was compliant or largely compliant in respect of a number of critical issues viz., public policy objectives, mitigation of moral hazard, specification of mandate, empowerment and governance, compulsory membership, coverage, public awareness, legal protection and dealing with parties at fault in a bank failure. However, some important areas, as under, where the functioning of DICGC needed improvement were also identified.

- DICGC has very limited resolution options available: liquidation or merger/amalgamation. A system for early detection of problem banks exists but early intervention is not in the law. DICGC is not informed of problem bank status or activities until the bank's license is revoked.
- DICGC does not receive information necessary to effect prompt reimbursement to insured depositors on a timely basis.
- The deposit insurance fund would be inadequate were a larger bank to fail.

- Foreign branches' deposits are covered by DICGC. There are no reciprocal agreements requiring coordination with deposit insurance systems in other countries.
- While the role and priorities of the DICGC is clearly defined in law, legal obstacles prevent the accurate distribution of recoveries, particularly in the case of urban cooperative banks.

Concluding Remarks

5.126 Fault lines in the regulatory and supervisory architecture permitted the cyclical build up of risks and allowed development of institutions which were "too big to fail". In the aftermath of the crisis, the international community has made substantial progress in putting together a set of reforms which are aimed at increasing the resilience of the global financial system. Going forward, the challenge is going to be in rolling out the reforms agenda in an environment where the global recovery is still fragile, the financial system remains vulnerable, banks in advanced countries continue to face funding risks and sovereign debt of the European countries remains a source of threat to financial stability.

5.127 India weathered the headwinds of the financial crisis with relative equanimity. The financial sector remained resilient, fostered by a well capitalised and well regulated banking system, though the real sector was affected through real, financial and confidence channels. For emerging economies like India, the implementation of the Basel III reforms comes at a time when structural factors are expected to ensure pick up in credit demand. Simultaneously meeting the requirements of additional capital buffers and the sharply growing credit needs of the economy at an affordable cost will be no easy task. However, the comfortable capital adequacy position of the banks in India under Basel II norms means that the Basel III requirements, once fully calibrated, will not unduly stress banks in India.

5.128 Adoption of international norms – in respect of convergence of accounting standards, adoption of compensation principles, reducing reliance on credit rating agencies – will be challenging and will require concerted efforts and suitable calibration to domestic conditions. Concerted efforts to improve the availability of accurate, timely and granular data will also be necessary.

5.129 Interconnectedness between various segments of the financial markets and between financial market participants has emerged as an important element of macroprudential supervision. Closer supervision of institutions which are highly interconnected in payment and settlement systems or through inter-bank liabilities may be warranted.

5.130 Internationally, wide ranging efforts are on going to reduce the moral hazard associated with large and complex financial institutions, improve the resolution capacity of firms and develop effective resolution regimes for cross border financial institutions. In India, domestic banks are unlikely to be classified as global SIFIs. Regardless, policies for domestic SIFIs will need to be strengthened drawing on international policy developments in this respect.

5.131 An assessment of the scope of regulation and its perimeter is critical in view of the role played by the

shadow banking sector during the crisis. It assumes greater criticality as the regulatory requirements for the banking industry are tightened. In India, strengthening the regulatory framework for NBFCs within the regulatory ambit of the Reserve Bank is a continuing effort. The present system of entity regulation could leave some regulatory gaps, which will need to be addressed.

5.132 CCP arrangements have been the preferred settlement mode for critical markets, wherever feasible. The risks arising out of concentration of risks in CCP will need to be carefully managed on an ongoing basis. The payment and settlement system infrastructure functioned smoothly but some soft spots remain. Safety net arrangements are in place but face a number of challenges viz., increasing the mandate of the deposit insurance system, improving funding and reducing the time taken to settle claims.