

Deepak Mohanty: Lessons for monetary policy from the global financial crisis – an emerging market perspective

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The global financial crisis has challenged the conventional views on the role of monetary policy. Post-crisis, the weight of arguments tilts towards acceptance of financial stability as an objective of central bank or monetary policy. However, the key challenge is to evolve a consistent framework for implementation. While interest rate can continue as the dominant instrument for implementing monetary policy, supplementing it with other quantity or macro-prudential instruments even in normal times will not only enhance the flexibility of monetary policy to attain multiple objectives but could also obviate the risk of hitting the zero lower bound.

I. Introduction

I thank the Bank of Israel for this opportunity to present my views before this distinguished gathering. The past three years have been unprecedented in the history of the world economy. The crisis though not unique in terms of its nature has certainly been more global and intense in terms of its impact. The expanse of the crisis has tested all the limits of conventional and unconventional policy options available to policymakers around the world. In fact, the speed and intensity with which the US subprime crisis turned into a global financial crisis and then into a global economic crisis has led to a whole new debate on the dominant tenets in macroeconomics.

The crisis has certainly questioned the efficacy of the existing institutional framework and available policy instruments at the national as well as international levels in ensuring global financial stability. It has raised skepticism about the functioning of financial markets and institutions, in particular their capacity to price, allocate and manage risk efficiently. It exposed weaknesses in both private sector risk management and inadequacies in the public sector's oversight of the financial system. The lessons, though are still being distilled, are relevant not only to advanced economies but also to emerging market economies (EMEs).

Against this backdrop, I will reflect on the following set of questions. How was the recent crisis different from the past crises in terms of its cause and impact? What were the differences in the nature of policy response in the advanced economies and EMEs? How was India impacted and what were its policy responses? I will conclude by highlighting six key lessons from the crisis which have implications for the conduct of monetary policy.

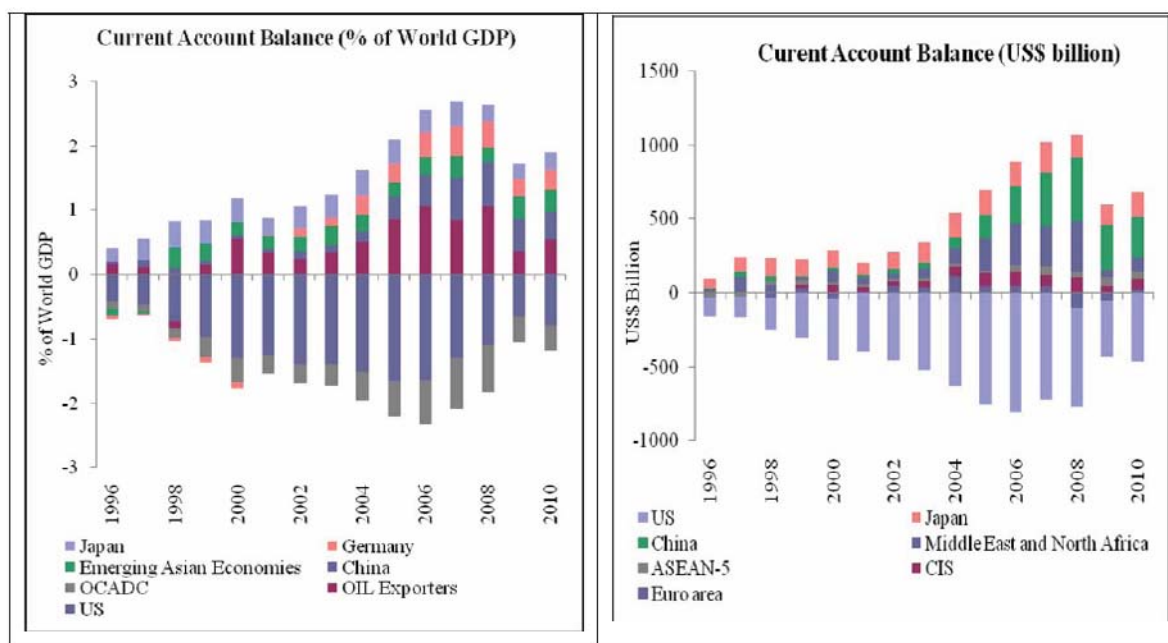
II. Genesis of the crisis

It has now become clear that the crisis was not an outcome of any single cause rather the result of the complex interaction between a host of macroeconomic and microeconomic factors. From a macroeconomic perspective, the crisis has been viewed as being caused by the persistence of global imbalances, excessively accommodative monetary policy pursued in major advanced economies and lack of recognition of asset prices in policy formulation. The microeconomic causes highlighted in the literature are the excessive credit growth and associated leverages, the lowering of credit standards, rapid financial innovations without adequate regulation, inadequate corporate governance, inappropriate incentive structure in the financial sector and overall lax oversight of the financial system.

Global imbalances

It is argued that while the subprime problem was the trigger, the root cause of the crisis lies in the persistence of the global imbalances (BIS, 2009). Large current account deficits in the advanced countries, especially the US, mirrored by large current account surpluses in EMEs, especially China, implied that excess saving flowed uphill from developing countries to developed countries (Chart 1). This “saving glut” (Bernanke, 2005) was considered as one of the factors leading to the crisis. The causation, however, is not very clear: whether it is excess saving in China or excess consumption in the US that contributed to the crisis (Mohanty, 2010).

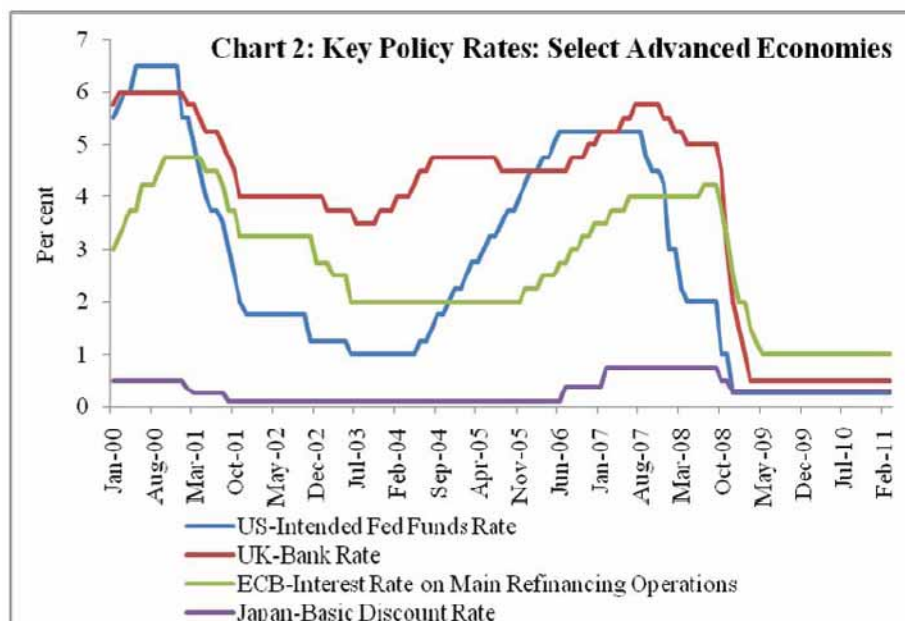
Chart 1: Global Imbalances



At the same time, it is argued that large accumulation of reserves by the EMEs, led by China, as self insurance against sudden reversal of capital flows, caused misalignment of exchange rates. This prevented the global imbalances from adjusting in an orderly manner – with the burden of adjustment falling disproportionately on countries with flexible exchange rates. While there is merit in this argument, it is not clear whether movement in exchange rates by itself could have prevented global imbalances without an adjustment in aggregate demand – lower consumption in the US and higher consumption in China.

Monetary policy

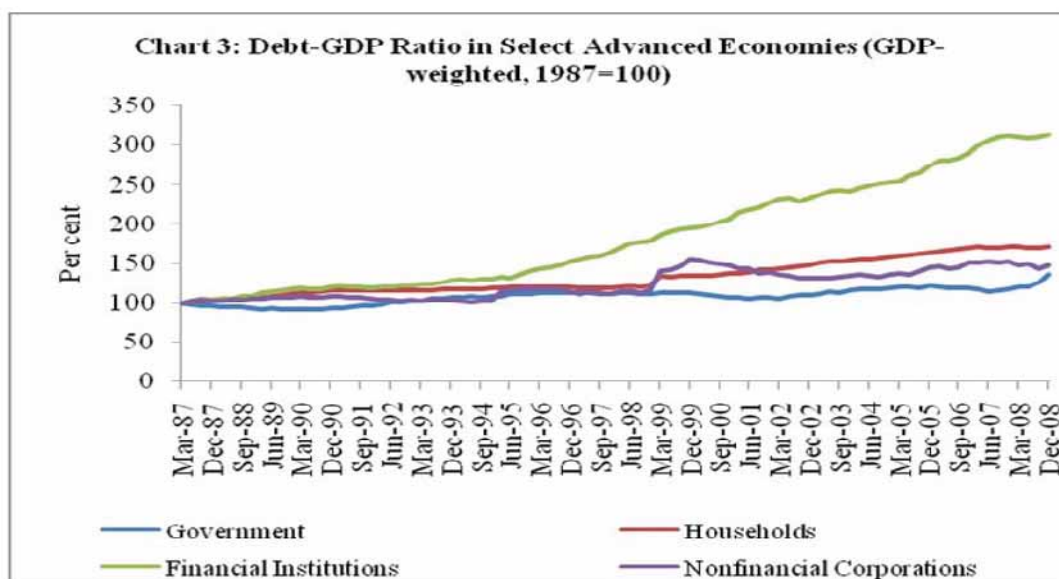
In a number of advanced countries, policy rates remained very low (i.e., below what is considered as neutral rates) for a sustained period which resulted in mispricing of risks and hence contributed to the crisis (Chart 2).



Notwithstanding the arguments on both the sides, the crisis has shown that monetary policies in advanced countries do have spillover effect on EMEs. For instance, persistence of low interest rates in advanced economies, by increasing the interest rate differential could push excessive capital flows to EMEs in search of higher returns, thus exposing these economies to the risk of reversal unrelated to their fundamentals. Excessive inflows could accentuate asset prices and put upward pressure on exchange rate. Given the fact that most of EMEs are linked with advanced economies more than ever before, they could not remain insulated from the impact of crisis originating elsewhere.

Excess leverage

Apart from perpetuating global imbalances, it is argued that the easy monetary policy pursued in advanced economies encouraged excessive leveraging on the part of investors as well as banks and financial institutions. The sharp rise in the leverage of financial institutions in the first decade of this century has been particularly striking (Chart 3).



Source: GFSR, April 2009, IMF.

Search for yields

The low interest rates coupled with excess market liquidity led to the search for yields, which in turn promoted rapid financial innovations in terms of complex derivatives and structured finance products. Consequently, the financial system got enlarged with the growth in off-balance sheet activities, and the shadow banking remained beyond the purview of regulation.

During the golden years, financial economists believed that free-market economies could never go astray which is belied by the crisis (Krugman, 2009). The financial system, however, remained vulnerable to the risks of reversal in easy monetary policy on the one hand and disorderly unwinding of global imbalances on the other. It is argued that the “great moderation” carried the seeds of its own destruction. This stability bred complacency, excessive risk taking and, ultimately, instability (Minsky, 2008). Furthermore, multilateral institutions like the IMF which were charged with the responsibility of surveillance, failed in diagnosing the vulnerabilities both at the global level and at the level of systemically important advanced economies (Reddy, 2009).

III. Impact and policy response

Advanced economies

The crisis manifested itself first in the form of tightening of liquidity in inter-bank markets in advanced economies as banks became reluctant to lend to each other because of the fear of counterparty risks. This led to abnormal level of spreads, shortening of maturities, and contraction of some market segments. As a result, banks and other financial institutions experienced erosion in their access to funding and capital. The tightening of credit conditions coupled with extreme risk aversion and deleveraging by banks and financial institutions led to a sharp slowdown in private sector credit growth.

Equity prices also plunged in the face of heightened uncertainties. The falling equity prices coupled with the deteriorating macroeconomic conditions affected profitability of banks and financial institutions. Consequently, the liquidity problem transformed into a solvency problem leading to large scale bank failures in the US and other advanced economies in Europe. The attendant wealth loss on account of collapsing asset prices further aggravated the problem in the real sector. The real GDP growth in advanced economies decelerated from 2.7 per cent in 2007 to 0.2 per cent in 2008 and subsequently turned negative (–3.4 per cent) in 2009.

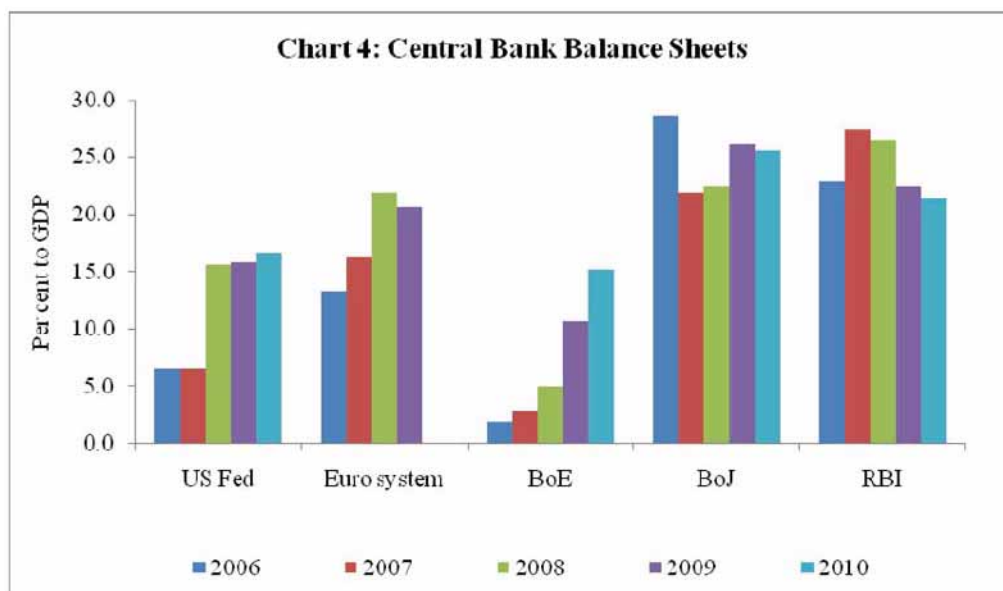
Transmission to EMEs

Initially, it was widely hypothesized that EMEs would remain insulated from global financial meltdown on the back of the buffer in terms of substantial foreign exchange reserves, improved policy frameworks and generally robust banking sector and corporate balance sheets. However, as the crisis intensified further with the failure of Lehman Brothers in September 2008 and resulted in heightened risk aversion and global deleveraging, the EMEs were affected.

Policy response

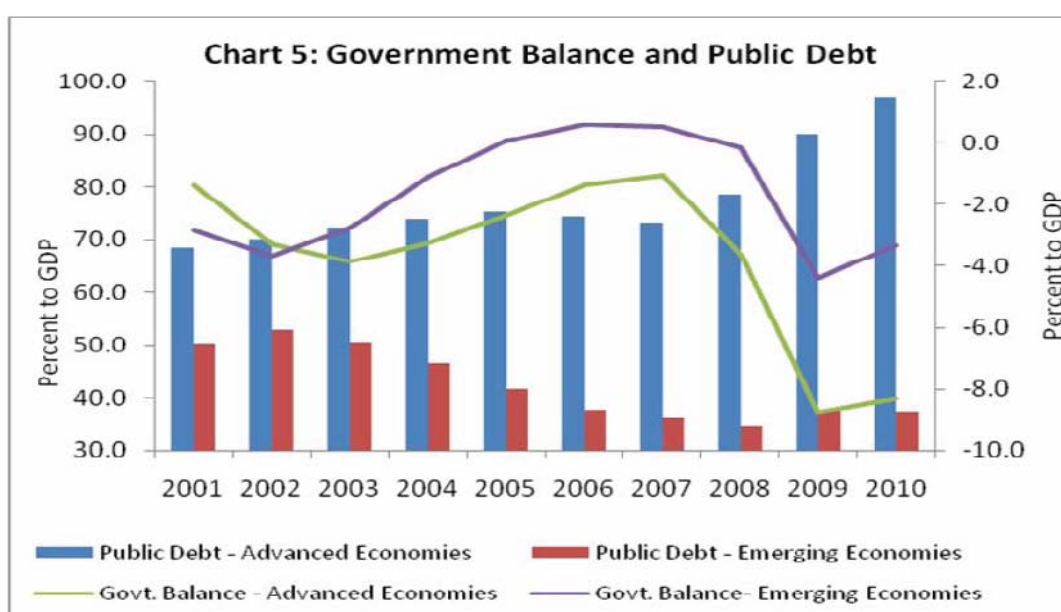
The international transmission of liquidity shocks was fast and unprecedented. While falling asset prices and uncertainty about valuation of the traded instruments affected market liquidity, failure of leading global financial institutions and the deleveraging process tightened the market for funding liquidity. Given the growing risk of illiquidity cascading into solvency problems, the crisis evoked unprecedented policy response, both nationally and internationally. Monetary authorities in the advanced economies were the first to resort to aggressive monetary easing first by reducing policy rates and then by using their balance sheets in unconventional ways to augment liquidity. With the financial crisis spreading to the real sector and raising concerns of economic recession, credit and quantitative easing acquired policy priority in most central banks.

Central banks in advanced countries expanded the pool of securities as well as the number of counter-parties eligible for their central banking operations as well as extended the maturity of those liquidity providing operations. Implementation of such unconventional measures led to sharp expansion in the size and composition of their balance sheets (Chart 4).



Source: Respective Central Bank websites.

The large scale economic downturn accompanying the financial crisis also led to activation of counter-cyclical fiscal policy of unprecedented magnitude. The fiscal measures focused on improving the balance sheet of the financial and corporate sectors as reflected in large scale bailouts in the US and other advanced economies. Reflecting such fiscal stimulus measures, advanced economies witnessed significant deterioration in their fiscal position as reflected in high public debt to GDP ratios (Chart 5).



Source: IMF WEO, October 2010.

The contagion from the global financial crisis also warranted swift monetary and fiscal policy responses in EMEs with a view to ensuring orderly functioning of markets, preserving financial stability, and moderating its adverse effects on growth. They relied first on liquidity augmenting measures – forex liquidity followed by domestic liquidity – and used instruments such as currency swaps and cash reserve ratio before activating policy rates cuts, *albeit*, from a much higher level. In the process, their policy responses became more synchronised with global efforts.

Most emerging market central banks conducted outright sales of foreign exchange reserves to help meet the local market's demand for foreign currency funding and to relieve the pressure on the exchange rate. Central banks in countries like Brazil, Korea, Mexico and Singapore had dollar swap arrangements with the Federal Reserve. However, it may be noted that although EMEs undertook several liquidity-easing and foreign exchange measures, their use of credit easing and quantitative easing was more limited (Table 1).

Table 1: Select Unconventional Measures by EME Central Banks		
Type	Country	Measure
1	2	3
I. Domestic Liquidity Easing		
1. Direct money market instruments	China, Hungary, Nigeria	Reduction in reserve requirements
	Philippines	Expansion in the eligible collateral for standing repo facility to include foreign currency-denominated sovereign debt securities.
2. Systemic domestic liquidity arrangements	Israel	Central bank's announcement to transact OMOs with government debt of different types and maturities.
	Chile	Broadening the list of eligible collateral for monetary operations to include commercial papers.
II. Foreign Exchange Easing		
1. Foreign Exchange Liquidity Injection	Brazil	Central bank's announcement to sell 1-month dollar liquidity lines.
	Philippines	Central bank's approval to open dollar repo facility.
	Turkey	Introduction of daily dollar selling auctions.
	Indonesia	Reduction in the foreign exchange reserve requirement for commercial banks.
	Serbia	Reduction in the required reserves against foreign assets.
2. Cross-Central Bank Currency Swap Arrangements	Brazil	Temporary reciprocal swap lines with the Federal Reserve, Banco Central do Brasil, Banco de Mexico, Bank of Korea and the Monetary Authority of Singapore.
	Mexico	
	Korea	
	Singapore	
III. Credit and Quantitative Easing		
	Korea	Announcement of central bank financing (up to a limit) to a bond fund to purchase commercial papers.
	Israel	Central bank announcement to purchase government bonds.
Source: Report on Currency and Finance 2008-09, RBI [which is adapted from Ishi et al. (2009)].		

While both developed economies and EMEs resorted to conventional and unconventional monetary measures, there were certain differences in terms of their timing, types and magnitudes. First, while in the advanced economies the switchover was from conventional monetary tools to unconventional measures due to policy rates approaching zero, in many EMEs, unconventional foreign exchange easing and domestic liquidity augmenting measures preceded the conventional measures of policy rate cuts. Second, while central banks in

EMEs relied mostly on direct instruments such as reserve requirements to ease domestic liquidity, central banks in advanced countries resorted to various liquidity providing operations through relaxation of counterparties, collaterals and maturity. Third, central banks in advanced countries extensively used credit and quantitative easing measures which led to large expansion of their balance sheets. Fourth, while in advanced economies fiscal support aimed at rescuing the financial sector from the crisis situation, in EMEs they were generally meant to address the deficiency in aggregate demand.

Indian experience

Until the emergence of the global crisis, the Indian economy was passing through a phase of high growth driven by domestic demand – growing domestic investment financed mostly by domestic savings and sustained consumption demand. Inflation was also low and stable. Sequential financial sector reforms, rule-based fiscal policy and forward looking monetary policy together contributed to the improved macroeconomic performance.

India, initially remained somewhat insulated to the global developments, but eventually was impacted significantly through all the channels – financial, real and more importantly, the confidence channel (Subbarao, 2009). This could be attributed to the global nature of the current crisis on the one hand and accelerated trade and financial integration of the Indian economy with the world since the 1990s on the other. Consequently, there has been a shift in the degree of synchronisation of the Indian trade and business cycles with the global cycles, which along with increased financial integration in the recent period indicate that India cannot remain immune to global trends. Global economic developments now have a greater influence on the domestic economy (Mohanty, 2009).

The impact was first visible on India's financial markets. Equity, money, forex and credit markets came under pressure from a number of directions. Subsequently, under the impact of external demand shocks, the Indian economy witnessed a moderation in growth, especially during the second half of 2008–09 and registered 6.8 per cent for the full year, in comparison with the robust growth performance in the preceding five years: 8.9 per cent per annum (Table 2).

Table 2: Behaviour of Select Macroeconomic Indicators in India

	2003-04 to 2007-08 (average)	2008-09	2009-10	(Per cent) 2000-01 to 2009-10 (average)
Real GDP growth	8.9	6.8	8.0	7.3
Merchandise Exports growth	25.4	13.7	-3.6	17.7
Merchandise Imports growth	32.7	20.8	-5.6	20.2
Broad Money growth	17.7	19.3	16.8	17.0
Non-food Credit growth	26.7	17.8	17.1	22.4
Net Capital Flows (% GDP)	4.6	0.6	3.9	3.4
Centre's Fiscal Deficit (% of GDP)	3.6	6.0	6.4	4.8
Domestic Debt (% of GDP)	58.3	56.6	53.7	57.0
BSE Sensex (End-March)	15,644*	9,709	17,528	-
Overnight Call Rate	5.6	7.1	3.2	6.1
10-year G-Sec Yield	7.0	7.5	7.2	7.5
End-period Exchange Rate (Rs./US\$)	43.1	50.9	45.1	45.4
36-Currency REER (% change)	1.0	-13.6	13.3	0.4
WPI Inflation Rate (average)	5.3	8.4	3.8	5.3

*: Pertains to 2007-08.

In order to limit the adverse impact of the contagion on the Indian financial markets and the broader economy, the Reserve Bank, like most other central banks, took a number of conventional and unconventional measures. These included augmenting domestic and foreign exchange liquidity and a sharp reduction in the policy rates. The Reserve Bank used multiple instruments such as the liquidity adjustment facility (LAF), open market operations (OMO), cash reserve ratio (CRR) and securities under the market stabilization scheme (MSS)¹ to augment the liquidity in the system. In a span of seven months between October 2008 and April 2009, there was unprecedented policy activism. For example: (i) the repo rate was reduced by 425 basis points to 4.75 per cent, (ii) the reverse repo rate was reduced by 275 basis points to 3.25 per cent, (iii) the CRR was reduced by a cumulative 400 basis points to 5.0 per cent, and (iv) reduction in statutory liquidity ratio (SLR) by 1 percentage point of banks' net demand and time liabilities (NDTL) to 24 per cent; (v) other liquidity provisions included special refinance facility for all scheduled commercial banks to the extent 1 per cent of their NDTL, term repo facility under LAF to enable banks to ease the liquidity stress faced by mutual funds, NBFCs and housing finance companies and buyback of MSS securities. The cumulative amount of primary liquidity potentially made available through all these measures to the financial system was over Rs. 5.6 trillion (or over 10 per cent of GDP). These measures were effective in ensuring speedy restoration of orderly conditions in the financial markets over a short time span. Despite these measures, however, the balance sheet of the Reserve Bank did not expand much, unlike in other advanced economies (Chart 4), as these operations were conducted mainly with banks as the counterparties and government securities as collaterals.

By synchronising the liquidity management operations with those of exchange rate management and non-disruptive internal debt management operations, the Reserve Bank ensured that appropriate liquidity was maintained in the system, consistent with the objective of price and financial stability. These measures were supported by fiscal stimulus packages during 2008–09 in the form of tax cuts, investment in infrastructure and increased expenditure on government consumption. This raised the fiscal deficit of the Central Government by about 3.5 per cent of GDP to 6.0 per cent in 2008–09 (Table 2). It is, however, important to note that the entire fiscal stimulus in India was aimed at addressing the deficiency in aggregate demand rather than extending support to the financial sector as in the advanced countries. The expansionary fiscal stance continued during 2009–10 to support aggregate demand.

Subsequently, with further consolidation of growth and inflation emerging as a major concern, India began its exit from accommodative monetary policy pursued during the crisis beginning October 2009. To begin with all special liquidity measures were withdrawn which was followed by hikes in policy rates – LAF repo and reverse repo rates have been raised by 200 basis points and 250 basis points, respectively. The CRR has also been raised by 100 basis points to 6.0 per cent now. The process of fiscal consolidation resumed in 2010–11 is expected to be further strengthened in 2011–12. Thus, while the magnitude of the crisis was global in nature, the policy responses in India were adapted to domestic growth outlook, inflation conditions and financial stability considerations.

Key differences in policy response: India vis-à-vis the advanced countries

There were, however, some key differences between the actions taken by the Reserve Bank of India and the central banks in many advanced countries:

¹ Market Stabilisation Scheme (MSS) securities are short-term government papers earlier issued for sterilisation purpose and remained impounded with the RBI. Redemption and buyback of these securities during the crisis injected rupee liquidity.

- In the process of liquidity injection, the counter-parties were banks unlike non-banks in case of advanced economies. Even liquidity measures for mutual funds, non-banking financial companies (NBFCs) and housing finance companies were largely channeled through the banks.
- There was no compromise on collateral standards for injecting liquidity. Unlike the mortgage securities and commercial papers in the advanced economies, the range of collaterals was not expanded beyond government securities.
- Despite large liquidity injection, the Reserve Bank's balance sheet did not show unusual increase because of release of earlier sterilised liquidity.
- Availability and flexible use of multiple instruments facilitated better sequencing of monetary and liquidity measures.
- The use of pro-cyclical provisioning norms and counter-cyclical regulations ahead of the global crisis helped safeguard financial stability.
- Fiscal stimulus was geared to address deficiency in aggregate demand rather than supporting the financial sector as was the case in advanced economies.

IV. Lessons from the crisis

The crisis showed that irrespective of the degree of globalisation of a country and the soundness of its domestic policies, it cannot remain isolated due to the inter-linkages in the global economy. The crisis has tested the mettle of central banks. In the process, they reinvented themselves towards the unconventional and unprecedented role – shifting from the role as lender of last resort to lender of first resort. While it might yet be early to draw precise lessons, I will highlight six broad lessons reflecting on the ongoing debate, especially from an EME perspective.

Lesson 1. Monetary policy has limits: constrained by zero bound

The dominant view during the pre-crisis period that one objective and one instrument as the best monetary policy framework has come under question during the crisis. Despite the success of this framework in achieving price stability, the crisis falsified the dominant view that price stability could simultaneously ensure financial stability. It can be observed from the sequencing of monetary policy responses in advanced countries that as policy rates gradually approached record lows or even near zero, central banks had to resort to unconventional measures such as credit and quantitative easing, which posed significant challenges to policy communication.

New Keynesian models generally agree that monetary policy can be effective even at zero lower bound, if policy can take the form of credible commitments to future interest rate paths. However, the risk is that such commitments could undermine central banks' credibility if not communicated effectively. As solutions to zero bound constraint, other prescriptions (i) raising inflation targets by central banks (Blanchard et al., 2010) and (ii) making negative nominal interest rates a possibility (Mankiw, 2010) have been questioned on various grounds. While such measures may have a stimulating impact on the economy, they may come at the risk of undermining public confidence in the central bank's willingness to resist further upward shifts in inflation.

Various alternative measures were undertaken in view of the constraint of zero lower bound. For instance, the US Fed expanded its balance sheet on the liability side through remuneration of reserves to pursue an expansionary monetary policy. However, this in itself did not constitute an expansionary policy stance due to lack of associated incentive to spend. The balance sheet expansion on the asset side through direct purchases of private securities, although considered to be more effective, had repercussions in terms of

profits/loss with attendant fiscal implications. IMF (2010) points out that in case of severe crisis, increases in risk aversion may well override the stimulus to consumption and investment from low real interest rates.

The monetary policy frameworks in EMEs, mostly based on multiple indicators (e.g., in China, India and Russia) and multiple instruments were found to be more effective in responding to the crisis situation without being confronted with the zero lower bound. Liquidity management operations being an integral part of execution of monetary policy in EMEs, sequencing of policy measures in a combination of rate and quantity instruments proved to be more effective.

While interest rate continues to be the dominant instrument for implementing monetary policy, supplementing it by other quantity or macro-prudential instruments even in normal times will not only enhance the flexibility of monetary policy to attain multiple objectives but also could obviate the risk of hitting the zero lower bound. Concurrent deployment of multiple instruments also enhances the transmission of monetary policy which is impaired as policy rate moves close to the zero lower bound.

Lesson 2. Asset prices and monetary policy: leaning against the wind

During the pre-crisis period, central banks' monetary policy gained more credibility for achieving great moderation characterized by high growth and low inflation. With the adoption of inflation targeting increasing number of central banks had focused primarily on maintaining price stability. However, it needs to be recognized that globalization was another major factor contributing to the great moderation. Countries such as China and India with their abundant labour provided low cost substitutes and thereby helped contain both inflation and wage pressures in the advanced economies. Consequently, with explicit focus on price stability, central banks were able to anchor inflationary expectations and gain credibility.

On the back of robust growth, there was "benign neglect" of credit market excesses and asset price booms. The pre-crisis view largely favoured that asset markets were efficient at distributing and pricing risk. Even though there could be some temporary bouts in asset prices due to "exuberance" on the part of investors, there was little that monetary policy could do about them (Bean et al., 2010). Moreover, many central banks had limited or no supervisory role and therefore ignored or failed to assess the systemic risk arising from credit and building up of asset price bubbles, partly fuelled by a low interest rate environment.

Post-crisis, it is increasingly recognised that the policy of benign neglect of asset price build-up did not succeed: price stability by itself cannot deliver financial stability. Accordingly, it is felt that the mandate of monetary policy should encompass macro-financial stability and not just price stability. The view that monetary policy frameworks should allow policymakers to lean against the buildup of financial imbalances, even if near-term inflation expectations remain anchored, appears to be gaining ground. The balance of views within the central banking community has been shifting in this direction (Carney, 2009; Shirakawa, 2009; Trichet, 2009; Cagliarini et al, 2010; Woodford, 2010 and Fischer, 2011).

It is argued that central banks must improve the underlying analytical framework of their monetary policy taking due cognisance of asset price movements, monetary and credit developments and the build-up of financial imbalances in order to identify potential risks and ensure more informed decision making. Given the likely synergy between macroprudential supervision and conduct of monetary policy, the perception has gained importance that central banks, entrusted with regulatory and supervisory functions, in addition to monetary policy functions, are better equipped to foster financial stability goals. In fact, many central banks have recently been assigned with new responsibilities for microprudential and macroprudential supervision – such as the Bank of England and the Federal Reserve.

Lesson 3. Financial stability objective: instrumentality not clear?

Post-crisis there is emerging consensus that financial stability should be an objective of central banks but opinion remains divided as to what extent it can be considered as an additional objective of monetary policy. It is argued that the monetary policy horizon for achieving the inflation target could be lengthened to facilitate taking financial stability concerns into account. IMF (2010) noted that in adopting such an approach, central banks need to guard against the persistent deviations of inflation which may otherwise dilute policy accountability and create uncertainty about the long-term commitment to price stability. The question is: should financial stability objectives be considered explicitly in the central bank's reaction function? Svensson (2009) argues that it should be treated as a constraint to monetary policy rather than as a separate target. The rationale being that under normal circumstances financial stability does not impose any constraints on monetary policy, except in crisis when it undermines the effectiveness of transmission mechanism. Broader mandates for central banks will need to be made explicit and conditional on the priority of the core mandates (Gokarn, 2010).

Many EMEs had financial stability as an additional objective of their monetary policy framework and therefore used multiple instruments, including quantitative tools such as the cash reserve ratio to moderate the pace of domestic credit growth as well as monetary impact of large capital flows (e.g., China, India and Russia). Macro-prudential measures in the form of loan loss provisioning requirements were used to target certain sectors in a number of EMEs (Moreno, 2011). Apart from raising provisioning requirements (on banks' exposure to systemically important nonbank financial institutions), risk weights (for housing loans, consumer credit and commercial real estate) were also used to check unbridled credit growth in specific sectors. Several countries used credit ceilings (such as Indonesia) and window guidance (involving consultations between the authorities and the banks in China) to curtail lending, while Korea used aggregate credit ceiling to target credit to small and medium enterprises.

Even while the weight of arguments tilts towards acceptance of financial stability as an objective of central bank or monetary policy, there is little agreement about what should be the framework and how it should be implemented: First, even if central banks closely monitor developments in asset markets, how to calibrate the policy response remains an open-ended issue? Second, do central banks have a sufficient number of instruments to conduct both monetary and prudential policy to fulfill a dual mandate of price and financial stability? If both monetary policy and prudential policies are conducted by the central bank, dedicated governance arrangements are needed to ensure monetary policy independence (IMF, 2010). Third, how to coordinate macro-prudential tools with other supervisory and regulatory agencies? This issue becomes all the more important when regulatory and supervisory functions of financial system do not fall under central banks' purview. Fourth, there are also risks that macro-prudential tools may under certain conditions act as substitutes to policy interest rates and thereby could undermine the effectiveness of monetary transmission mechanism.

Lesson 4. Financial stability: a shared responsibility?

There is no denying that financial stability, by its nature, lacks precise specification and measurement unlike price stability. Even though greater role for central banks has been widely recognized for ensuring financial stability, unlike price stability, a formal institutional framework for better coordination with other regulatory agencies is yet to evolve. Caruana (2011) highlighted that determining the manner of interaction and ensuring central bank autonomy needed to achieve price stability, will not be easy.

Nonetheless, a number of countries, viz., the UK, the US and Euro area are gearing towards a new set of arrangements for better coordination between financial regulatory agencies. In particular, central banks are being assigned with an enhanced role for financial stability in

view of their informational advantage with respect to the dynamics of the financial system. For instance, in the UK a Financial Policy Committee (FPC) has been set up under the Chairmanship of Governor of the Bank of England to promote financial stability objective. Within the Bank of England, a Prudential Regulation Authority (PRA) has been constituted to deal with issues related to macro-prudential regulation for reducing risks across the financial system. In this context, it may be noted that in many EMEs, including India, the responsibility for executing monetary policy and supervising the financial system rested with the central banks. This sort of arrangement proved to be more effective during the crisis, especially by enabling central banks to undertake macro-prudential measures.

In the recent years, the Reserve Bank conducted macro-prudential regulation being both the monetary authority and the regulator of banks and non-bank financial institutions. However, there are different regulators for the capital market, insurance and pension fund. In order to facilitate coordination amongst the various regulators of the financial system, recently a Financial Stability and Development Council (FSDC) has been set up with the Finance Minister as Chairman. While coordination mechanisms within the financial sector have been strengthened, it is yet early to assess their efficacy which will be tested by future developments.

Lesson 5. Need for development of local bond market

In the context of stability of the external sector, a key initiative could be to develop the local currency bond market. Experience shows that capital flows to emerging and developing countries take a sudden hit even if they are not the source of crisis. This can pose a number of challenges for policy makers in EMEs. First, financing of growth can be an issue with significant dependence on external resources. Second, domestic currencies tend to fall with reversal of capital flows. Third, bank-intermediation is also adversely affected as was observed during the recent crisis. Under such circumstances, countries with well functioning and liquid local bond markets cope better with shocks and the risks stemming from frozen credit markets. Since EMEs do not have reserve currency status, they need to keep adequate buffers of foreign exchange reserves to insure against sudden reversals in investor sentiment.

In India, the Reserve Bank and the Securities and Exchange Board of India (SEBI) have taken a number of steps to develop the market microstructure of the corporate bond market. Limits on foreign investment in local currency bonds have been progressively liberalised. It is expected that further reforms in insurance and pension segments of the financial sector alongside fiscal consolidation will spur demand for corporate bonds. As India has a huge need for infrastructure development, the expansion of corporate bond market becomes important.

Lesson 6. Exchange rate policy and global imbalances

It is argued that the coexistence of complementary growth models may have contributed to the crisis. While many EMEs followed export-oriented growth models, major advanced economies followed debt fueled growth models which were not bound by external current account constraints. This ultimately led to building up of global imbalances between current account deficits and surpluses as well as between savings and investment. The causation, however, is not very clear: whether it is excess savings in EMEs or excess consumption in the advanced countries that contributed to the crisis. Moreover, it is also not clear whether movement in exchange rates by itself could have prevented global imbalances without an adjustment in aggregate demand – lower consumption in the advanced countries and higher consumption in EMEs. On balance, there is broad agreement that greater flexibility in exchange rate could help moderate global imbalance.

V. Conclusion

The recent experience showed that conventional policy framework may not always be sufficient to deal with crisis. Therefore, central banks have to be flexible enough and innovative in their policy approach to respond promptly to the build-up of sectoral imbalances.

The dominant view during the pre-crisis period that one objective and one instrument as the best monetary policy framework has come under question during the crisis. Experience in EMEs including India suggests that multiple indicators along with multiple instruments can work well not only during normal times but also during crisis. While interest rate can continue as the dominant instrument for implementing monetary policy, supplementing it with other quantity or macro-prudential instruments even in normal times will not only enhance the flexibility of monetary policy to attain multiple objectives but also could obviate the risk of hitting the zero lower bound.

Post-crisis, there is emerging consensus that financial stability should be an objective of central banks but opinion remains divided as to what extent it can be considered as an additional objective of monetary policy. Even while the weight of arguments tilts towards acceptance of financial stability as an objective of central bank or monetary policy, the key challenge is to evolve a consistent framework for implementation.

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