Rakesh Mohan: Global financial crisis – causes, impact, policy responses and lessons

Speech by Dr Rakesh Mohan, Deputy Governor of the Reserve Bank of India, at the 7th Annual India Business Forum Conference, London Business School, London, 23 April 2009.

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The intensification of the global financial crisis, following the bankruptcy of Lehman Brothers in September 2008, has made the current economic and financial environment a very difficult time for the world economy, the global financial system and for central banks. The fall out of the current global financial crisis could be an epoch changing one for central banks and financial regulatory systems. It is, therefore, very important that we identify the causes of the current crisis accurately so that we can then find, first, appropriate immediate crisis resolution measures and mechanisms; second, understand the differences among countries on how they are being impacted; and, finally, think of the longer term implications for monetary policy and financial regulatory mechanisms.

These are all large subjects and I cannot hope to do justice to in the limited space available in one speech. A legion of both policymakers and scholars are at work analysing the causes of the crisis and findings both immediate and longer term solutions (For example, the de Larosiere Report (2009), the Turner Review (2009), the Geneva Report (2009), the Group of Thirty Report (2008) and the IMF Lessons paper (2009b)). I can only attempt some conjectures, raise issues and identify some possible directions in which we should move.

What I will attempt to do is to provide my interpretation of the unfolding of the present global financial crisis; how it is affecting us; why the Indian financial sector has been able to weather the crisis relatively well; the analytics of our policy response; and, finally, some implications of its longer lasting effects.

I. Global financial crisis

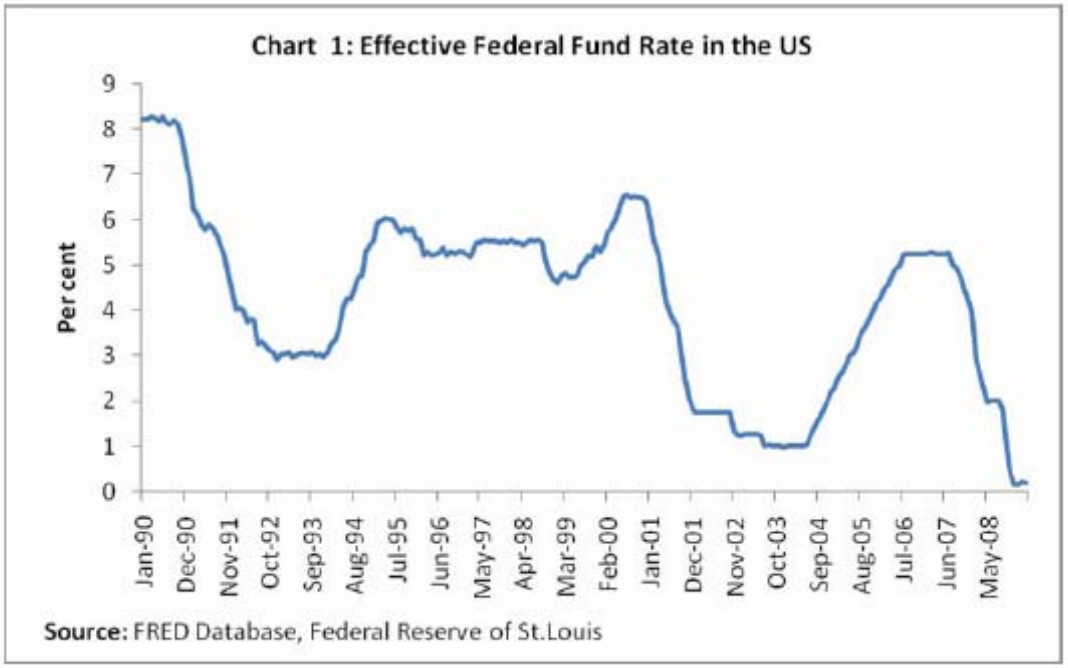
Genesis of global financial crisis

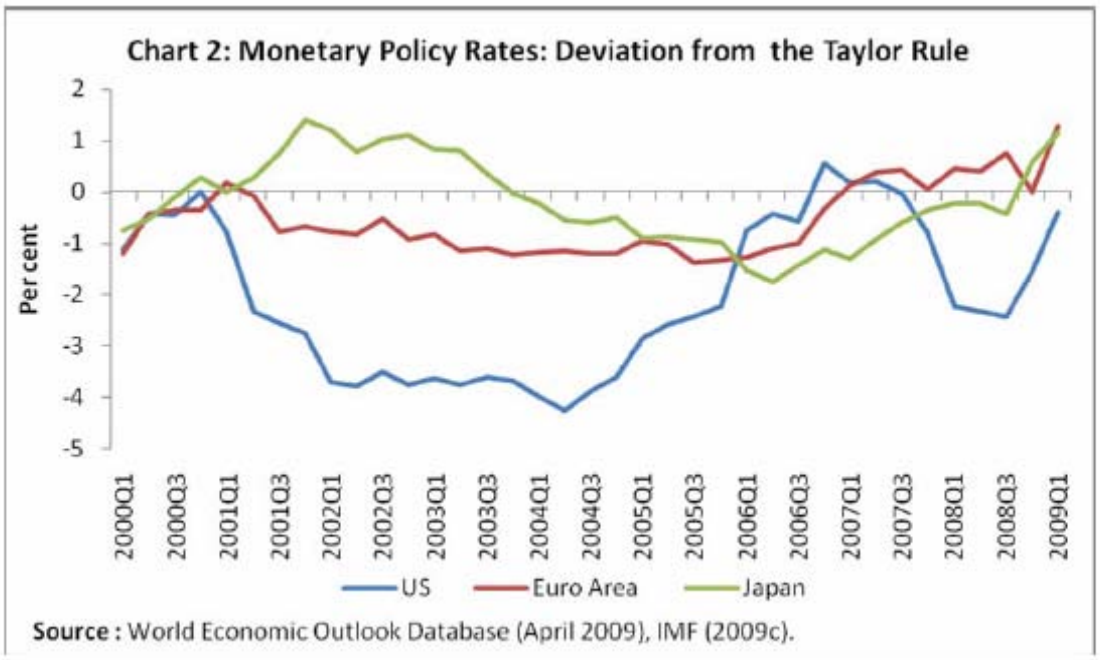
The proximate cause of the current financial turbulence is attributed to the sub-prime mortgage sector in the USA. At a fundamental level, however, the crisis could be ascribed to the persistence of large global imbalances, which, in turn, were the outcome of long periods of excessively loose monetary policy in the major advanced economies during the early part of this decade (Mohan, 2007, Taylor, 2008).

Global imbalances have been manifested through a substantial increase in the current account deficit of the US mirrored by the substantial surplus in Asia, particularly in China, and in oil exporting countries in the Middle East and Russia (Lane, 2009). These imbalances in the current account are often seen as the consequence of the relative inflexibility of the currency regimes in China and some other EMEs. According to Portes (2009), global macroeconomic imbalances were the major underlying cause of the crisis. These saving-investment imbalances and consequent huge cross-border financial flows put great stress on the financial intermediation process. The global imbalances interacted with the flaws in financial markets and instruments to generate the specific features of the crisis. Such a view, however, offers only a partial analysis of the recent global economic environment. The role of

monetary policy in the major advanced economies, particularly that in the United States, over the same time period needs to be analysed for a more balanced analysis.

Following the dot com bubble burst in the US around the turn of the decade, monetary policy in the US and other advanced economies was eased aggressively. Policy rates in the US reached one per cent in June 2003 and were held around these levels for an extended period (up to June 2004) (Chart 1). In the subsequent period, the withdrawal of monetary accommodation was quite gradual. An empirical assessment of the US monetary policy also indicates that the actual policy during the period 2002-06, especially during 2002-04, was substantially looser than what a simple Taylor rule would have required (Chart 2). "This was an unusually big deviation from the Taylor Rule. There was no greater or more persistent deviation of actual Fed policy since the turbulent days of the 1970s. So there is clearly evidence that there were monetary excesses during the period leading up to the housing boom" (Taylor, op.cit.). Taylor also finds some evidence (though not conclusive) that rate decisions of the European Central Bank (ECB) were also affected by the US Fed monetary policy decisions, though they did not go as far down the policy rate curve as the US Fed did.





Excessively loose monetary policy in the post dot com period boosted consumption and investment in the US and, as Taylor argues, it was made with purposeful and careful consideration by monetary policy makers. As might be expected, with such low nominal and real interest rates, asset prices also recorded strong gains, particularly in housing and real estate, providing further impetus to consumption and investment through wealth effects. Thus, aggregate demand consistently exceeded domestic output in the US and, given the macroeconomic identity, this was mirrored in large and growing current account deficits in the US over the period (Table 1). The large domestic demand of the US was met by the rest of the world, especially China and other East Asian economies, which provided goods and services at relatively low costs leading to growing surpluses in these countries. Sustained current account surpluses in some of these EMEs also reflected the lessons learnt from the Asian financial crisis. Furthermore, the availability of relatively cheaper goods and services from China and other EMEs also helped to maintain price stability in the US and elsewhere, which might have not been possible otherwise. Thus measured inflation in the advanced economies remained low, contributing to the persistence of accommodative monetary policy.

Table 1: Current Account Balance (per cent to GDP)

Country	1990-94	1995-99	2000-04	2005	2006	2007	2008
China	1.4	1.9	2.4	7.2	9.5	11.0	10.0
France	0.0	2.0	1.3	-0.6	-0.6	-1.0	-1.6
Germany	-0.4	-0.8	1.4	5.1	6.1	7.5	6.4
India	-1.3	-1.3	0.5	-1.3	-1.1	-1.0	-2.8
Japan	2.4	2.3	2.9	3.6	3.9	4.8	3.2
Korea	-1.0	1.9	2.1	1.8	0.6	0.6	-0.7
Malaysia	-5.2	1.8	9.8	15.0	16.7	15.4	17.4
Philippines	-4.0	-2.8	-0.7	2.0	4.5	4.9	2.5
Russia	0.9	3.5	11.2	11.0	9.5	5.9	6.1
Saudi Arabia	-11.7	-2.4	10.6	28.7	27.9	25.1	28.9
South Africa	1.2	-1.3	-0.7	-4.0	-6.3	-7.3	-7.4
Switzerland	5.7	8.8	10.8	13.6	14.5	10.1	9.1
Thailand	-6.4	1.0	4.2	-4.3	1.1	5.7	-0.1
Turkey	-0.9	-0.8	-1.6	-4.6	-6.0	-5.8	-5.7
United Arab Emirates	8.3	4.6	9.9	18.0	22.6	16.1	15.8
United Kingdom	-2.1	-1.0	-2.0	-2.6	-3.4	-2.9	-1.7
United States	-1.0	-2.1	-4.5	-5.9	-6.0	-5.3	-4.7
Memo:							
Euro area	n.a.	0.9@	0.4	0.4	0.3	0.2	-0.7
Middle East	-5.1	1.0	8.4	19.7	21.0	18.2	18.8

Source: World Economic Outlook Database, April 2009, International Monetary Fund (2009c).
Note: (-) indicates deficit. @: 1997-99

The emergence of dysfunctional global imbalances is essentially a post 2000 phenomenon and which got accentuated from 2004 onwards. The surpluses of East Asian exporters, particularly China, rose significantly from 2004 onwards, as did those of the oil exporters (Table 1). In fact, Taylor (op. cit.) argues that the sharp hike in oil and other commodity prices in early 2008 was indeed related to the very sharp policy rate cut in late 2007 after the sub-prime crisis emerged.

It would be interesting to explore the outcome had the exchange rate policies in China and other EMEs been more flexible. The availability of low priced consumer goods and services from EMEs was worldwide. Yet, it can be observed that the Euro area as a whole did not exhibit large current account deficits throughout the current decade. In fact, it exhibited a surplus except for a minor deficit in 2008. Thus it is difficult to argue that the US large current account deficit was caused by China's exchange rate policy. The existence of excess demand for an extended period in the U.S. was more influenced by its own macroeconomic and monetary policies, and may have continued even with more flexible exchange rate policies in China. 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. Thus, it is most likely that the US current account deficit would have been as large as it was – only the surplus counterpart countries might have been somewhat different. The perceived lack of exchange rate flexibility in the Asian EMEs cannot, therefore, fully explain the large and growing current account deficits in the US. The fact that many continental European countries continue to exhibit surpluses or modest deficits reinforces this point.

Apart from creating large global imbalances, accommodative monetary policy and the existence of very low interest rates for an extended period encouraged the search for yield, and relaxation of lending standards. Even as financial imbalances were building up, macroeconomic stability was maintained. Relatively stable growth and low inflation have

been witnessed in the major advanced economies since the early 1990s and the period has been dubbed as the Great Moderation. The stable macroeconomic environment encouraged underpricing of risks. Financial innovations, regulatory arbitrage, lending malpractices, excessive use of the originate and distribute model, securitisation of sub-prime loans and their bundling into AAA tranches on the back of ratings, all combined to result in the observed excessive leverage of financial market entities.

Components of the crisis

Most of the crises over the past few decades have had their roots in developing and emerging countries, often resulting from abrupt reversals in capital flows, and from loose domestic monetary and fiscal policies. In contrast, the current ongoing global financial crisis has had its roots in the US. The sustained rise in asset prices, particularly house prices, on the back of excessively accommodative monetary policy and lax lending standards during 2002-2006 coupled with financial innovations resulted in a large rise in mortgage credit to households, particularly low credit quality households. Most of these loans were with low margin money and with initial low teaser payments. Due to the "originate and distribute" model, most of these mortgages had been securitized. In combination with strong growth in complex credit derivatives and 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.

As inflation started creeping up beginning 2004, the US Federal Reserve started to withdraw monetary accommodation. With interest rates beginning to edge up, mortgage payments also started rising. Tight monetary policy contained aggregate demand and output, depressing housing prices. With low/negligible margin financing, there were greater incentives to default by the sub-prime borrowers. Defaults by such borrowers led to losses by financial institutions and investors alike. 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 the financial institutions wiping off a significant fraction of their capital. The theory and expectation behind the practice of securitisation and use of derivatives was the associated dispersal of risk to those who can best bear them. What happened in practice was that risk was parcelled out increasingly among banks and financial institutions, and got effectively even more concentrated. It is interesting to note that the various stress tests conducted by the major banks and financial institutions prior to the crisis period had revealed that banks were well-capitalised to deal with any shocks. Such stress tests, as it appears, were based on the very benign data of the period of the Great Moderation and did not properly capture and reflect the reality (Haldane, 2009).

The excessive leverage on the part of banks and the financial institutions (among themselves), the opacity of these transactions, the mounting losses and the dwindling net worth of major banks and financial institutions 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. 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 prices (until the third quarter of 2008) and their subsequent collapse, and the sharp correction in a range of asset prices, all combined, have suddenly led to a 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 projected to contract by 1.3 per cent (IMF, 2009c) (Table 2). Major advanced economies are

in recession and the EMEs – which in the earlier part of 2008 were widely viewed as being decoupled from the major advanced economies – have also been engulfed by the financial crisis-led slowdown. Global trade volume (goods and services) is also expected to contract by 11 per cent during 2009 as against the robust growth of 8.2 per cent during 2006-2007. Private capital inflows (net) to the EMEs fell from the peak of US $ 617 billion in 2007 to US $ 109 billion in 2008 and are projected to record net outflows of US $ 190 billion in 2009. The sharp decline in capital flows in 2009 will be mainly on account of outflows under bank lending and portfolio flows. Thus, both the slowdown in external demand and the lack of external financing have dampened growth prospects for the EMEs much more than that was anticipated a year ago.

Table 2: Global Economic Outlook for 2009 (per cent)

Indicator	Month of Forecast											
	April 2008		July 2008		October 2008		November 2008		January 2009		April 2009	
	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009
1. Global Growth	3.7	3.8	4.1	3.9	3.9	3.0	3.4	0.5	3.4	0.5	3.2	- 1.3
(a) Advanced Economies	1.3	1.3	1.7	1.4	1.5	0.5	1.0	-2.0	1.0	-2.0	0.9	- 3.8
(b) EMEs	6.7	6.6	6.9	6.7	6.9	6.1	6.3	3.3	6.3	3.3	6.1	1.6
2. World Trade Volume	3.7	3.8	4.1	3.9	3.9	3.0	4.1	-2.8	4.1	-2.8	3.3	- 11.0
3. Consumer Price Inflation												
(a) Advanced Economies	2.6	2.0	3.4	2.3	3.6	2.0	3.5	0.3	3.5	0.3	3.4	- 0.2
(b) EMEs	7.4	5.7	9.1	7.4	9.4	7.8	9.2	5.8	9.2	5.8	9.3	5.7

Source: World Economic Outlook, various issues, International Monetary Fund.
@: Volume growth in goods and services.

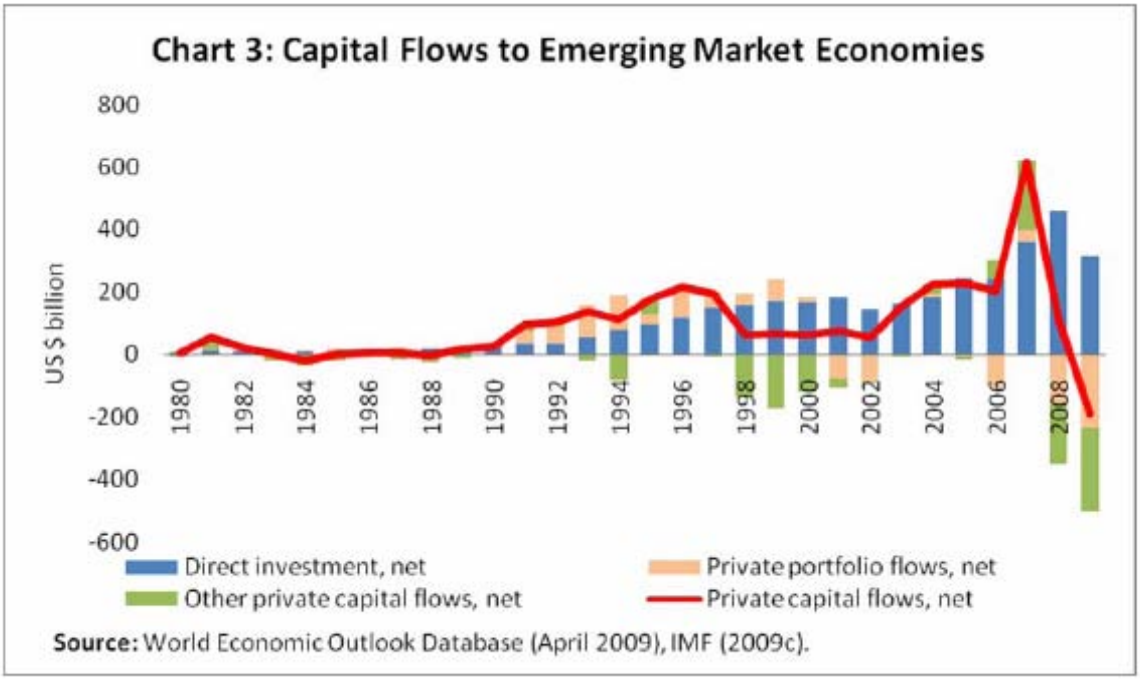
Volatility in capital flows: implications for emerging market economies

Monetary policy developments in the leading economies not only affect them domestically, but also have a profound impact on the rest of the world through changes in risk premia and search for yield leading to significant switches in capital flows. While the large volatility in the monetary policy in the US, especially since the beginning of this decade, could have been dictated by internal compulsions to maintain employment and price stability, the consequent volatility in capital flows impinges on exchange rate movements and more generally, on the spectrum of asset and commodity prices. The monetary policy dynamics of the advanced economies thus involve sharp adjustment for the EMEs.

Private capital flows to EMEs have grown rapidly since the 1980s, but with increased volatility over time. Large capital flows to the EMEs can be attributed to a variety of push and pull factors. The pull factors that have led to higher capital flows include strong growth in the EMEs over the past decade, reduction in inflation, macroeconomic stability, opening up of capital accounts and buoyant growth prospects. The major push factor is the stance of monetary policy in the advanced economies. Periods of loose monetary policy and search for yield in the advanced economies encourages large capital inflows to the EMEs and vice versa in periods of tighter monetary policy. Thus, swings in monetary policy in the advanced economies lead to cycles and volatility in capital flows to the EMEs. Innovations in information technology have also contributed to the two-way movement in capital flows to the

EMEs. Overall, in response to these factors, capital flows to the EMEs since the early 1980s have grown over time, but with large volatility (Committee on Global Financial System, 2009).

After remaining nearly flat in the second half of the 1980s, private capital flows jumped to an annual average of US $ 124 billion during 1990-96.[1] With the onset of the Asian financial crisis, total private capital flows fell to an annual average of US $ 86 billion during 1997-2002. Beginning 2003, a period coinciding with the low interest rate regime in the US and major advanced economies and the concomitant search for yield, such flows rose manifold to an annual average of US $ 285 billion during 2003-2007 reaching a peak of US $ 617 billion in 2007 (Chart 3). As noted earlier, the EMEs, as a group, are now likely to witness outflows of US $ 190 billion in 2009 – the first contraction since 1988. Amongst the major components, while direct investment flows have generally seen a steady increase over the period, portfolio flows as well as other private flows (bank loans etc) have exhibited substantial volatility. While direct investment flows largely reflect the pull factors, portfolio and bank flows reflect both the push and the pull factors. It is also evident that capital account transactions have grown much faster relative to current account transactions, and gross capital flows are a multiple of both net capital flows and current account transactions. Also, large private capital flows have taken place in an environment when major EMEs have been witnessing current account surpluses leading to substantial accumulation of foreign exchange reserves in many of these economies.



As noted earlier, the policy interest rates in the US reached extremely low levels during 2002 – one per cent – and remained at these levels for an extended period of time, through mid 2004. Low nominal interest rates were also witnessed in other major advanced economies over the same period. The extremely accommodative monetary policy in the advanced economies was mirrored in the strong base money expansion during the period 2001-02 – shortly before the beginning of the current episode of strong capital flows to EMEs. As the monetary accommodation was withdrawn in a phased manner, base money growth

[1] The data on capital flows are based on World Economic Outlook Database (April 2009) of the International Monetary Fund (IMF, 2009c).

witnessed correction beginning 2004. However, contrary to the previous episodes, capital flows to the EMEs continued to be strong. The expected reversal of capital flows from the EMEs was somewhat delayed and finally took place in 2008. Similarly, the previous episode (1993-96) of heavy capital inflows was also preceded by a significant expansion of base money during 1990-94, and sharp contraction thereafter. This brief discussion highlights the correlation between monetary policy cycles in the advanced economies on the one hand and pricing/mispricing of risk and volatility in capital flows on the other hand. At present, monetary policies across the advanced economies have again been aggressively eased and policy interest rates have reached levels even lower than those which were witnessed in 2002. Base money in the US more than doubled over a period of just six months between June and December 2008. Given such a large monetary expansion and given the past experiences, large capital inflows to the EMEs could resume in the foreseeable future, if the unwinding of the current monetary expansion is not made in a timely fashion.

In rapidly growing economies such as India, high real GDP growth needs concomitant growth in monetary aggregates, which also needs expansion of base money. To this extent, the accretion of unsterilised foreign exchange reserves to the central bank's balance sheet is helpful in expanding base money at the required rate. However, net capital flows and accretion to foreign exchange reserves in excess of such requirements necessitate sterilisation and more active monetary and macroeconomic management. Thus, large inflows of capital, well in excess of the current financing needs, can lead to high domestic credit and monetary growth, boom in stock market and other asset prices, and general excess domestic demand leading to macroeconomic and financial instability. Abrupt reversals in capital flows also lead to significant difficulties in monetary and macroeconomic management.

While, in principle, capital account liberalisation is expected to benefit the host economy and raise its growth rate, this theoretical conjecture is not supported by the accumulated empirical evidence. Despite an abundance of cross-section, panel, and event studies, there is strikingly little convincing documentation of direct positive impacts of financial opening on the economic welfare levels or growth rates of developing countries. There is also little systematic evidence that financial opening raises welfare indirectly by promoting collateral reforms of economic institutions or policies. At the same time, opening the financial account does appear to raise the frequency and severity of economic crises (Obstfeld, 2009). The evidence appears to favour a hierarchy of capital flows. While the liberalisation of equity flows seems to enhance growth prospects, the evidence that the liberalisation of debt flows is beneficial to the EMEs is ambiguous (Henry, 2007; Committee on Global Financial System (2009)).

Reversals of capital flows from the EMEs, as again shown by the current financial crisis, are quick, necessitating a painful adjustment in bank credit, and collapse of stock prices. Such reversals also result in the contraction of the central bank's balance sheet, which may be difficult to compensate with accretion of domestic assets as fast as the reserves depletion. These developments can then lead to banking and currency crises, large employment and output losses and huge fiscal costs. Thus, the boom and bust pattern of capital inflows can, unless managed proactively, result in macroeconomic and financial instability. Hence, the authorities in the EMEs need to watch closely and continuously financial and economic developments in the advanced economies on the one hand and actively manage their capital account.

To summarise, excessively accommodative monetary policy for an extended period in the major advanced economies in the post dot com crash period sowed the seeds of the current global financial and economic crisis. Too low policy interest rates, especially the US, during the period 2002-04 boosted consumption and asset prices, and resulted in aggregate demand exceeding output, which was manifested in growing global imbalances. Too low short-term rates also encouraged aggressive search for yield, both domestically and globally, encouraged by financial engineering, heavy recourse to securitisation and lax regulation and supervision. The global search for yield was reflected in record high volume of capital flows

to the EMEs; since such flows were well in excess of their financing requirements, the excess was recycled back to the advanced economies, leading to depressed long-term interest rates. The Great Moderation over the preceding two decades led to under-pricing of risks and the new financial and economic regime was considered as sustainable. The combined effect of these developments was excessive indebtedness of households, credit booms, asset price booms and excessive leverage in the major advanced economies, but also in emerging market economies. While forces of globalisation were able to keep goods and services inflation contained for some time, the aggregate demand pressures of the accommodative monetary started getting reflected initially in oil and other commodity prices and finally onto headline inflation. The consequent tightening of monetary policy led to correction in housing prices, encouraged defaults on sub-prime loans, large losses for banks and financial institutions, sharp increase in risk aversion, complete lack of confidence and trust amongst market participants, substantial deleveraging, and large capital outflows from the EMEs. Financial excesses of the 2002-06 were, thus, reversed in a disruptive manner and have now led to the severest post-war recession. In brief, the large volatility in monetary policy in the major reserve currency countries contributed to the initial excesses and their subsequent painful correction.

II. Impact on India

Initial impact of the sub-prime crisis

The initial impact of the sub-prime crisis on the Indian economy was rather muted. Indeed, following the cuts in the US Fed Funds rate in August 2007, there was a massive jump in net capital inflows into the country. The Reserve Bank had to sterilise the liquidity impact of large foreign exchange purchases through a series of increases in the cash reserve ratio and issuances under the Market Stabilisation Scheme (MSS).[2] With persistent inflationary pressures emanating both from strong domestic demand and elevated global commodity prices, policy rates were also raised. Monetary policy continued with pre-emptive tightening measures up to August 2008.

The direct effect of the sub-prime crisis on Indian banks/financial sector was almost negligible because of limited exposure to complex derivatives and other prudential policies put in place by the Reserve Bank. The relatively lower presence of foreign banks in the Indian banking sector also minimized the direct impact on the domestic economy (Table 3). The larger presence of foreign banks can increase the vulnerability of the domestic economy to foreign shocks, as happened in Eastern European and Baltic countries. In view of significant liquidity and capital shocks to the parent foreign bank, it can be forced to scale down its operations in the domestic economy, even as the fundamentals of the domestic

[2] In view of sustained large capital flows, the finite stock of government securities with the Reserve Bank, and the absence of the option of issuing central bank securities under the RBI Act, a new scheme, Market Stabilisation Scheme (MSS), was introduced in April 2004 to manage the large capital flows. Under this scheme, the Reserve Bank has been empowered to issue government Treasury Bills and medium duration dated securities exclusively for sterilization purposes, so as to manage liquidity appropriately. The proceeds collected under MSS auctions are kept in a separate identifiable cash account with the RBI, and are used for redemption and/or buy back of securities issued under the MSS. The payments for interest and discount on MSS securities are not made from the MSS Account, but shown in the government budget transparently. The MSS securities are indistinguishable from normal government Treasury Bills and dated securities in the hands of the holders. The introduction of MSS has succeeded broadly in restoring LAF to its intended function of daily liquidity management (see Mohan (2006)). MSS operates symmetrically as a store of liquidity: it helps to absorb excess liquidity in times of large capital flows and to inject liquidity in periods of reversals in capital flows. Thus, balances under MSS rose from around Rs.39,000 crore at end-January 2007 to around Rs.1,75,000 crore by end-May 2008 in the face of large capital flows; in the subsequent period, with reversals in capital flows, MSS balances came down to around Rs. 88,000 crore by end-March 2009 and helped maintain adequate rupee liquidity in the system.

economy remain robust. Thus, domestic bank credit supply can shrink during crisis episodes. For instance, in response to the stock and real estate market collapse of early 1990s, Japanese banks pulled back from foreign markets – including the United States – in order to reduce liabilities on their balance sheets and thereby meet capital adequacy ratio requirements. Econometric evidence shows a statistically significant relationship between international bank lending to developing countries and changes in global liquidity conditions, as measured by spreads of interbank interest rates over overnight index swap (OIS) rates and U.S. Treasury bill rates. A 10 basis-point increase in the spread between the London Interbank Offered Rate (LIBOR) and the OIS sustained for a quarter, for example, is predicted to lead to a decline of up to 3 percent in international bank lending to developing countries (World Bank, 2008).

Table 3 :Share of banking assets held by foreign banks with majority ownership, 2006

Country	0%–10%	Country	10%–30%	Country	30%–50%	Country	50%–70%	Country	70%–100%
Algeria	9	Moldova	30	Senegal	48	Rwanda	70	Madagascar	100
Nepal	9	Honduras	29	Congo	47	Côte d'Ivoire	66	Mozambique	100
Guatemala	8	Ukraine	28	Uruguay	44	Tanzania	66	Swaziland	100
Thailand	5	Indonesia	28	Panama	42	Ghana	65	Peru	95
India	5	Cambodia	27	Kenya	41	Burkina Faso	65	Hungary	94
Ecuador	5	Argentina	25	Benin	40	Serbia and Montenegro	65	Albania	93
Azerbaijan	5	Brazil	25	Bolivia	38	Cameroon	63	Lithuania	92
Mauritania	5	Kazakhstan	24	Mauritius	37	Romania	60	Croatia	91
Nigeria	5	Pakistan	23	Burundi	36	Niger	59	Bosnia-Herzegovina	90
Turkey	4	Costa Rica	22	Seychelles	36	Mali	57	Mexico	82
Uzbekistan	1	Malawi	22	Lebanon	34	Angola	53	Macedonia	80
Philippines	1	Tunisia	22	Nicaragua	34	Latvia	52	Uganda	80
South Africa	0	Mongolia	22	Chile	32	Jamaica	51	El Salvador	78
China	0	Sudan	20	Venezuela	32	Zimbabwe	51	Zambia	77
Vietnam	0	Morocco	18	Georgia	32	Namibia	50	Botswana	77
Iran	0	Colombia	18	Armenia	31			Kyrgyzstan	75
Yemen	0	Malaysia	16					Poland	73
Bangladesh	0	Jordan	14					Bulgaria	72
Sri Lanka	0	Russia	13					Paraguay	71
Ethiopia	0	Egypt	12						
Togo	0								

Note.

1. A bank is defined as foreign owned only if 50 percent or more of its shares in a given year are held directly by foreign nationals. Once foreign ownership is determined, the source country is identified as the country of nationality of the largest foreign shareholder(s). The table does not capture the assets of the foreign banks with minority foreign ownership.
2. World Bank staff estimates based on Bankscope data.

Source: World Bank (2008).

Impact of Lehman failure

Balance of payments: capital outflows

There was also no direct impact of the Lehman failure on the domestic financial sector in view of the limited exposure of the Indian banks. However, following the Lehman failure, there was a sudden change in the external environment. As in the case of other major EMEs, there was a sell-off in domestic equity markets by portfolio investors reflecting deleveraging.

Consequently, there were large capital outflows by portfolio investors during September-October 2008, with concomitant pressures in the foreign exchange market. While foreign direct investment flows exhibited resilience, access to external commercial borrowings and trade credits was rendered somewhat difficult. On the whole, net capital inflows during 2008-09 were substantially lower than in 2007-08 and there was a depletion of reserves (Table 4). However, a large part of the reserve loss (US $ 33 billion out of US $ 54 billion) during April-December 2008 reflected valuation losses.

Table 4 : Trends in Capital Flows

(US $ billio

Component	Period	2007-08	2008-09
Foreign Direct Investment to India	April-February	27.6	31.7
FIIs (net)	April-March	20.3	-15.0
External Commercial Borrowings (net)	April- December	17.5	6.0
Short-term Trade Credits (net)	April- December	10.7	0.5
Total capital flows (net)	April- December	82.0	15.3
Memo:			
Current Account Balance	April- December	-15.5	-36.5
Valuation Gains (+)/Losses (-) on Foreign Exchange Reserves	April- December	+ 9.0	-33.4
Foreign Exchange Reserves (variation)	April-December	76.1	-53.8
Foreign Exchange Reserves (variation)	April-March	110.5	-57.7

The contraction of capital flows and the sell-off in the domestic market adversely affected both external and domestic financing for the corporate sector. The sharp slowdown in demand in the major advanced economies is also having an adverse impact on our exports and industrial performance. On the positive side, the significant correction in international oil and other commodity prices has alleviated inflationary pressures as measured by wholesale price index. However, various measures of consumer prices remain at elevated levels on the back of continuing high inflation in food prices.

Fiscal impact

Government finances, which had exhibited a noteworthy correction starting 2002-03, came under renewed pressure in 2008-09 on account of higher expenditure outgoes due to (i) higher international crude oil prices (up to September 2008) and the incomplete pass-through to domestic prices (ii) higher fertiliser prices and associated increase in fertiliser prices (iii) the Sixth Pay Commission award and (iv) debt waiver scheme. The fiscal stimulus packages involving additional expenditures and tax cuts have put further stress on the fisc. Reflecting these factors, the Central Government's fiscal deficit more than doubled from 2.7 per cent of GDP in 2007-08 to 6.0 per cent in 2008-09, reaching again the levels seen around the end of the 1990s. The revenue deficit at 4.4 per cent of GDP will be at its previous peak touched during 2001-02 and 2002-03. Primary balance again turned into deficit in 2008-09, after recording surpluses during the preceding two years (Table 5). Net market borrowings during 2008-09 almost trebled from the budgeted Rs.1,13,000 crore to Rs.3,29,649 in the revised

estimates (actual borrowings were Rs.2,98,536 crore as per Reserve Bank records) and are budgeted at Rs.3,08,647 crore (gross borrowings at Rs. 3,98,552 crore) in 2009-10.

In view of the renewed fiscal deterioration, the credit rating agency Standard and Poor's has changed its outlook on long-term sovereign credit rating from stable to negative, while reaffirming the "BBB-" rating. If bonds issued to oil and fertiliser companies are taken into account, the various deficit indicators will be even higher. Moreover, in order to boost domestic demand, the Government has announced additional tax sops subsequent to the interim vote-on-account budget putting further pressure on fiscal position. Thus, while the slowdown in the domestic economy may call for fiscal stimulus, fiscal manoeuvrability is limited.

Table 5 : Key Fiscal Indicators of the Central Government

(Per cent to GDP)

Year	Gross fiscal deficit	Gross primary deficit	Revenue deficit
1	2	3	4
1990-91	7.8	4.1	3.3
1991-92	5.6	1.5	2.5
1992-93	5.3	1.2	2.5
1993-94	7.0	2.7	3.8
1994-95	5.7	1.3	3.1
1995-96	5.1	0.9	2.5
1996-97	4.8	0.5	2.4
1997-98	5.8	1.5	3.0
1998-99	6.5	2.0	3.8
1999-00	5.4	0.7	3.5
2000-01	5.7	0.9	4.1
2001-02	6.2	1.5	4.4
2002-03	5.9	1.1	4.4
2003-04	4.5	0.0	3.6
2004-05	4.0	0.0	2.5
2005-06	4.1	0.4	2.6
2006-07	3.5	-0.2	1.9
2007-08	2.7	-0.9	1.1
2008-09 RE	6.0	2.5	4.4
2009-10 BE	5.5	1.8	4.0

RE: Revised Estimates. BE : Budget Estimates.
Note: 1. Negative (-) sign indicates surplus.
2. Oil and fertilizer bonds issued during 2008-09 were 1.8 per cent of GDP.

According to the IMF, based on measures already taken and current plans, it is estimated that government debt ratios and fiscal deficits, particularly in advanced economies, will increase significantly. For the G-20 as a whole, the general government balance is expected to deteriorate by 3½ percent of GDP, on average, in 2009. While the fiscal cost for some countries will be large in the short-run, the alternative of providing no fiscal stimulus or financial sector support would be extremely costly in terms of the lost output (IMF, 2009b).

Impact on the real economy

Reflecting the slowdown in external demand, and the consequences of reversal of capital flows, growth in industrial production decelerated to 2.8 per cent in 2008-09 (April-February) from 8.8 per cent in the corresponding period of 2007-08. On the other hand, services sector activity has held up relatively well in 2008-09 so far (April-December) with growth of 9.7 per cent (10.5 per cent in the corresponding period of 2007-08). Services sector activity was buoyed up by acceleration in "community, social and personal services" on the back of higher government expenditure. Overall, real GDP growth has slowed to 6.9 per cent in the first three quarters of 2008-09 from 9.0 per cent in the corresponding period of 2007-08. On the expenditure side, growth of private final consumption expenditure decelerated to 6.6 per cent from 8.3 per cent. On the other hand, reflecting the fiscal stimuli and other expenditure measures, growth in government final consumption expenditure accelerated to 13.3 per cent from 2.7 per cent.

III. Financial regulatory policies to manage financial stability: why the Indian financial sector has weathered the storm?

As the preceding discussion shows, it is apparent that the Indian banks and financial system had only negligible direct exposure to the type of toxic assets that have contaminated the Western countries' banking system. Bank's credit quality remains of high quality. Although bank credit growth was quite high at around 30 per cent per annum during 2004-07, it would appear that there was no significant relaxation of lending standards. Bank's loans to individuals for housing have been backed by prudent loan-to-value ratios. However, in view of the rapid credit growth to certain sectors, the Reserve Bank had pre-emptively tightened prudential norms (provisioning requirements and risk weights) for these sectors in order to safeguard financial stability; provisioning norms for standard assets were also raised across the board except for agriculture and SMEs. These tightened provisioning norms and risk weights have now been rolled back in the wake of slowdown in order to ensure flow of credit to the productive sectors of the economy. This "dynamic provisioning" approach has facilitated adequate buffers within the banking system. Such "dynamic provisioning" is now being advocated as general practice internationally. Therefore, unlike the banking system in the Western world, domestic banks have not recorded losses so far and there has been no need for any government bailout.

Bank balance sheets remain healthy and adequately capitalised. The CRAR of all scheduled commercial banks (SCBs) taken together was 13.0 per cent at end-March 2008, well-above the regulatory requirement of 9 per cent. No SCB has CRAR below 9 per cent. Of the 79 SCBs, 77 banks had CRAR above 10 per cent, while 2 banks had CRAR between 9 and 10 per cent. Asset quality of the domestic banks also remains satisfactory with net NPAs being only 1.0 per cent of net advances and 0.6 per cent of assets at end-March 2008 (Table 6).

Table 6: Key Indicators of Scheduled Commercial Banks in India				
Item	**2004-05**	**2005-06**	**2006-07**	**2007-08**
Capital to Risk-weighted Assets Ratio (CRAR) (per cent)	12.8	12.3	12.3	13.0
Of which: Tier I CRAR (per cent)	8.4	9.3	8.3	9.1
Net Non-Performing Assets (per cent to net advances)	1.9	1.2	1.0	1.0
Net Non-Performing Assets (per cent to assets)	0.9	0.7	0.6	0.6
Net profits (per cent to assets)	0.9	0.9	0.9	1.0
Net interest margin (per cent to assets)	2.8	2.8	2.6	2.3
Source: Report on Trend and Progress, 2007-08, Reserve Bank of India.				

A more rigorous assessment of the health of commercial banks, recently undertaken by the Committee on Financial Sector Assessment (CFSA) (Chairman: Dr. Rakesh Mohan) (RBI, 2009), also shows that the commercial banks are robust and resilient. The single-factor stress tests undertaken by the CFSA reveal that the banking system can withstand significant shocks arising from large potential changes in credit quality, interest rate and liquidity conditions. These stress tests for credit, market and liquidity risk show that Indian banks are generally resilient. Given the ongoing financial crisis and its likely impact on the Indian economy, the CFSA conducted stress tests for the end of September 2008. Under the worst-case scenario (150 per cent increase in gross NPAs), the overall capital adequacy position of the banking sector would have declined to 10.6 percent in September 2008 – still well-above the regulatory requirement of 9 per cent. Thus, even under the worst case scenario, CRAR remains comfortably above the regulatory minimum.

Growth in bank credit remained strong up to October 2008 but has decelerated since. The financial system is working normally and accordingly there has been no need for any enhancement of government guarantee for bank deposits or banks' other liabilities. In view of the strong balance sheets and the transparency in the operations, there is no mistrust between banks and the inter-bank money market has been working throughout the period normally (Table 7). Volumes in the money market have in fact grown over the past few months. There was some volatility in the call money rate, but this resulted from the sudden reversal in capital flows and resulting tightening of liquidity in September-October 2008. Thus, the Indian banking system is displaying none of the distresses that the Western banking system has exhibited since the start of the sub-prime crisis.

Table 7: Activity in Money Market Segments

(Average Daily Volume (One Leg) in Rs. Crore)

Year/ Month	Call Money	Repo Market (Outside RBI)	CBLO	Total (2+3+4)
1	2	3	4	5
Year				
2006-07	10,863	8,419	16,195	35,477
2007-08	10,697	13,684	27,813	52,194
2008-09	11,218	14,330	30,776	56,323
Month				
Apr-08	9,758	14,966	38,828	63,552
May-08	9,740	14,729	36,326	60,795
Jun-08	10,854	11,262	35,774	57,890
Jul-08	12,368	8,591	23,669	44,628
Aug-08	11,704	10,454	22,110	44,268
Sep-08	11,690	10,654	20,547	42,891
Oct-08	14,497	9,591	16,818	40,906
Nov-08	10,906	15,191	24,379	50,476
Dec-08	10,820	16,943	32,261	60,024
Jan-09	9,248	18,053	31,794	59,095
Feb-09	11,121	19,929	38,484	69,534
Mar-09	11,909	21,593	43,819	81,821

The resilience of the Indian financial sector in the face of the worst global financial crisis since the 1930s can also be attributed to our approach to financial globalization. The key features of our approach have been reflected in a full, but gradual opening up of the current account but a more calibrated approach towards the opening up of the capital account and the financial sector. As far as the capital account is concerned, whereas foreign investment flows, especially direct investment inflows are encouraged, debt flows in the form of external commercial borrowings are generally subject to ceilings and some end-use restrictions. Macro ceilings have also been stipulated for portfolio investment in government securities and corporate bonds. Capital outflows have also been progressively liberalized. Along with the calibrated approach to opening of the capital account, we have also practised prudential regulation, particularly of banks to manage financial instability.

The financial sector, especially banks, is subject to prudential regulation, with respect to both liquidity and capital. A number of initiatives have been taken by the Reserve Bank over the past 5-6 years with a view to mitigating liquidity risks, at the very short end, systemic level and institution level viz., (i) participation in the overnight unsecured overnight money market has been restricted to banks and primary dealers (PDs) and ceilings have been stipulated on their borrowing and lending operations in this market; (ii) prudential limits have been imposed on banks on their inter-bank liabilities in relation to their net worth; (iii) asset-liability management guidelines have been framed that take cognizance of both on and off balance sheet items; and (iv) a detailed policy on the provision of liquidity support to Special Purchase Vehicles (SPVs) has been outlined in the guidelines on securitization of standard assets.

With the objective of further strengthening capital requirements, the credit conversion factors, risk weights and provisioning requirements for specific off-balance sheet items including

derivatives have been reviewed. Furthermore, in India, complex structures like synthetic securitisation have not been permitted so far. Introduction of such products, when found appropriate would be guided by the risk management capabilities of the system.

Detailed guidelines have been issued by the Reserve Bank on the implementation of the Basel II framework covering all the three pillars. Minimum CRAR of 9 per cent has been prescribed. Banks have been advised to bring Tier I CRAR to a minimum of 6 per cent before end-March 2010. All foreign banks operating in India and Indian banks having a presence outside India migrated to Basel II by March 31, 2008 and all other scheduled commercial banks have migrated to Basel II by March 31, 2009.

Apart from normal prudential requirements on banks, additional prudential measures in respect of exposures to specific sectors such as real estate, housing loans to individuals and consumer credit, have been successively imposed, on the lines of dynamic provisioning. Furthermore, the regulation and supervision of Non-banking Finance Companies (NBFCs) was tightened by reducing regulatory arbitrage vis-à-vis the banking sector. The regulatory requirements are also higher in the case of deposit-taking NBFCs vis-à-vis the non-deposit-taking ones which has helped to contain leverage in this sector.

Thus, a number of prudential measures were put in place incrementally over the past five years in order to maintain stability in the Indian financial system and these measures in conjunction with the overall cautious approach to financial and external sector liberalisation have contributed to domestic macroeconomic and financial stability.

IV. Our response to the unfolding impact of the crisis

As noted earlier, the main impact over the past few months, especially following the collapse of Lehman Brothers in September 2008, has been the outcome of the reduction in net capital inflows and the significant correction in the domestic stock markets on the back of sell-off in the equity market by FIIs. The reduced foreign funding and the lacklustre domestic capital market had put pressures on some segments of the financial system, such as NBFCs and mutual funds. A substantial proportion of collections of mutual funds reflected bulk funds from the corporate sector under the money market schemes, partly reflecting tax and other regulatory arbitrage. As alternative sources of funding dried up and also due to the substantial correction in stock prices, there were large redemption pressures on mutual funds. While the mutual funds promised immediate redemption, there assets were relatively illiquid. Maturity mismatches between assets and liabilities of mutual funds further aggravated the problems. Drying up of funds with mutual funds, which in turn were provider of funds to other sectors, further accentuated the flow of funds. Consequently, all the pressure for fund availability came to rest on banks: from the corporate sector unable to get external funds or equity, from NBFCs and from mutual funds; and the perception of a credit crunch emerged.

Reserve Bank's policy response: analytics

In view of the lower level of capital inflows, there were some pressures in the foreign exchange market. Consistent with its policy objective of maintaining orderly conditions in the foreign exchange market, the Reserve Bank sold foreign exchange in the market. While foreign exchange sales attenuated the mismatch in the foreign exchange market, these operations drained liquidity from the rupee market and accentuated pressures on the rupee liquidity. Accordingly, the Reserve Bank has been pro-actively managing liquidity since mid-September 2008 to assuage the liquidity pressures through a variety of measures. The cash reserve ratio (CRR) was reduced from 9 per cent (September 2008) to 5 per cent by early January 2009 injecting nearly Rs.1,60,000 crore of primary liquidity in the system. Fresh issuances under MSS were stopped and buyback of existing MSS securities was also resorted to inject liquidity into the system. Buybacks were timed with government market

borrowing programme. Following the amendment to the Memorandum of Agreement on the MSS, Rs.12,000 crore was transferred to the Government cash account from the MSS cash account. Reflecting the various operations, MSS balances declined from Rs.1,75,362 crore at end-May 2008 to around Rs.88,000 crore by end-March 2009. Other measures taken by the Reserve Bank in response to the global financial crisis include cut in the statutory liquidity ratio (SLR), opening of new refinancing windows, refinance to SIDBI and EXIM Banks, and clawing back of prudential norms in regard to provisioning and risk weights. The measures to improve forex liquidity included increase in interest rate ceilings on non-resident deposits, and easing of restrictions on external commercial borrowings and on short-term trade credits.

Simultaneously, in view of the adverse impact of the global slowdown on the domestic economy, policy rates were also cut - the reverse repo rate by 425 basis points from 9.00 per cent to 4.75 per cent and the reverse repo rate by 275 basis points from 6.00 per cent to 3.25 per cent. However, it may be noted that, at present, the reverse repo rate (the lower band of the LAF corridor) is the operational policy rate, whereas, in the period prior to mid-September 2008, the repo rate (the upper band of the LAF corridor) was the operational policy rate. The effective policy rate has, thus, seen a larger cut of 575 basis points from 9.00 per cent in mid-September 2008 to 3.25 per cent now. This is mirrored in the money market interest rates (weighted average of call, market repo and CBLO) falling from 9.3 per cent in September 2008 to 3.8 per cent in March 2009 (2.8 per cent as on April 22, 2009).

While in 2007 and previous years, large capital flows and their absorption by the Reserve Bank led to excessive liquidity, which was absorbed through sterilization operations involving LAF, MSS and CRR. During 2008, in view of reversal in some components of capital flows, fresh MSS issuances were initially scaled down and then reversed. The MSS operates symmetrically, and acts as a store of liquidity and hence has the flexibility to smoothen liquidity in the banking system both during episodes of capital inflows and outflows. The existing set of monetary instruments has, thus, provided adequate flexibility to manage the evolving situation. In view of this flexibility, unlike central banks in major advanced economies, the Reserve Bank did not have to dilute the collateral requirements to inject liquidity. LAF repo operations can, however, be limited by the excess SLR securities held by banks.

Furthermore, in view of the large government market borrowing programme, the Reserve Bank has been conducting purchases of government securities under its open market operations (OMO) as warranted by the evolving monetary and financial market conditions. On March 26, 2009, the Reserve Bank announced a calendar for OMOs for the first half (April-September 2009) of the fiscal year. Taking into account the expected unwinding of MSS securities of Rs.42,000 crore during April-September 2009 and other factors in view, the Reserve Bank announced that it intended to purchase government securities of Rs.80,000 crore under OMOs during the first half. The OMO calendar and amounts are indicative and the Reserve Bank will have the flexibility to make changes in the amount of OMO depending on the evolving liquidity conditions and its other operations. These actions reflect the need for close co-ordination between government debt management and monetary policy operations. This can be done smoothly in our case since the Reserve Bank also acts as the debt manager for the government.

Analytically, the various policy actions by the Reserve Bank since mid-September 2008 have been aimed at offsetting the contraction caused to its balance sheet due to fall in its foreign assets. Policy initiatives have aimed at expanding domestic assets on the Reserve Bank's balance sheet through open market operations, scaling back of MSS, refinance facilities, regular operations under LAF and special market operations for oil bonds. The central bank balance sheet is the ultimate source of money and credit creation and expansion in the economy. It is therefore important that the central bank balance sheet and the monetary base/reserve money continue to expand so as to meet the normal monetary requirements of a growing economy consistent with price stability. The reduction in CRR is expected to increase the money multiplier. The various monetary and liquidity measures, taken together,

have released actual/potential liquidity amounting to over Rs.4,90,000 crore since mid-September 2008 (about 9 per cent of GDP) (Table 8). In brief, the proactive policy initiatives to avoid contraction of the RBI balance sheet coupled with the increase in the money multiplier are aimed at ensuring non-inflationary growth of money supply in the economy to support the needs of the real economy. Despite large capital outflows and the concomitant sales of foreign exchange by the Reserve Bank and the depletion of its assets side, the Reserve Bank was able to substitute them with equivalent domestic assets so as to stabilise the growth of reserve money. Year-on-year growth in reserve money (adjusted for changes in the CRR) was 19.0 per cent at end-March 2009 as compared with 25.3 per cent in the previous year. Reserve money expansion, thus, remains consistent with the growth requirements of the Indian economy and long-run trends. In contrast to the trends in major advanced economies (discussed next), there has been no excessive expansion of reserve money. Hence, the issue of unwinding and exit of the current excessively accommodative monetary and liquidity policies, which is of extreme concern in the major advanced economies, is not relevant for us in view of the consistent growth in reserve money.

Table 8: Actual/Potential Release of Primary Liquidity (since mid-September 2008)

Measure/Facility	Amount (Rs.crore)
Monetary Policy Operations (1 to 3)	
1. Cash Reserve Ratio (CRR) Reduction	1,60,000
2.Open Market Operations	68,835
3. MSS Unwinding/De-sequestering	97,781
Extension of Liquidity Facilities (4 to 8)	
4. Term Repo Facility	60,000
5. Increase in Export Credit Refinance	25,512
6. Special Refinance Facility for SCBs (Non-RRB)	38,500
7. Refinance Facility for SIDBI/NHB/EXIM Bank	16,000
8. Liquidity Facility for NBFCs through SPV	25,000
Total (1 to 8)	**4,91,628**
Memo:	
Statutory Liquidity Ratio (SLR) Reduction	40,000

Monetary aggregates in major advanced economies: recent trends

In this regard, the recent behaviour of US monetary aggregates is interesting. With interest rates approaching near zero levels, the US Federal Reserve has resorted to aggressive quantitative easing as reflected in its expansion of balance sheet. In view of the continuing strains in the US financial markets, the Fed's major policy tools – lending to financial institutions, providing liquidity directly to key credit markets, and buying longer-term securities – represent a use of the asset side of the Fed's balance sheet, that is, they all involve lending or the purchase of securities. According to the Federal Reserve, these policies provide it the flexibility to continue to push down interest rates and ease credit conditions in a range of markets, despite the fact that the federal funds rate is close to its zero lower bound. The Fed prefers to dub this approach as "credit easing" – rather than terming it as "quantitative easing", the policy approach used by the Bank of Japan from 2001 to 2006. While both approaches involve an expansion of the central bank's balance sheet, in

a pure quantitative easing regime, the focus of policy is the quantity of bank reserves (liabilities of the central bank); the composition of loans and securities on the asset side of the central bank's balance sheet is incidental. In contrast, the Federal Reserve's credit easing approach focuses on the mix of loans and securities that it holds and on how this composition of assets affects credit conditions for households and businesses (Bernanke, 2009). The Bank of England is also now doing similar quantitative easing.

Reflecting the massive liquidity injection operations, monetary base in the US almost doubled between June 2008 and December 2008. Over the same six-month period, money supply (M2) and bank credit increased by only 6 per cent. M2 money multiplier correspondingly fell from 8.8 to 4.9 over the same period. Thus, even as the Fed expanded its balance sheet significantly, money supply and bank credit appeared to maintain their normal growth. This can be attributed to the fact that banks, rather than employing such additional liquidity pumped by the Federal Reserve into the system, have preferred to keep these funds as excess reserves with the Fed itself: banks deposits with the Federal Reserve jumped from around US $ 90 billion to US $ 839 billion between June and December 2008. Thus, all the efforts of the Fed to accelerate the pace of credit and monetary aggregates in the US economy have been largely offset by the increased holdings of commercial bank deposits with the Fed. As noted earlier, the strong growth in monetary base holds the potential to increase capital flows to the EMEs with lags. Since December 2008, there has been some moderation in the expansion of monetary base, and pick-up in money supply growth (Table 9).

Table 9: Recent Behaviour of Monetary Aggregates in the US

(US $ billion)

	Dec-07	Mar-08	Jun-08	Sep-08	Dec-08	Feb-09
1.Monetary Base	847	861	863	936	1669	1587
Of which:						
Bank Reserves	92	97	94	160	839	758
2. M1						
3. M2	7415	7599	7648	7782	8124	8238
4. Bank Credit	9206	9495	9403	9573	9975	9824
5. M2 Money Multiplier	8.7	8.8	8.9	8.3	4.9	5.2
Memo:	Year-on-year growth (per cent)					
Monetary base	1.2	1.5	1.4	9.9	97.0	85.2
M2	5.6	6.9	6.1	6.3	9.6	9.3

Source: Monetary Trends (April 2009) and FRED database, Federal Reserve of St. Louis.

Credit growth in India: perceptions and reality

In view of the changed environment due to capital outflows and risk aversion, there was a substantial shrinking of non-bank sources of funding in India – such as domestic capital markets, funding from NBFCS and mutual funds and external funding in the form of commercial borrowings and ADRs/GDRs (Table 10). Accordingly, there was a sudden rush for bank credit from the various sectors of the economy and there were perceptions of credit crunch. Moreover, in view of incomplete pass-through to domestic petroleum prices in the first half of 2008-09 (before the sharp correction in international crude oil prices), there was a large demand from petroleum companies for bank credit. For almost similar reasons, fertilizer companies also had a large resort to bank credit. Reflecting these factors, growth in non-food bank credit (y-o-y) accelerated to around 30 per cent by October 2008. Nonetheless, there was a perception that there was credit crunch during this period, which could be attributed to a large decline in non-bank sources of funding. The slowdown of the manufacturing sector

and a temporary build-up in inventories as well as liquidity problems faced by mutual funds and NBFCs during this period added to an increased demand for bank credit. At the same time, there might have been an increase in precautionary demand for bank credit in the last quarter of 2008 in view of the heightened uncertainties. The cumulative impact of all these demand pressures was reflected in acceleration of non-food bank credit from around 25-26 per cent in the quarter July-September 2008 to around 30 per cent in October 2008. Accordingly, a number of steps were taken by the Reserve Bank to make available adequate rupee and forex liquidity and to ensure adequate flow of credit.

Table 10 : Flow of Resources to the Commercial Sector

(Rupees crore)

	Item	2007-08	2008-09
	1	2	3
A.	Adjusted non-food Bank Credit Commercial Banks (1+2) @	4,44,807	4,14,902
	1. Non Food Credit	4,32,846	4,06,287
	2. Non-SLR Investments	11,961	8,615
B.	Flow from Other Major Sources (3+4)	3,35,698	2,64,138
	3. Domestic Sources	1,72,338	1,50,604
	4. Foreign Sources	1,63,360	1,13,534
C.	**Total Credit (A+B)**	**7,80,505**	**6,79,040**

Note: Data are provisional.
Source: Reserve Bank of India (2009b).

Non-food bank credit growth has, however, moderated from the peak of around 30 per cent in October 2008 to around 18 per cent by end-March 2009. This could be attributed to both demand and supply factors. The demand-side factors include the significant moderation in industrial activity over the past few months, the substantial correction in international commodity and raw material prices and the still elevated bank lending rates. On the supply side, some risk-aversion on the part of the banks could have reduced the availability of bank credit. The cumulative impact of deceleration in bank credit, relatively strong deposit growth and various measures by the Reserve Bank to increase liquidity is mirrored in the Reserve Bank's LAF operations – switch from an average net repo (injection) of around Rs. 45,600 crore in September 2008 to an average net reverse repo (absorption) of around Rs.43,000 crore during January-March 2008.

Stickiness in bank domestic and lending rates

While the policy rates have been substantially eased since early October 2008, some rigidity has been observed in banks' deposit and lending rates. Banks deposit and lending rates continue to be high, albeit some easing has been witnessed in the past few months. This rigidity could be attributed to a variety of factors. First, while headline inflation in terms of wholesale price index has seen a significant easing over the past few months (from around 12 per cent in September 2008 to 0.3 per cent by end-March 2009), it is largely due to the substantial decline in international crude oil prices and some reduction in domestic prices of administered oil products. Food articles inflation in the WPI continues to remain at high levels (6 per cent). Reflecting high food inflation, various measures of consumer price inflation – which have a relatively higher weight for food items *vis-à-vis* WPI – also remain at elevated levels (around 10-11 per cent). Second, the interest rate on small savings continues to be administered and any reduction in interest rates on bank deposits can make bank deposits

relatively unattractive, which could lead to some deceleration of growth in bank deposits. Third, the bulk of banks' time deposits continue to be at fixed interest rates. While interest rates on incremental time deposits are coming down, the average cost of deposits will remain high till the maturing deposits get renewed. This, in turn, constrains an immediate substantial reduction in lending rates. Thus, for a variety of factors, bank lending rates are expected to exhibit only a gradual softening, which impedes monetary transmission.

Tables 10: Measures of Inflation in India

(Per cent)

	March 2008	June 2008	September 2008	December 2008	March 2009
Wholesale price inflation					
All commodities	7.8	12.0	12.1	5.9	0.3
Of which:					
Primary articles	9.7	11.0	12.0	11.6	3.5
Fuel	6.8	16.3	16.5	-0.7	-6.1
Manufactured products	7.3	10.9	10.5	6.2	1.4
Consumer price inflation					
Agricultural labourers	7.9	8.8	11.0	11.4	10.8 (Feb)
Rural labourers	7.6	8.7	11.0	11.4	10.8 (Feb)
Urban non-manual employees	6.0	7.3	9.5	9.8	9.9 (Feb)
Industrial workers	7.9	7.7	9.8	9.7	9.6 (Feb)

V. Conclusions and lessons

The ongoing global financial crisis can be largely attributed to extended periods of excessively loose monetary policy in the US over the period 2002-04. Very low interest rates during this period encouraged an aggressive search for yield and a substantial compression of risk-premia globally. Abundant liquidity in the advanced economies generated by the loose monetary policy found its way in the form of large capital flows to the emerging market economies. All these factors boosted asset and commodity prices, including oil, across the spectrum providing a boost to consumption and investment. Global imbalances were a manifestation of such an accommodative monetary policy and the concomitant boost in aggregate demand in the US outstripping domestic aggregate supply in the US. This period coincided with lax lending standards, inappropriate use of derivatives, credit ratings and financial engineering, and excessive leverage. As inflation began to edge up reaching the highest levels since the 1970s, this necessitated monetary policy tightening. The housing prices started to witness some correction. Lax lending standards, excessive leverage and weaknesses of banks' risk models/stress testing were exposed and bank losses mounted wiping off capital of major financial institutions. The ongoing deleveraging in the advanced economies and the plunging consumer and business confidence have led to recession in the major advanced economies and large outflows of capital from the EMEs; both of these channels are now slowing down growth in the EMEs.

Monetary policy and asset prices

The conventional wisdom is that, even if the monetary authority can ex-ante identify an asset bubble, the typical monetary policy actions – changes of 25 or 50 basis points – would be

insufficient to stop the bubble. It has been argued that only substantial hikes in policy rates could prick the bubble but this would be at a substantial cost to the real economy. The influence of interest rates on the speculative component of asset prices is unclear from both a theoretical and empirical perspective (Kohn, 2008). In the context of the current global financial crisis, with deleterious impact on growth and employment and significant fiscal costs, the issue of relationship between monetary policy and asset prices needs to be revisited. It can be argued that the output losses of a pre-emptive monetary action might have been lower than the costs that have materialised from a non-responsive monetary policy. At least, a tighter monetary policy could have thrown sand in the wheels and could have reduced the amplitude of asst price movements. As asset prices bubbles are typically associated with strong growth in bank credit to certain sectors such as real estate and stock markets, pre-emptive monetary actions could be reinforced by raising risk weights and provisioning norms for sectors witnessing very high credit growth. For both monetary and regulatory actions to be taken in tandem, it is important that both the functions rest with the central banks. In this context, the recent trend of bifurcation of monetary policy responsibility from regulatory responsibility appears to be unhelpful (Mohan, 2006b). On balance, it appears that pre-emptive and calibrated monetary and regulatory measures would be better than an inertial monetary policy response. Such an approach can help in mitigating the amplitude of the bubble in both the upswing and the downswing of the cycle and contribute to both macroeconomic and financial stability. This view seems to be gaining ground. As the IMF in its recent assessment notes: “Central banks should adopt a broader macro-prudential view, taking into account in their decisions asset price movements, credit booms, leverage, and the build up of systemic risk. The timing and nature of pre-emptive policy responses to large imbalances and large capital flows needs to be re-examined” (IMF, 2009b).

It thus appears that the sharp swings in monetary policy, especially periods of prolonged accommodation, in the advanced economies are the underlying causes of the ongoing global financial crisis. While until recently, the “Great Moderation” since the early 1990s – reduction in inflation and reduction in growth volatility – had been attributed, in part, to the rule-based monetary policy, it now appears that that volatility in monetary policy can also have the side-effect of creating too much volatility in financial markets and financial prices, which can then potentially feed into the real economy with dangerous consequences, as indicated by the ongoing global financial crisis.

Management of capital flows by EMEs

Large volatility in capital flows to EMEs has been a recurrent feature of the global economic landscape since the early 1980s. Periods of large capital inflows, well above the financing need, have been followed by a sudden drying up of capital flows. Such large swings in capital flows over a very short period of time impose significant adjustment costs and large output and employment losses on the EMEs. As is well-known, capital flows reflect both push and pull factors. The push factors are critically dependent upon the stance of monetary policy in the advanced economies, a factor over which domestic authorities have no control. In view of these factors, it would be better for the EMEs to manage their capital account. Contrary to the theoretical expectation, empirical evidence does not find any support that free capital movement leads to higher economic growth. While benefits from external debt flows remain unproven, equity flows, especially FDI, are found to be beneficial. This suggests a relatively liberal regime for direct investment flows. Progress in the liberalisation of debt flows, especially short-term debt flows, by EMEs would depend upon greater macroeconomic stability, convergence of inflation levels and development of financial markets.

Issues in financial regulation

Finally, the current global financial crisis has again shown that markets can fail and such market failures have huge costs. The financial system is prone to excesses, given the high leverage of banks and other financial institutions. Within the financial system, banks are

"special", whether locally- or foreign-owned, because they effectively act as trustees of public funds through their deposit taking activities and are the lynch pins of the payments systems. The speed with which a bank under a run collapses is incomparable with any other organisation. A failure of one bank can have a strong contagion on the rest of the banks, even if they are healthy. In this age of globalisation, as the current crisis has revealed, the lack of confidence in banks in one country can also have a contagion on banks in the rest of the world. It is because of this that many governments in EMEs had to guarantee the deposits in their banking systems during the later part of 2008. Given the risks to financial stability, governments in advanced economies had to bail out their largest banks and financial institutions. The notion that markets will take care of weaknesses has once again been proven wrong. So far, the focus of banking regulation globally has been on capital adequacy. As this crisis has shown, liquidity issues are equally important and it is appropriate to note that, in India, we have focussed our attention on these issues as well. Given the complex inter-linkages between banks and non-banks and the move towards conglomerates, it is important that regulatory arbitrage loopholes are fixed to avoid regulatory arbitrage. It is in this context that we have tightened the regulatory regime in regard to NBFCs over the past few years in a phased manner. It is, therefore, important that banks and other financial sector players are well-regulated, while permitting them the necessary flexibility to grow and expand and meet the financing needs of a growing economy. A host of other issues such as accounting, auditing and compensation have also received attention in the aftermath of the global financial crisis. All these issues are engaging the active attention of policymakers and academics alike around the world (G-20, 2009). In view of the fast pace of technological and financial innovations, regulatory authorities would have to follow an approach that would have to be dynamic and adjust in response to changing economic environment.

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