Rakesh Mohan: Emerging contours of financial regulation – challenges and dynamics

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The world is currently in the midst of the most severe financial and economic crisis since the Great Depression. Although the crisis originated in the sub-prime mortgage market in the United States, it then spread to Europe and later to the rest of the world. The speed of the contagion that spread across the world is perhaps unprecedented. What started off as a relatively limited crisis in the US housing mortgage sector turned successively into a widespread banking crisis in the United States and Europe, the breakdown of both domestic and international financial markets, and then later into a full blown global economic crisis. Almost all governments and central banks of the world have been busy over the last 9-18 months in an effort to contain the effects of the crisis through both fiscal and monetary policy measures, respectively. Just as the global nature of the crisis is unprecedented, so is the global nature of the response, as exemplified by the coordinated action being committed to by the G-20.

Along with the coordinated fiscal and monetary policy actions, a comprehensive re-examination of the financial regulatory and supervisory framework is also underway around the world.

Against this backdrop, this paper attempts to analyse the emerging contours of regulation of financial institutions with an emphasis on the emerging challenges and dynamics. The paper is organised as follows: Section I provides a broad overview of the global developments which contributed to the current global financial crisis. Section II presents the ongoing discussion and debate at the international level in the light of the shortcomings of the extant regulatory framework. Section III analyses proposals for reforming the regulatory framework, while Section IV discusses the difficulties in implementing the regulatory proposals.

I. Evolution of crisis: what went wrong?

What are some of the identifiable sources of market failures that led to the current financial turbulence?

The current ongoing financial crisis is attributed to a variety of factors such as the developments in the sub-prime mortgage sector, excessive leverage, lax financial regulation and supervision, and global macroeconomic imbalances. At a fundamental level, however, the crisis also reflects the effects of long periods of excessively loose monetary policy in the major advanced economies during the early part of this decade.

After the dotcom bubble burst in the US around the turn of the decade, monetary policy in the US and then in other advanced economies was eased relatively aggressively. Policy rates in the US reached one per cent in 2002, and were held around these levels for an extended period, longer than was probably necessary (Taylor, 2009; Yellen, 2009). Excessively loose monetary policy led to excess liquidity and consequent low interest rates worldwide; and the burst of financial innovation during this period amplified and accelerated the consequences of excess liquidity and rapid credit expansion (de Larosière Report, 2009).

What is interesting about this episode is that, despite the persistent accommodative monetary policy, the accompanying strong worldwide macroeconomic growth did not result in measured inflationary pressures in goods and most services. Consequently, central banks in advanced economies, particularly in the US, did not withdraw monetary accommodation for an extended period. The excess liquidity worldwide did show up in rising asset prices, and later in commodity prices, particularly oil. It was only then that measured inflation did start rising and central banks began to tighten monetary policy, though belatedly.

With significant increases in both investment and consumption, along with declining savings,[1] aggregate demand exceeded domestic output in the US for an extended period, leading to persistent and increasing current account deficits, as the domestic savings investment imbalance grew. This large excess demand of the US was supplied by the rest of the world, especially China, which provided goods and services at relatively low cost, leading to corresponding current account surpluses in China and elsewhere. The surpluses generated by the oil exporting countries added to the emerging global imbalances.

Large current account surpluses in China and other EMEs and equivalent deficits in the US and elsewhere are often attributed to the exchange rate policies in China, other EMEs and oil exporters. Given the fact that the US demand exceeded output, it is apparent that the US current deficit would have continued at its elevated levels. In the event of a more flexible exchange rate policy in China, the sources of imports for the US would have been some countries other than China. Although the lack of exchange rate flexibility in the Asian EMEs and oil exporters did contribute to the emergence of global imbalances, it can not fully explain the large and growing current account deficits in the US, particularly since Europe as a whole did not exhibit current account deficits at the same time.

Accommodative monetary policy and the corresponding existence of low interest rates for an extended period encouraged the active search for higher yields by a host of market participants. Thus capital flows to Emerging Market Economies (EMEs) surged in search of higher yields, but could not be absorbed by these economies in the presence of either large current account surpluses or only small deficits, largely ending up as official reserves. These reserves were recycled into US government securities and those of the government sponsored mortgage entities such as Fannie Mae and Freddie Mac. Thus, while accommodative monetary policy kept short term interest rates low, the recycled reserves contributed to the lowering of long term interest rates in the advanced economies, particularly the United States. Such low long term interest rates contributed to the growth of mortgage finance and consequent rising housing prices.

Furthermore, the stable macroeconomic environment – relatively stable growth and low inflation – in the major advanced economies in the run up to the crisis led to sustained under-pricing of risks and hence excessive risk taking and financial innovation. It may be ironic that the perceived success of central banks and increased credibility of monetary policy, giving rise to enhanced expectations with regard to stability in both inflation and interest rates, could have led to the mispricing of risk and hence enhanced risk taking. Easy monetary policy itself may have generated a search for yields that resulted in a dilution of standards in assessing credit risk leading to erosion of sound practices (Mohan, 2007). Lower yields encouraged excessive leverage as banks and financial institutions attempted to maintain their profitability. Lacunae in financial regulation and supervision allowed this excessive leverage in the financial system. Assets were either taken off banks' balance sheets to off-balance sheet vehicles that were effectively unregulated; or financial innovation synthetically reduced the perceived risks on balance sheets.

The sustained rise in asset prices, particularly house prices, on the back of excessively accommodative monetary policy, and lax lending standards coupled with financial innovations, resulted in the high growth in mortgage credit to households, particularly to low credit quality households. Due to the "originate and distribute" model, most of these

[1] The US personal saving rate hovered only slightly above zero from mid-2005 to mid-2007 (Yellen, 2009).

mortgages were securitized. In combination with strong growth in complex credit derivatives and with the use of credit ratings, the mortgages, inherently sub-prime, were bundled into a variety of tranches, including AAA tranches, and sold to a range of financial investors looking for higher yields.

As inflation started creeping up beginning in 2004, the US Federal Reserve did start to withdraw monetary accommodation. Consequently, mortgage payments started rising, while housing prices started to ease. Low/negligible margin financing incentivised default by the sub-prime borrowers. Although the loans were supposedly securitized and sold to the off balance sheet special institutional vehicles (SIVs), the losses were ultimately borne by the banks and financial institutions wiping off a significant fraction of their capital. The uncertainty about the extent of the likely bank losses led to a breakdown of trust among banks. Given the growing financial globalization, banks and financial institutions in other major advanced economies, especially Europe, have also been adversely affected by losses and capital write-offs. Inter-bank money markets nearly froze and this was reflected in very high spreads in money markets and debt markets. There was aggressive search for safety, which has been mirrored in very low yields on Treasury bills and bonds. These developments were significantly accentuated following the failure of Lehman Brothers in September 2008 and there was a complete loss of confidence.

The deep and lingering crisis in global financial markets, the extreme level of risk aversion, the mounting losses of banks and financial institutions, the elevated level of commodity and oil prices (until the third quarter of 2008), and the sharp correction in a range of asset prices, all combined, have suddenly led to the sharp slowdown in growth momentum in the major advanced economies, especially since the Lehman failure. Global growth for 2009, which was seen at a healthy 3.8 per cent in April 2008, is now expected by the IMF to contract by 1.3 per cent.

Thus, the causes for the current crisis reflect the interaction of monetary policy, the choice of exchange rate regime in a number of countries and important changes within the financial system itself (de Larosière Report, 2009; BIS, 2008), along with lax regulation arising from the belief in efficient markets and light touch regulation. To recap, low interest rates, together with increasing and excessive optimism about the future pushed up asset prices, from stock prices to housing prices. Low interest rates and limited volatility prompted the search for yield down the credit quality curve, and underestimation of risks led to creation and purchase of riskier assets. Central banks, focused on measured consumer price inflation and aggregate activity, while neglecting asset price movements, did not perceive the full implications of the growing risks until it was too late (IMF, 2009).

II. Shortcomings in financial regulation and supervision

There have been calls for fundamental rethinking on macro-economic, monetary and financial sector policies to meet the new challenges and realities, which perhaps represent a structural shift in the international financial architecture demanding potentially enhanced degree of coordination among monetary authorities and regulators. A review of the policies relating to financial regulation, in a way, needs to address both the acute policy dilemmas in the short run and a fundamental re-think on broader frameworks of financial and economic policies over the medium-term (Reddy, 2008).

A great deal of very active discussion is now going on internationally on the existing regulatory practices and the future of financial regulation and supervision. It is also perhaps correct to say that there is an emerging consensus on the directions that need to be taken on financial regulation and supervision. Among the most influential reports on this issue are:

- Report of the High Level Group on Financial Supervision in the European Union (Chairman: Jacques de Larosière).

- The structure of Financial Supervision: Approaches and Challenges in a Global Market Place (Group of Thirty; Chairman: Paul Volcker).
- The Fundamental Principles of Financial Regulation (The Geneva Report).
- The Turner Review: A Regulatory Response to the Global Banking Crisis (Financial Services Authority of the UK); and finally,
- The Report of Working Group I of the G-20 on "Enhancing, Sound Regulation and Strengthening Transparency (G-20).

What is common among all these reports is the acknowledgement that regulation and supervision in the advanced economies was clearly too lax in recent times and that there needs to be considerable rethinking leading to much strengthened, and perhaps, intrusive regulation and supervision in the financial sector. There is clear recognition of serious regulatory and supervisory failures.

The root of such re-thinking is really the questioning of the existing intellectual assumptions with respect to the functioning of markets, and the nature of financial risk. To quote the Turner Review:

"At the core of these assumptions has been the theory of efficient and rational markets. Five propositions with implications for regulatory approach have followed:

(i) Market prices are good indicators of rationally evaluated economic value.

(ii) The development of securitized credit, since based on the creation of new and more liquid markets, has improved both allocative efficiency and financial stability.

(iii) The risk characteristics of financial markets can be inferred from mathematical analysis, delivering robust quantitative measures of trading risk.

(iv) Market discipline can be used as an effective tool in constraining harmful risk taking.

(v) Financial innovation can be assumed to be beneficial since market competition would winnow out any innovations which did not deliver value added.

Each of these assumptions is now subject to extensive challenge on both theoretical and empirical grounds, with potential implications for the appropriate design of regulation and for the role of regulatory authorities". (Turner Review, 2009, p.30)

What were the specific developments in the financial system that arose from these broadly accepted intellectual assumptions that led to the ongoing global financial crisis?

Financial and banking crises have a long history, which is as old as the existence of the financial sector itself. What is common among almost all crises is the build up of excessive leverage in the system and the inevitable bursting of the financial bubble that results from such leverage. What is interesting about the current crisis is that this excess leverage occurred over a period when greater consensus had developed through the Basel process on the need for and level of adequate capital required in banking institutions across all major jurisdictions. Furthermore, sophisticated financial risk management capabilities were also believed to have been developed within large financial institutions during this period of unusually high rapid growth in both the magnitude and sophistication of the financial system. With financial deregulation in key jurisdiction like the United States and the U.K., along with most other countries, financial institutions also grew in complexity. Financial conglomerates began to include all financial functions under one roof: banking, insurance, asset management, proprietary trading, investment banking, broking, and the like. The consequence has been inadequate appreciation and assessment of the emerging risks, both within institutions and system wide. What were the factors that led to this emergence of excessive system wide and institutional risk?

Among the notable developments of the last decade has been the unprecedented explosive growth of securitized credit intermediation and associated derivatives (Yellen, 2009). The assumption underlying this development was that this constituted a mechanism that took risk off the balance sheets of banks, placing it with a diversified set of investors, and thereby serving to reduce banking system risks. As late as April 2006, the IMF's Global Financial Stability Report noted that this dispersion would help "mitigate and absorb shocks to the financial system" with the result that "improved resilience may be seen in fewer bank failures and more consistent credit provision" (as quoted in the Turner Report, p.42).

This assumption has already proved to be erroneous, although simple forms of securitisation have existed for a long time. Among the key functions of banks is maturity transformation: they intermediate shorter term liabilities to fund longer term assets in the non-financial sector. Banks are typically highly leveraged and hence trust and confidence is crucial to their functioning and stability. Traditionally, therefore, banks exercised sharp vigilance on the risk elements of their assets, which were typically illiquid, in order to ensure constant rollover of their shorter term funding liabilities. What securitization does is to turn illiquid assets into liquid ones, which in theory then disperse risks from the banks' balance sheets and also reduce their requirements of banking capital. With assets themselves seen as liquid short term instruments, they began to be funded by ultra-short term liabilities, including even overnight repos whose volume increased manifold in recent years. Systemic risk increased because traded instruments are inherently more susceptible to price swings depending on changes in market sentiment. Furthermore, liquidity risks in such markets were also not understood adequately. It was assumed that these liquid markets would always exist, and hence securitized assets were assumed to be inherently less risky than illiquid long term credit assets.

Financial innovation arising from the search for yields compounded this problem as second order derivatives proliferated and their valuation became increasingly dependent on model valuation and credit ratings, rather than observable and transparent market valuation, and hence inherently more opaque. Thus, when problems arose in these markets and prices were not visible, valuation of the assets of banks and the shadow banking system became unobservable. Consequently, trust and confidence evaporated and markets froze.

Compounding these problems was the emergence of the shadow banking system that took off assets from the banks' balance sheets, thereby reducing the latter's capital requirements. The complexity and magnitude of intra-financial sector transactions exploded over this past decade, particularly over the past five years. Thus the financial sector increasingly served itself, exhibiting high profits and growth, while doing relatively little for the non financial sectors of the economy, which the financial sector exists to serve in principle. The debt of financial companies increased to levels exceeding the GDP of leading economies. Thus, in the process of taking risks off balance sheets through securitization, these risks returned to the extended banking system itself and the original rationale for securitization got belied. Rather than reducing systemic risk the system of complex securitisaiton and associated derivatives only served to increase systemic risk. Moreover, it became increasingly difficult to trace where the risk ultimately lay.

The regulatory system was clearly behind the curve in taking account of these developments. The procedures for calculating risk-based capital requirements under-estimated the risks inherent in traded securitized instruments, thereby adding to the incentive for banks to securitise assets into traded instruments, which bore lower risks weights. The trading of these instruments has largely been in OTC markets that exhibit little transparency. As a result of this overall process, banks became effectively under capitalized, and the leverage ratios of the unregulated shadow banking system and investment banks reached unsustainable levels.

With the existence of low interest rates, mispriced low risk perceptions, and inherent incentives to originate lending and distribute securitized instruments, household indebtedness increased to unprecedented levels, particularly for housing. Demand for housing assets rose and hence housing prices. Thus micro behavior led to increased systemic risk that was not adequately appreciated or understood, and hence not monitored by the authorities.

Thus there are immense emerging challenges that confront financial sector regulators as a consequence of the ongoing global financial crisis.

We can look forward to extensive debate at both the academic level and among practitioners. How will we change our view on the efficiency and rationality of markets, particularly financial markets? What will be the effect of such re-examination on financial innovation in the future? What will regulatory authorities do in the meantime while these debates are settled at the intellectual level? Will they overreact and restrict financial growth in the months and years to come? Will this affect global GDP growth as well?

I now turn to the key proposals that are now being made for overhaul of the strong financial regulatory architecture.

III. Reforming the regulatory framework: the future perspective

A great deal of discussion is going on at both the national and international levels on reform of the financial regulatory system to address the various weaknesses that have emerged. There is no question that financial regulation has to be strengthened all round. Hitherto unregulated institutions, markets and instruments will now have to be brought under the regulatory framework, and the framework itself will need to be redesigned to address the emerging needs at both national and international levels. As this new enthusiasm for financial regulation unfolds, it is important that we keep in mind the basic functions of the financial system, and how they can be strengthened so that the needs of the real economy are better served.

We need to ensure that the financial system continues to play a vital role in intermediating savings for providing adequate levels of funding to the real sector, thereby supporting economic growth. It needs to be recognized that financial markets will remain global and interconnected, while financial innovation would continue to be important to foster economic efficiency. Hence, while strengthening financial regulation and supervision, an endeavour has to be made in this process to be careful not to stifle entrepreneurship and financial innovation. But the following question needs to be constantly asked: "Financial innovation towards what objective?" As long as financial innovation is seen to promote price discovery, greater intermediation efficiency, and hence, overall efficiency and growth, it must be encouraged, but with appropriate safeguards to maintain financial stability. Unproductive financial innovation, however, will need to be discouraged. Moreover, the debate on financial innovation and regulation has to be considered in terms of potential and systematic relevance of such innovations besides the capabilities for bringing them effectively under the regulatory umbrella (Mohan, 2007). Therefore, there is a need for reform of the regulatory framework to shield the financial system from potential crises, while identifying measures to mitigate the consequences of any future episodes of financial stress.

The regulatory framework will need to keep pace with the associated risks in a more rapid and effective manner. Large complex financial institutions will continue to operate in multiple jurisdictions in order to meet the needs of their large global clients, and supervision will need to be better coordinated internationally with a robust global resolution framework. In order to avoid regulatory arbitrage, there is a need for greater consistency in the regulation of similar instruments and of institutions performing similar activities, both within and across borders.

In addition, capital markets will require greater emphasis on reducing counterparty risk and on ensuring that their infrastructure allows them to remain a source of funding during periods of stress. The post-crisis period is likely to be characterized by a financial system which functions with lower levels of leverage, reduced funding mismatches (both in terms of maturity and currency), less exposure to counterparty risk, and greater transparency regarding financial instruments. After credit markets recover from the crisis, it will be important to mitigate the inevitable pressure to expand profits through increased risk-taking. A more developed macro-prudential approach will be important in this context.

The type, size, and cross-border exposures of institutions and markets that will emerge from this crisis are likely to be considerably different from before. As banks and financial institutions consolidate, policy makers will have to adapt prudential regulation to varying degrees of size and concentration. Similarly, competition policy will be important in ensuring healthy competition. Financial institutions, markets and instruments will therefore continue to evolve in ways that pose challenges for regulation, notwithstanding the retrenchment that is currently underway. Financial institutions, policymakers, supervisors and regulators will all need to become better equipped to manage the interconnectedness of markets, both domestically and globally, the effects of innovation, and the potential for incentives to become misaligned.

It will be necessary to consider the appropriate timing for changes in the regulatory framework going forward. Recommendations should promote proportionate regulatory reaction when needed, acknowledging the possible limits of the self-regulation approach in some contexts. For example, while ultimately capital buffers for the system should be enhanced during the economic expansion in order to be drawn down as needed in downturns, changes in the current environment may have negative consequences on the real economy. A considered and comprehensive review of the consequences of reforms and harmonization, coordinated across jurisdictions, is necessary to increase the effective transition to a more stable financial system (G-20, 2009).

In short, the overarching mandate of reforms is to make regulatory regimes more effective over the cycle. This is related to many other issues including certain aspects of compensation schemes at financial institutions, of margin requirements and risk management practices focused on Value-at-Risk calculations based on short historical samples, of the capital adequacy framework, and of valuation and loan-loss provisioning practices. In addition, there is a need to redefine the scope of the regulatory framework in order to establish appropriate oversight for the institutions and markets that may be the source of systemic risk. Risk management also needs to be enhanced to better evaluate vulnerabilities arising from low-frequency, system-wide risks, and to better mitigate these risks.

Against this broad background, this section endeavours to focus on defining the priorities for action in so far as financial regulation and supervision are concerned.

Macro prudential orientation

As observed, the build up of micro institutional risks has resulted in the unfolding of massive macro risk, partly through the rise in unsustainable asset prices. As a supplement to sound micro-prudential and market integrity regulation, national financial regulatory frameworks therefore should be reinforced with a macro-prudential oversight that promotes a system-wide approach to financial regulation and supervision and mitigates the build-up of observable excess risks across the system. Prudential regimes should encourage behaviour that supports systemic stability; discourages regulatory arbitrage; and adopts the concept of "systemic" risk, factoring in the effects of leverage and funding. In most jurisdictions, this will require improved coordination mechanisms between various financial authorities, mandates for all financial authorities to take account of financial system stability, and effective tools to address systemic risks. It will also require an effective global table, which is now proposed to be the Financial Stability Board, to bring together national financial authorities to jointly assess systemic risks across the global financial system and coordinate policy responses.

A number of policy institutions, particularly central banks, have enhanced their analysis of systemic risks in recent years – many of the systemic vulnerabilities that caused or enhanced the current turmoil had in fact been identified – but policy mechanisms to effectively translate these analyses into policy action have been lacking. The basic idea here is to multiply the capital adequacy ratios with a systemic risk factor. Better measures of macro-prudential risk are to be found. It is argued that leverage ratios, maturity mismatch and estimates of bank credit expansion should be taken into account. Highly leveraged and fast growing "systemic" institutions would be subject to higher capital requirements than the rest. The idea is that when there is increasing systemic risk, with increasing leverage, maturity mismatch, credit expansion and asset price increases during boom times, banking capital required should increase, and reduce during a downturn when deleveraging takes place (Geneva Report, 2009).

Potential macroprudential tools that could be explored further could include:

- Complementing risk-based capital measures with simpler indicators aimed to measure the build-up of leverage, with enhanced sensitivity to off-balance sheet exposures;
- Capital requirements that adjust over the financial cycle;
- Loan-loss provisioning standards that incorporate all available credit information;
- The use of longer historical samples to assess risk and margin requirements; and
- Greater focus on loan-to-value ratios for mortgages.

Further, the challenge is to continually endeavour to strike a balance between macro and micro prudential regulation.

Regulatory regime

With the emergence of the shadow banking system and other leveraged financial institutions, the scope of regulation and oversight needs to be expanded to include all systemically important institutions, markets and instruments. Accordingly, the perimeter of the financial sector surveillance would have to be extended possibly with differentiated layers to allow institutions to graduate from simple disclosures to higher levels of prudential oversight as their contribution to systemic risks increases. Financial authorities will need enhanced information on all material financial institutions and markets, including private pools of capital. Large complex financial institutions require particularly robust oversight given their size and global reach. Consideration would also need to be given to put in regulatory disincentives for such institutions to not become too big to fail. The regulatory and oversight framework should strive to treat similar institutions and activities consistently, with greater emphasis on functions and activities and less emphasis on legal status.

The main bone of contention here, inter alia, is whether and how to regulate private pools of capital, including hedge funds. There have been differences with regard to the role of these funds in the current global financial crisis. Nevertheless, there is a broad agreement that private pools of capital, including hedge funds, can be a source of risk owing to their combined size in the market, their use of leverage and maturity mismatches, and their connectedness with other parts of the financial system.

The widespread reliance of market participants on credit ratings of market instruments led to inadequate risk analysis by themselves. Thus, credit rating agencies (CRAs) will have to be subject to a regulatory oversight regime. Further, there is a need for modifications to a rating agency's practices and procedures for managing conflicts of interest and for assuring the transparency and quality of the rating process, particularly on the process underlying ratings of complex securitised instruments and derivatives. Given the global scope of some credit rating agencies, the oversight framework should be consistent across jurisdictions with appropriate sharing of information between national authorities responsible for the oversight of credit rating agencies.

Procyclicality

Once conditions in the financial system have recovered, international standards for capital and liquidity buffers will have to be enhanced, and the build-up of capital buffers and provisions in good times should be encouraged so that capital can absorb losses and be drawn down in difficult times such as the current period. It will be necessary to develop a methodology to link the stage in the business cycle to capital requirements in a non-discretionary way and to accounting and prudential standards.

Many questions have also arisen on accounting conventions and procedures that are perceived to have added to procyclicality in the financial system. It should be recognised that the clock should not be turned back on Fair Value Accounting just to address the issue of temporary market illiquidity. What is needed is to make clear the nature of price uncertainty, and to do so in a manner that speaks symmetrically to the potential for mispricing in illiquid markets as much as in booming markets. Enhancements could include better guidance and principles for mark-to-market valuation, information on the variance around the fair value calculations and data on history price.

Prudential oversight

There are three broad areas with regard to prudential oversight that require strengthening: capital adequacy framework, liquidity risk management and infrastructure for OTC derivatives.

Capital adequacy framework

There is a clear need for higher quantity and quality capital resulting in minimum regulatory requirements significantly above existing Basel rules. The emphasis should be on Tier I capital. The transition to future rules should be carefully phased given the importance of maintaining bank lending in the current macroeconomic climate. Capital required against trading book activities should be increased significantly. Published accounts could also include buffers which anticipate potential future losses, through, for instance, the creation of an “Economic Cycle Reserve”. A maximum gross leverage ratio could be introduced as a backstop discipline against excessive growth in absolute balance sheet size. Further, in the context of rapid financial innovation and risk-based regulatory capital requirements, a well constructed non-risk-based capital measure can at least partially address the problem of modelling deficiencies for the advanced approaches and ensure a minimum level of capital is retained in the banking system.

Liquidity risk management

A new element in the future regulatory approach is explicit recognition that liquidity regulation and supervision must be recognised as of equal importance to capital regulation. Individual institutions have demonstrated that their own internal incentive structure is such that liquidity risk may be procyclical due to its links with market and credit risk, and to accelerator factors, such as the mark-to-market effects of asset values and net worth. Structural reliance on short-term wholesale market funding, including *via* securitization, has increased the sensitivity of banks balance sheets and cost of funds to procyclical elements. Therefore, regulatory policies need to reflect appropriately the true price of funding liquidity on financial institutions’ balance sheets – ensuring that the market does not rely excessively on the central bank emergency liquidity support facility. Areas that could be considered include

- Improved funding risk management by strengthening risk management and governance and control
- Introduction of minimum quantitative funding liquidity buffers of high-quality liquidity assets

- Introduction of regulatory charge for institutions that present a higher-than-average liquidity risk and pricing of access to central bank liquidity in order to encourage institutions holding better-quality collateral.

An effective global liquidity framework for managing liquidity in large, cross-border financial institutions should include internationally agreed levels of liquidity buffers, and should encourage an increase in the quality of their composition. Such a framework needs to be comprehensive and take into account liquidity needs for the overall institution.

Infrastructure for OTC derivatives

The explosion of credit derivatives and their offshoots (CDOs etc) has demonstrated the clear need for oversight and transparency in this market. As noted earlier, the market for credit default swaps (CDS) operates on a bilateral, over-the-counter (OTC) basis and has grown to many times the size of the market for the underlying credit instruments. In light of problems involving some large players in this market, attention has focused on the systemic risks posed by CDS. There is a global consensus on the need for a central counter party (CCP) for all the OTC derivative products and accordingly efforts are on, both in the US, EU and elsewhere to implement CCP for CDS.

The development of a CCP facilitates greater market transparency, including the reporting of prices for CDS, trading volumes, and aggregate open interest. The availability of pricing information can improve the fairness, efficiency, and competitiveness of markets — all of which enhance investor protection and facilitate capital formation. The degree of transparency, of course, depends on the extent of participation in the CCP. If needed, some incentives may be provided by national authorities, for example, by taking a higher capital charge for transactions not cleared through central counterparties. In order to foster transparency and to promote the use of CCP and of exchange trading for credit derivatives, public authorities should also encourage the financial industry to standardize contracts and to use a data repository for the remaining non-standardized contracts and promote fair and open access to central counterparty services. In order to mitigate systemic risk resulting from counterparty credit risk, in the short run, it would also be beneficial for there to be a competitive environment for central counterparties without imposing regulatory requirements that unduly fragment the market.

Compensation and risk management

Compensation

Among the issues that have gained prominence as contributory factors to the emergence of the global financial crisis is the explosion of remuneration in the financial sector, particularly in comparison with trends in the rest of the economy. Much more attention is now being given to the development of sound practice principles by the international standard setters. It is important that reforms in this regard be done on an industry-wide basis, so that improved risk management and compensation practices by some systemically important firms are not undermined by the unsound practices of others. Along with the enunciation of such principles and practices, we need to look more carefully at the inherent market incentive structure that has led to the observed compensation practices in the financial sector. Acting on this flawed incentive structure is more likely to be effective than regulatory prescriptions.

Risk management

The fundamental weaknesses in risk management practices revealed in the current crisis were the inability of financial institutions to adequately monitor risk concentrations across products and geographical areas, shortcomings in stress testing and inappropriate practices for managing risks arising from structured products. First and foremost, it remains the responsibility of the private sector to take the lead in strengthening firm-wide risk management frameworks. Both management and the Board of Directors are responsible for putting in place adequate risk management and control systems. Generally, banks are expected to have in place effective internal policies, systems and controls to identify, measure, monitor, manage, control and mitigate their risk concentrations in a timely manner, and under various conditions, including stressed market situations. The supervisory authorities would have to oversee compliance of such best practices for capturing firm-wide risk concentrations arising from both on- and off-balance sheet exposures and securitization activities.

Transparency

In recognition of the serious problems that have arisen, there is a clear need for greater emphasis on greater market transparency about the techniques, data characteristics, and the caveats involved in the valuation of complex financial instruments, improved information regarding OTC derivatives markets and clearing arrangements and reporting of exposures in a format that permits regulators to aggregate and assess risks to the system as a whole. This would help investors to perform some of the due diligence currently outsourced to CRAs, while also helping the latter to do a better job measuring the tail risks.

The fundamental issue here is two fold: standard setters should work with supervisors and regulators to reduce complexity in accounting standards to facilitate better assessment of uncertainty surrounding valuation and achieve consistency of valuation methods and a single set of accounting standards.

Enforcement

Through the expanded Financial Stability Forum, now renamed as Financial Stability Board, the International Monetary Fund and the international standard setters, international standards, including those for macro-prudential regulation, the scope of regulation, capital adequacy and liquidity buffers, should be coordinated to ensure a common and coherent international framework, which national financial authorities should apply in their countries consistent with national circumstances. The financial regulatory and oversight frameworks and their implementation in all G-20 countries should be reviewed periodically, validated internationally and made public.

IV. The challenges ahead

The agenda that is being developed for strengthening of financial sector regulation and supervision is ambitious. Contentious issues will arise both at domestic/national regulatory levels and at the international levels on regulatory cooperation. Whereas the principles that have been outlined for this regulatory overhaul are being increasingly well accepted, many challenges will arise on their modes of implementation, and their practicality.

The first issue is that the various proposals that will lead to increased levels of regulatory capital over the economic cycle, and extension of such capital requirements on bank like institutions that are currently unregulated or lightly regulated, will inevitably lead to lower profitability for equity investors. The bargaining power of banking institutions has become weak in the current circumstances and hence there is little observable protest regarding these proposals at present. As the financial crisis is resolved, and normalcy returns, we can expect the financial industry will do its utmost to resist the requirements for higher capital at that time. It will be a challenge for regulators and governments to resist demands for relaxation of the new capital requirements, both the enhanced minimum levels and the capital buffers proposed in good times. The lobbying power of the financial industry will be restored by that time and hence authorities will need to be prepared for such challenges. Lower systemic profitability levels will also be effective endogenously in limiting compensation levels in the financial sector.

Second, the proposal for provision of contra-cyclical capital will face significant implementation issues. Regulators will need to do significant technical work in the understanding of business cycles so that turning points can be recognised. What would be the triggers for changes in these capital buffers in either direction? Would these changes kick-in in anticipation of business cycle turns or post facto? How formation or rule-based would these changes be so that regulated institutions know in advance themselves what they need to do? An additional issue in this sphere arises from the possibility of economic cycles occurring at different times in different jurisdictions. This would necessitate greater cross border cooperation between home and host regulators in terms of applicable capital requirements for different segments of the same international financial conglomerate. An additional problem for EMEs would be the lack of adequate data for business cycle identification.

Third, there is general agreement on macro prudential regulations and the identification of systemic risks like the build up of asset bubbles. However, considerable technical work will need to be done at both national and international levels on identifying what such risks are, what is systemic and what is not, and what kind of regulatory actions would be effective. In the recent experience, for example, there was ample awareness of the build up of both global financial imbalances, and of the asset price bubble, but there was little agreement on what needed to be done. Even if adequate work is done on the identification of systemic risk, and on the regulatory measures necessary, what will be the enforcement methodology internationally. Within national regulatory systems, issues relating to inter-regulatory cooperation will also arise, who will be in-charge of issuing early warning systems and who will listen to them?

Fourth, there is general agreement on the extension of regulation on all systemically important institutions, markets and instruments. Here again there is an issue of implementation. How do we decide what is systemically important? Considerable debate has ranged around the regulation of hedge funds, which come in all sizes, shapes and forms. Some are large, but not leveraged, others can be both large and leveraged, and yet others can be small and leveraged or otherwise. Whereas it may be that individual hedge funds or other equity pools are not systemically important, they may be so collectively. Furthermore, they could be collectively not important systemically in good times, but become so in times of extensive leveraging. Similar is the story for markets and instruments. Thus the work of national and international regulatory system is cut out in this regard. Excessive regulation could indeed snuff out entrepreneurship if not done carefully.

Fifth, a great deal of debate has emerged around the issue of securitised credit and its offshoots. Very clearly, financial innovations in this area have been unproductive and dysfunctional and will need to be discouraged. Once again, however, securitisation is a time honoured methodology that has done much to lubricate the financial system and helped funding real economy needs at competitive costs. How these instruments are regulated and how “good” financial innovations will be winnowed from the “bad” will be a challenge.

Sixth, as the current global crisis has shown, whereas many of the large complex financial institutions are global in nature, their regulation is national. Considerable discussion is now ongoing on how international regulatory cooperation can be enhanced. Apart from the regulatory problems associated with ongoing institutions, even more difficult are the problems associated with cross border resolution of failing institutions. The discussion on these issues has just began.

Seventh, from the point of view of Emerging Market Economies (EMEs), at the macro level, the volatility in capital flows has led to severe problems in both macro management and financial regulation (CGFS, 2009). These capital flows have been influenced significantly by the extant monetary policy regimes in developed countries and hence their volatility is not necessarily related to economic conditions in the receiving economies. Excess flows, sudden stops and reversals have significant effects on EME financial sectors, the working of their capital markets, and asset prices, and hence their economies as a whole.

Management of this volatility involves action in monetary policy, fiscal management, capital account management, and also financial market regulation. This will remain a challenge since there is little international discussion on this issue.

Finally, in response to the crisis, monetary policy has been loosened substantially in major advanced economies since the second half of 2007. Policy rates have been cut to near zero levels, even lower than that in 2003-04, and the financial systems have been flooded with large liquidity. Abundant liquidity, if not withdrawn quickly, runs the risk of inducing the same excesses and imbalances that were witnessed during 2003-07. Excess liquidity could also take the form of large capital flows to the EMEs and their likely recycling back to the advanced economies. As the global economy starts recovery, a calibrated exit from this unprecedented accommodative monetary policy will have to be ensured to avoid the recurrence of the financial crisis being experienced now.

To summarise, the emergence of the global financial crisis has led to a new wave of thinking on all issues related to both monetary policy and financial regulation. Whereas considerable progress has been achieved on the principles governing this regulatory overhaul, very significant challenges remain on the implementation issues that will arise as we move into a new regime globally.

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