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**Challenges in Achieving and Maintaining
Price Stability in Developing Economies**

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A noteworthy development during the 1980s and the 1990s is that central banks all over the world have been increasingly able to reduce inflation in their economies. While inflation has fallen in both the advanced and developing economies, the decline in the latter group has been quite striking. It fell from 56 per cent in the first half of the 1990s to six per cent in 2000-03. The decline is widespread. In Latin America and the countries in transition, inflation has fallen from 230 per cent and 360 per cent, respectively, during 1990-94 to less than 10 per cent in 2003. Out of 184 members of the IMF, 44 countries had inflation greater than 40 per cent in 1992. In 2003, this number fell to three (Rogoff, 2003). In advanced economies, inflation rates in the recent decade have averaged around 2-3 per cent per annum - consistent with the establishment of reasonable price stability. In a number of developing and emerging economies, although inflation rates are still somewhat higher than that in advanced economies, they are also quite close to what may be considered as price stability.

Against the backdrop of this welcome fall in global inflation, a key issue for the policy makers and the academic literature is: is the current era of low inflation a temporary phenomenon or is the reduction that has taken place during the 1990s a more durable phenomenon? This issue is quite contextual in the current environment with oil prices at record high and non-fuel commodity prices such as metals also at multi-year highs. Consumer price inflation, in fact, has edged up higher during the second half of 2005 and the issue of inflation expectations has been revived globally. Central banks in a number of countries

across the globe have accordingly resorted to pre-emptive monetary tightening. Nonetheless, a lot of uncertainty remains about the second-order effects of the recent oil price hikes.

These issues are all the more relevant for developing economies which are much more prone to repeated supply shocks and, therefore, inflation expectations are yet not anchored as firmly as in the advanced economies. Indeed, inflation rates in some developing economies in the current episode of oil prices has edged up sharply higher, thereby reviving the issue of the sustainability of the current low inflation regime. Thus, the title of this address is quite apposite.

In this address, I would touch upon these issues relating to price stability with a focus on developing countries. Section I of this address presents an analytical overview of key issues in price stability and explores issues such as: objectives of monetary policy; reasons for the rise in inflation during the 1970s and the subsequent fall in 1980s and 1990s; relevance of inflation targeting for EMEs; and, interaction between monetary and financial stability. In recent years, a lot of stress has been laid on the communications policy of the central bank in maintaining price stability and this issue is dwelt in Section II. Section III briefly touches upon the Indian experience. Section IV concludes.

I. Issues in Price Stability: An Overview

It is now widely agreed that the best way that monetary policy can contribute to sustainable growth is by maintaining price stability. Price stability does not mean a zero rate of inflation. Rather, price stability, following the US Fed Chairman Alan Greenspan, can be defined as a rate of inflation that is sufficiently low (but positive) so that households and businesses do not have to take it into account future

price developments in making everyday decisions. Maintenance of low and stable inflation has thus emerged as a key objective of monetary policy.

The case of price stability as the prime objective of monetary policy rests on the assumption that volatility in prices creates uncertainty in economic decision making. Rising prices affect savings adversely while they make speculative investments more attractive. The most important contribution of the financial system to an economy is its ability to augment savings and allocate resources more efficiently. A regime of rising prices, thus, clearly vitiates the atmosphere for promotion of savings and allocation of investment. Furthermore, the domestic inflation rate also has a bearing on the exchange rate of the currency. Besides, there is a social dimension, particularly for countries like India as inflation affects adversely the poorer sections of the society who have no hedges against inflation. On balance, the monetary policy decisions of most central banks are essentially environment-specific. Thus, just as price stability is of prime importance, growth is equally a matter of policy concern. Although the two objectives are mutually reinforcing in the long run, short-run trade-offs are often live and real, especially in case of structurally constrained EMEs, wherein, "a certain amount of target flexibility and balancing of conflicting objectives are unavoidable" (Jalan, 2000).

It needs to be stressed that price stability means a low but positive rate of inflation. Negative inflation rates and in fact, even very low rates of inflation (say, less than one per cent) can cause a severe downturn in the economy – as has been the case in Japan over the past many years. Deflation remains a cause of concern given the limitations imposed upon the conduct of monetary policy by the zero bound on

nominal interest rates and other nominal rigidities in the economy (such as downward inflexibility of wages and prices). Since interest rates can not fall below zero, the manoeuvrability available to the central bank in easing monetary conditions through reduction in interest rates gets lost. If shocks are only nominal and rigidities are symmetrical (of equal size both downward and upward) then near zero inflation may be optimal. However, the real world is marked by existence of nominal rigidities and zero inflation is not an optimal target (Akerlof *et al.*, 1996). Zero inflation is also not favoured because of the upward bias in measured inflation. Thus, central banks – whether inflation targeting or not - target a level of inflation rate close to two per cent so that monetary policy has the necessary flexibility to be effective in meeting its objectives. In other words, central banks behave symmetrically to deviations of inflation from their targets – both inflation above and below the target calls for appropriate monetary policy response. Illustratively, inflation during 2001-03 had fallen to such low levels in various countries following the global slowdown that it raised concerns of a generalised deflation. Aggressive monetary policy easing, however, prevented a generalised deflation. Subsequently, with signs of economic recovery and oil-induced inflationary pressures, central banks started withdrawing monetary stimuli in a measured manner.

A critical question that arises in this context is at what level of inflation the adverse consequences begin to set in. Empirical evidence on the relationship between inflation and growth in cross-country framework is somewhat inconclusive. In many cases, the sample includes countries with inflation rates as low as only one to two per cent as well as countries with inflation rates going beyond 200 and 300 per cent. It is, however, clear that growth rates tend to fall with high

inflation (Fry, Goodhart and Almeida, 1996). Nevertheless, even moderate inflation levels are often perceived to be worrisome by the policy makers because, inflationary pressures, if not held in check, can lead to higher inflation and eventually affect growth. It is in this context that the search for an optimal inflation rate remains the holy grail of modern monetary economics. Although recent cross-country studies on threshold inflation suggest that growth rates tends to fall with high inflation, the search for optimal inflation, at the end of the day, has to be country-specific and situation-specific (Sarel, 1996; Khan and Senhadji, 2001).

Global Inflation: Rise and Fall

The current phase of low global inflation is comparable with the pre-World War II phenomenon when inflation rates across regions were quite low. In the post-World War-II period, however, price levels showed a clear upward trend. In particular, the collapse of the Bretton Woods arrangement was associated with a surge in inflation during the 1970s. Sustained inflation is a relatively modern phenomenon (IMF, 1996). The international experience until World War II was one of long run stability in prices, with periods of inflation - generally war induced - getting offset by periods of deflation. Average inflation was lower in the first half of the 20th century than that in the second half of the century (Christiano and Fitzgerald, 2003). Before the 1970s, the gold-dollar nominal anchor of the Bretton Woods system acted as a constraint on accommodative policies as long as the US maintained low inflation, because of other countries commitment to maintain the exchange value of their currency. In the post-Bretton Woods era,

however, the freedom to pursue independent monetary policy emerged as a key factor contributing to high inflation during the 1970s.

Since the late 1960s, expansionary fiscal policies and accommodative monetary policies contributed to a strong cyclical upswing in the global economy creating supply-demand imbalances in many non-fuel primary commodities. Fiscal deficits in advanced economies expanded from 1.2 per cent of GDP during the 1960s to 3.4 per cent during the 1970s. Capacity constraints were already putting upward pressure on wages and prices and as the oil price shock hit in 1973, many countries pursued accommodative monetary policies to offset the adverse output and employment effects of the shock. Consequently, inflation surged to double digits in many countries including the US, the UK and Japan. In response, monetary policies were tightened but inflation persisted - the period of the 1970s has come to be called the 'Great Inflation'.

In addition to supply shocks, the high inflation in the 1970s is believed to have been due to lax monetary policies. Accommodative monetary policy during the 1970s could perhaps be attributed to the belief that there existed a long-run trade-off between inflation and output, *i.e.*, monetary policy makers could achieve permanently lower unemployment by accepting a little more inflation. Initially, the trade-off argument appeared to be holding true as unemployment fell and inflation rose only moderately during the later part of the 1960s. However, the developments during the 1970s showed no such trade-off and the actual outcome was stagflation - high inflation and high unemployment - validating the Friedman-Phelps critique which stressed no exploitable long-run trade-off. With the benefit of hindsight, it is now recognised that there is no long-run trade-off. The short-run trade-off is,

at best, temporary when the economy is adjusting to shocks to aggregate demand and that too as long as expected inflation is lower than actual inflation (Jadhav, 2003). Although a consensus has emerged on the basis of empirical evidence that in the long run there is no trade-off between employment and inflation, it is the inconclusive evidence in the short-run that poses a challenge for monetary management (Reddy, 2001).

The view that central banks made a deliberate attempt to exploit the inflation-output trade-off during the 1970s has, however, been questioned by recent research (Orphanides, 2003). This viewpoint suggests that inflation increased during the 1970s because of genuine mistakes by policymakers who overestimated the degree of productive potential in the economy. Overestimation of potential gross domestic product (GDP) prompted policymakers to provide excessive monetary stimulus resulting in the "Great Inflation".

Whatsoever may be the cause of high inflation during the 1970s, the period was also associated with exceptionally poor economic performance in terms of marked instability in output and employment in the industrial countries. Recurrence of high inflation and the cumulative worsening of government finances brought into sharp focus both, the limitations of fiscal activism and the heavy costs of monetary instability. Therefore, central banks in advanced economies - notably, the US - resorted to deliberate disinflation measures. Monetary policies were tightened from the late 1970s onwards to rein in inflation and inflationary expectations. Strong contractionary measures led to a global recession but subsequently inflation was brought down. Reduction in inflation was thus not painless and the transition to low inflation involved substantial costs in terms of output and employment losses (Ball, 1994). Inflation in advanced economies fell from an

average of 9.3 per cent per annum in the second half of the 1970s and 8.2 per cent in the first half of the 1980s to 3.6 per cent in the second half of the 1980s. The decline was facilitated by a significant easing in oil prices, setting the stage for broad-based economic recovery.

Inflation moderated further in advanced economies during the 1990s reflecting a institutional changes in the conduct of central banking and monetary policy on the one hand and enhanced competition brought about by forces of deregulation and globalisation on the other hand. A key factor that has contributed to low and stable inflation during the 1990s has been the institutional changes in the conduct of monetary policy - independent central banks, increased transparency and greater accountability - which has enhanced the reputation of monetary authorities and increased public credibility in their ability to deliver low inflation. Supporting economic policies - fiscal consolidation and structural reforms in the labour and product markets - also helped attain price stability. Efforts towards fiscal consolidation have been strengthened with clear-cut fiscal rules such as the Maastricht Treaty and the Stability and Growth Pact in the Euro area.

Globalisation is also believed to have contributed to low and stable inflation. Lower trade barriers, deregulation, increased innovation and greater competition induced by the forces of globalisation have contributed to growth in cross-border trade exceeding that in output. Production of tradable goods has expanded rapidly and domestic economies are, therefore, increasingly exposed to the rigours of international competition and comparative advantage (Greenspan, 2004). This reduces unwarranted price mark-ups. Competition among countries to attract and retain mobile production factors also forces

governments to reduce inefficiencies, ensure fiscal discipline as well as macroeconomic stability. The focus on macroeconomic stability is one of the factors that has led to greater central bank independence and, in turn, lower inflation (Wagner, 2001). Greater competition in the economy makes prices more flexible which reduces the impact of unanticipated inflation on output. This lowers the incentive for the monetary authority to systematically raise output above the potential (Rogoff, 2003). At the same time, there may be limits to globalisation and the speed of innovation since it is not apparent that globalisation will continue to progress at the same pace as seen in recent decades. Accordingly, as Fed Chairman Greenspan (2004) has recently observed, the structure of the transitional paradigm is necessarily sketchy as "we have not experienced a sufficient number of economic turning points to judge the causal linkages among increased globalisation, improved monetary policy, significant disinflation and greater economic stability".

Low and stable inflation has also been attributed to technological advances in architecture and engineering as well as development of lighter but stronger materials. These technological advances have resulted in "downsized" output, evident in the huge expansion of the money value of output and trade but not in tonnage. As a consequence, material intensity of production has declined reflecting, "the substitution, in effect, of ideas for physical matter in the creation of economic value" (Greenspan, 1998). This has contributed to the secular decline in commodity prices, notwithstanding short spells of spikes in these prices. Concerns over increasing commodity price volatility around this declining trend have, however, increasingly engaged monetary policy attention in the short-run (Mohan, 2004). Declining share of commodity

prices in final goods prices has been one important reason as to why consumer prices in most countries did not witness any sharp rise in the most recent ongoing episode of the surge in oil as well as non-oil commodity prices. The increase in commodity prices was reflected mainly in producer prices.

It is important to note that this moderation in inflation has not come at the cost of output volatility. Rather, the evidence suggests that output volatility has declined in the major advanced economies. For example, the standard deviation of growth rate of GDP in the US during 1984-2002 was two-thirds of that during 1960-83 (Stock and Watson, 2003). Relatively stable GDP growth in recent decades is attributed to a number of factors such as more effective monetary policy, the increasing share of services in GDP, better inventory management and improved consumption-smoothing on account of financial innovations and deregulation. Good luck -absence of major supply disruptions and other such macroeconomic shocks in the recent decades - is also considered as one of the contributory factors. According to estimates by Stock and Watson (2002) for the US economy, almost 20-30 per cent of reduction in output volatility can be attributed to improved policy, another 20-30 per cent is on account of 'identified' good luck in the form of productivity and commodity price shocks while the remaining part - a substantial 40-60 per cent - is due to 'unknown' forms of good luck (the regression residuals).

Dynamics of Inflation in Developing Economies

Inflation cycles in developing economies broadly resemble those in advanced economies. Inflation in the developing economies accelerated during the 1970s and the 1980s before moderating

dramatically, as noted earlier, from the second half of the 1990s. At the same time, in terms of magnitude, the developing world is not a homogeneous group. Countries in Asia appear to be an exception and the inflation rates in these countries have been closer to that of the developed economies, reflecting fiscal prudence and sound macroeconomic management. There is large and growing body of literature aimed at explaining sustained high inflation rates in emerging market economies (EMEs) especially in 1980s and much of 1990s. A review of this literature reveals the following major factors underlying inflation in EMEs:

First, large and persistent fiscal deficits, and monetisation of these deficits leading to excessive monetary expansion culminating into high inflation was a familiar story in several EMEs especially in the 1980s. While the theoretical links are intuitively quite appealing in this respect, the empirical evidence has been surprisingly weak. Fischer, Sahay and Vegh (2002) found that the relationship between fiscal deficits and inflation is strong only in high inflation countries – or during high inflation phases. The study did not find any obvious relationship between fiscal deficits and inflation for low inflation countries or during low inflation episodes.

Second, inflation in EMEs is often influenced by non-monetary factors, especially supply shocks. A recent study by Mohanty and Klau (2001) of 14 EMEs during the 1980s and 1990s demonstrates that exogenous supply shocks – especially to food and energy prices – play an important role in the inflation process since food and energy prices account for a larger share of the CPI in EMEs than in advanced economies. As such, a sharp increase in food and energy prices not only raises short-term inflation, but if the supply shocks are accommodated

by monetary policy, they can lead to demand-driven inflationary pressures, especially if inflationary expectations are fuelled.

Third, with greater flexibility in exchange rate regimes, the feedback from the exchange rate to domestic prices has emerged as an important source of inflation in several EMEs. Such a feedback might be greater in EMEs than in advanced economies (Ho and McCauley, 2003). In EMEs, the pass-through of a depreciation into domestic prices is often large because acceleration in import prices in the face of depreciation can fuel inflation expectations, which in turn, tends to depreciate the domestic currency further. Thus, EMEs are often subject to a vicious circle of depreciation and inflation.

As noted earlier, the global economy has experienced a distinct decline in inflation since around mid-1990s. A crucial question is how enduring is this welcome change in the environment? This question has become even more pertinent with inflation raising its ugly head yet again in many EMEs on account of supply shocks emanating from the latest round of oil-price rise. In this context, Domac and Yucel (2004) investigate the factors associated with the start of 24 inflation episodes in 15 EMEs between 1980 and 2001 and find that an increase in GDP growth above trend, agricultural shocks, and expansionary fiscal policy raise the probability of inflation starts in EMEs. These findings have very important policy implications for EMEs:

- (i) While the earlier research had been inconclusive in establishing a close link between inflation and output gap in the context of EMEs [IMF (1996), Lougani and Swagel (2001)], this study demonstrates that the linkage between economic activity above trend and inflation starts is quite robust in EMEs. This implies that central banks in EMEs should closely monitor the output gap

or the current and future path of aggregate demand in the economy.

- (ii) The study provides the much-needed additional empirical support concerning the importance of fiscal discipline for maintaining price stability.
- (iii) The study suggests that EMEs should endeavour to liberalise agriculture to reduce the volatility of food prices and central banks in these countries should make an effort *not* to accommodate such shocks as such accommodation can lead to demand driven inflationary pressures.
- (iv) The study also implies that EMEs with less stable external financing encounter difficulties in using the exchange rate to weather external shocks; and that flexible exchange rate regimes are viable in financially open economies provided external financing is not based on highly volatile capital.

During the 1990s, EMEs also witnessed a sharp welcome decline in inflation. A number of factors explain this decline. First, EMEs benefited from lower import prices due to low inflation that had already been achieved in advanced economies. Second, growing openness to trade and liberalisation fostered competitive pressures which contributed to lowering of inflation. Third, reduction or elimination of indexation of wage and financial contracts helped to reduce inflation inertia. Fourth, a reduction of one percentage point in fiscal deficit/GDP ratio reduces inflation by 2-6 percentage points (Catao and Terrones, 2003). In order to reduce inflation, macroeconomic policies in developing economies during the 1980s and 1990s, therefore, focused on fiscal consolidation and structural reforms to provide monetary

policy necessary flexibility in its operations. Indeed, fiscal deficits in EMEs are now less than half of their levels in 1970s and 1980s. This suggests that inflation could have declined by 5-15 percentage points on account of the lower fiscal deficits (IMF, 2002). Finally, as in advanced economies, improvements in the institutional design of monetary policy - increased central bank independence - with increased policy emphasis on price stability as an objective of monetary policy helped in lowering inflation in developing economies.

Inflation Targeting

Once price stability is accepted as a key objective of monetary policy, the immediate question is: how to achieve this objective? Central banks typically set “intermediate targets” in terms of macroeconomic variables – such as monetary targets, credit targets and nominal income targets - which can influence the overall objectives of monetary policy (Friedman, 1990). The choice of the intermediate target is thus critical. Central banks have experimented with various intermediate targets in order to influence the economy in general and prices in particular. In choosing appropriate targets, central banks generally keep three major aspects in view: First, the ability to influence the target variable in a reasonably predictable manner is important. Secondly, the target must exhibit a stable (if not constant) relationship with the end objective of monetary policy. Thirdly, the target must lead to the final objectives, even though feedbacks from developments in the goal variable to the target are also important. In the context of the growing emphasis on monetary policy transparency, the chosen target should also be clearly communicable to the public.

In the choice of the target, there is always a trade-off between 'controllability' of the target and the 'attainment' of the end objectives. The monetary policy transmission mechanism holds the key in determining the target. If variables at the beginning of the transmission process are selected (such as interest rate or base money growth), the target may be controllable but may not show a strong influence on the goal variable. At the other extreme, the final objectives (such as inflation or nominal income) that lie at the end of the transmission process could also be targeted. In such cases, however, the monetary authority may have little control over the target. The middle option could be to adopt intermediate targets (such as money growth or exchange rate) which could lie somewhere at the middle of the transmission process. The importance assigned to targets *vis-a-vis* objectives in the design of the monetary policy strategy is particularly critical because a mere achievement of targets while missing the objective could erode the credibility of monetary policy.

In practice, there has been a widespread use of either monetary or exchange rate targets as nominal anchors for policy. Since the mid-1980s, developments in financial markets and ongoing financial innovations brought about by financial liberalisation have rendered monetary targeting less effective. Exchange rate pegging aimed at controlling inflation by importing credibility from abroad (from a large successful low inflation anchor country) also turned out to be increasingly fragile, as countries opened their economies to external flows. The weaknesses with these intermediate targeting frameworks led to a search for alternative frameworks for ensuring price stability. One such framework that has become popular during the 1990s is 'Inflation Targeting'. Under this approach, central banks target the final objective

i.e., inflation itself rather than targeting any intermediate variable. Inflation targeting is considered as a mechanism to overcome inflationary bias in monetary policy through transparency, accountability and credibility. Inflation targeting is a framework for monetary policy characterised by the public announcement of official quantitative targets (or target ranges) for the inflation rate and by explicit acknowledgment that low, stable inflation is monetary policy's primary long-run goal (Bernanke *et al.*, 1999). Inflation targeting encompasses five elements: 1) the public announcement of medium-term numerical targets for inflation; 2) an institutional commitment to price stability as the primary goal of monetary policy, to which other goals are subordinated; 3) an information inclusive strategy in which many variables, and not just monetary aggregates or the exchange rate are used for setting policy instruments; 4) increased transparency of the monetary policy strategy through communication with the public and the markets about the plans, objectives, and decisions of the monetary authorities; and 5) increased accountability of the central bank for attaining its objectives. Inflation targeting is "a way of thinking about policy", rather than "an automatic answer to all the difficult policy questions" (King, 1999).

Inflation targeting does not suggest that central banks which adopt IT neglect developments in the real economy. In view of various supply shocks, all IT central banks, in practice, retain flexibility by attempting to meet the target on average rather than at all points of time. Various 'escape clauses' also provide maneuverability to these central banks. Thus, all central banks that have adopted IT follow a flexible version of the framework and not strict IT (Svensson, 1999).

According to its proponents, inflation targeting has several advantages as a medium-term strategy for monetary policy. In contrast to an exchange rate peg, inflation targeting enables monetary policy to focus on domestic considerations and to respond to shocks to the domestic economy. In contrast to monetary targeting, inflation targeting has the advantage that a stable relationship between money and inflation is not critical to its success: the strategy does not depend on such a relationship, but instead uses all available information to determine the best settings for the instruments of monetary policy. Inflation targeting also has the key advantage that it is easily understood by the public and is thus highly transparent.

The experience of inflation targeting countries to date appears to have been satisfactory. This is evident in the case of emerging countries starting from high levels of inflation as well as for industrial countries with lower inflation. But, the superiority of inflation targeting to other regimes remains contentious. In particular, it may be stressed that the decade of the 1990s has been one of a generalised fall in inflation worldwide. Even countries that have not adopted IT have seen a significant decline in inflation or have been able to maintain low inflation. There is no unique or even best way of monetary policy making and different approaches or frameworks can lead to successful policies by adapting better to diverse institutional, economic and social environments (Issing, 2004). Moreover, some evidence suggests that average inflation as well as its volatility in prominent non-IT industrial countries has, in fact, been somewhat lower than that in prominent IT industrial countries. IT is not found to have any beneficial effect on the level of long-term interest rates (Gramlich, 2003; Ball and Sheridan, 2003). The relevance of a single inflation target for a large economy, in

particular, is also debatable (Mohan, 2004). Regional disparities warrant different short-run monetary policy approaches to its objectives. Indeed, there is a growing sense that by the time the current phase of the global business cycle has run itself out, inflation targeting may not be seen to have stood the test of time. It is also argued that an IT framework reduces the flexibility available to a central bank in reacting to shocks (Kohn, 2003).

As regards IT in EMEs, although a number of EMEs have adopted IT, they face additional problems. These economies are typically more open and it exposes them to large exchange rate shocks which can have a significant influence on short-run inflation. EMEs may have to manage exchange rates more heavily since they are more commodity-price sensitive than advanced economies and commodity price fluctuations can wreak havoc with the forecastability of consumer price inflation (Eichengreen, 2002). An empirical evaluation of the experience of EMEs that have adopted IT confirms that IT is a more challenging task in such economies compared to developed economies that have adopted IT. While inflation in EMEs was indeed lower after they adopted IT, their performance was relatively worse *vis-à-vis* developed IT countries. Deviation of inflation from its targets is found to be larger and more common (Fraga, Minella and Goldfaj, 2003). The main strength of IT in EMEs is in its capacity to keep inflation under control once it is low (IMF, 2002). As with any other monetary regime, its success depends on the consistency and credibility with which it is applied. Erroneous or irresponsible fiscal, exchange rate and monetary policies will condemn to failure any monetary regime and inflation targeting is no exception (Loayza and Soto, 2002).

Monetary Stability and Financial Stability

With the growing domestic and external liberalisation, the conduct of monetary policy is facing new challenges from large and volatile capital flows. Moreover, the decade of the 1990s has shown that despite greater success on the price stability front, financial stability could not be achieved in many cases. Thus, the evidence of the 1990s shows that price stability need not ensure financial stability. Rather, price stability might engender future financial instability. Financial stability has thus re-emerged as a key objective/consideration in the conduct of monetary policy worldwide, although it is recognised that financial stability has always been an integral concern of central banks.

Financial crises in the last decade or so generally involved significant loss of output and employment (6 to 10 per cent decline in GDP during the crisis year, and as high as 50 per cent of annual GDP over a period of six years) (Goldstein and Turner 2003). Widespread financial instability undermines the role of the financial system in performing the primary functions, such as, intermediation between savers and borrowers with an efficient pricing of risks and the smooth operation of the payments system. When financial instability rises to a crisis proportion, it often brings in its wake a macro economic crisis or a currency crisis or both. As recent experiences show, such crises have grave implications for the most vulnerable sections of society who pay for their resolution through increased taxes, reduced public expenditure and unemployment. The costs involved in crisis resolution - particularly in restructuring the weak financial systems in the post crisis period - amounted to 10 to 30 per cent of GDP, which represented essentially additional crisis induced burden for the public sector. Large-scale social dislocations associated with crisis also threatened the governance

structures, particularly in the absence of effective social safety nets. This scale of welfare loss to the public justifies the need for public intervention. It follows that the central bank, being placed at the nucleus of the financial system, has a vital role to play in restoring and maintaining financial stability.

During the 1990s, the world economy has changed in a fundamental manner. The most significant among the changes is the liberalisation of capital movements by emerging market economies. On an annual average basis, aggregate net capital flows (official and private) to emerging market economies rose from an annual US \$ 47 billion during the 1980s to US \$ 155 billion a year in the 1990s. In particular, private capital flows rose sharply during the 1990s, displacing official flows as the major source of external financing by a large margin - private capital flows which averaged under US \$ 18 billion a year during the 1980s, shot up to as much as US \$ 134 billion per year during the 1990s. While the volume of private capital flows has increased spectacularly, so has the associated volatility. The recent financial crises have unambiguously demonstrated that the international financial markets tend to react exuberantly to successes, hesitantly to early warning signals and overwhelmingly to adversities. In other words, the capital account liberalisation, financial innovations, and technological advances have not only increased the scale of financial transactions significantly, but have also greatly enhanced the inherent risks associated with them, especially by making the transmission of panic easy and fast and often spilling over to other economies.

These developments, coupled with special characteristics of developing countries - such as, the relative thinness and opaqueness of financial markets, weaknesses in the financial sector and often, relative

inflexibility of exchange rates, make them inherently more vulnerable to external shocks, especially on capital account, thereby undermining financial stability. A typical chain of causation may run on the following lines: with capital account liberalisation, high quality corporate clients shift to lower cost borrowing abroad. Consequently, the asset portfolio of banks deteriorates and bank margins decline, thereby reducing bank profitability. This often induces them to enter into riskier activities. On the liability side, banks may be tempted to borrow short-term abroad, thus increasing their foreign exchange exposure. On the asset side, banks may be tempted to expand into domestic activities, *such as*, real estate and stock market, which are exceedingly risky (being backed by collaterals, which may be overpriced on account of asset price bubbles). It follows that absorption of international capital inflows in excess of the capacity of the financial system to efficiently intermediate them can be a harbinger of trouble. Rapid credit expansion outpacing the absorptive capacity of the real economy, especially with high concentration of credit to property sector and equity markets may be an invitation to a financial disaster. Inadequate or ineffective supervision, poor assessment and management of financial risks, and low capital base tend to make the underlying risks only greater.

Despite the widespread transition towards flexible exchange rates, many developing countries continue to carry the hangover of the earlier fixed exchange rate regime. As a result, exchange rate systems in several developing countries tend to be of the "soft peg" variety. This often creates the appearance of exchange rate stability, which encourages borrowers to ignore exchange risk and build up substantial unhedged foreign exchange exposure, thus adding to their vulnerabilities. An appropriately flexible exchange rate regime with a

tolerable level of volatility would have induced more explicit recognition of foreign exchange risk. Maturity and currency mismatch and exposure to increased credit risk can eventually lead to a deterioration in banks' balance sheets. When such weaknesses assume systemic proportion, banking crises are inevitable. The banking crisis can, in turn, trigger a currency crisis because it becomes very difficult for the central bank to defend its currency against a speculative attack. Any rise in interest rates to keep the domestic currency from depreciating has the effect of weakening the banking system further. Under the circumstances, when a speculative attack on the currency occurs, if the central bank raises interest rates sufficiently to defend the currency, the banking system may collapse. Once the investors recognize that a country's weak banking system makes it less likely for the central bank to take steps to successfully defend the domestic currency, they have even greater incentives to attack the currency because expected profits from selling the currency have now risen. Thus, with a weakened banking sector, a successful speculative attack is likely to materialise and can be triggered by many factors (Mishkin, 1999).

It is thus clear that challenges facing the central banks in maintaining financial stability are varied and increasingly complex. Price stability is a necessary but not a sufficient condition for financial stability. In order to maintain financial stability, central banks, therefore, while ensuring pricing stability need to take other pro-active steps such as improvements in financial sector regulation and supervision to ensure financial stability.

III. Communication Strategy of the Central Bank

In the context of maintaining price stability, especially with the introduction of inflation targeting framework, central banks now typically place a heavy emphasis on communication, transparency, and accountability. Indeed, the announcement of the inflation target itself was motivated in large part as a means of clarifying the central bank's objectives and plans for the public. It is now believed that the existence of clear communication channels between the central bank and the public is an important prerequisite for the smooth implementation of monetary policy. A sound communication policy strengthens the institutional independence of Central Banks and increases the effectiveness of monetary policy. In this regard, there has been an increasing trend for Central Banks to articulate their policies in a transparent manner over the past decade. However, there is no uniform code that exists for such communications; different Central Banks face different constraints in their efforts to convey the messages of policy. These constraints would also continue to pose further challenges to central banking in the future. Clear communication plays a critical role in a central bank's policy framework as it provides a medium for Central Banks to be transparent, accountable and credible. These three dimensions are interrelated and mutually reinforcing in enhancing the effectiveness of policy.

Greater transparency in monetary policy, while increasing central bank accountability and credibility, can reduce uncertainty about the policy environment. For its part, clear communication is critical to increasing transparency. It is important to note, however, that more information is not necessarily synonymous with greater transparency; redundant information can simply complicate the public perception

about policy. Thus, policymakers are faced with the arduous task of determining what information can convey their intentions and how best to communicate them.

Transparency and accountability are necessarily correlated as, to be accountable, a central bank has to be clear about what it does and why. Given the potential impact of monetary policy on economic welfare, Central Banks have a duty to be accountable to both the government and the general public. Being accountable promotes trust and imbues confidence in its actions, which is a natural corollary to the operational independence of a central bank. Similarly, greater transparency can help build credibility about policy actions. However, credibility can be established quickly if sufficient information is provided to allow the public to assess the consistency of policy plans and their execution with the objectives of the central bank.

Clear communication certainly makes monetary policy more effective by reducing the implementation lag. Experiences of the past few decades suggest that private sector expectations have a significant impact on the transmission of monetary policy. Well-anchored expectations can contribute to stability by making the economy more resilient to transitory supply and demand shocks thereby reducing the need for countercyclical adjustments. This means that Central Banks can best achieve their goals by setting short-term policy rates appropriately and by trying to shape public expectations in a way that reinforces their policy stance. Conversely, if policy actions are misunderstood, then the outcomes may be vastly different from what monetary policy would have intended.

One way a central bank can help stabilise the economy is by reducing the private sector's uncertainty about its policy framework

(Brainard, 1967). However, during the mid-seventies, it was theorised that “only unanticipated policies matter”; based on this viewpoint, central banks during the 1970s and the 1980s believed that they could seek a strategic advantage by withholding information about decisions and intentions. Over time, this view has been superseded by the belief that policies that are clearly explained to the public eliminate an extra source of uncertainty in private decision-making. Structurally, the rapid development and growing importance of financial markets in transmitting monetary policy signals have contributed to this shift, given the sensitivity of asset prices and yields to expectations about policy actions and announcements.

While it is generally believed that actions speak louder than words, when it comes to central bank communication, words can speak louder than actions if the central bank has a reputation for delivering what it promises. The central bank, by often making the first move in financial markets acts as a “Stackelberg leader”, in game-theoretic parlance, thereby setting the course for market expectations to adjust in the desired direction. In a sense, by clarifying its policy intentions, the central bank nudges adjustments in private sector expectations that get translated into forward-looking behaviour by the market consistent with central bank objectives.

The modalities of central bank communication can be largely divided into three channels. The first concerns the provision of detailed information on the proceedings and decisions reached during monetary policy meetings. The second concerns the provision of information on past and prospective economic developments and an assessment of their implications for future monetary policy developments. This ranges from purely backward-looking commentary to forward-looking forecasts and

informal hints in speeches about the future direction of policy. Finally, the third is regarding reports to, and reviews by, the legislature.

A key institutional change in the conduct of monetary policy flowing from this focus on communications and transparency has been a trend in transferring the decision-making powers from a single individual (*viz.* the minister of finance or central bank governor) to a monetary policy committee (MPC). This trend has gained momentum concomitant with greater emphasis on operational independence and inflation targeting. What is the link between the decision-making process and communication? Decision-making responsibilities, when delegated to a committee rather than to an individual, help to ensure that a wider variety of arguments are taken into consideration and may provide some protection against the adoption of idiosyncratic policies by individuals. In the same vein, the decision taken by a committee is likely to provide protection from personalised criticism of an individual.

Generally, the key decision of policy committees is what short-term interest rate to set. For this purpose, the minimum essential information is disseminated. This decision, along with a brief statement setting out the key reasons for the move, is now reported electronically, and hence simultaneously, to all in the markets and to financial journalists. Furthermore, the dates on which the policy committee meets to decide interest rates are now fixed and publicly reported in advance. This both increases transparency and helps to focus attention on the relevant considerations likely to affect such decisions. While policy committees may change interest rates in-between meetings on account of unexceptional circumstances, few (except the Fed) have availed themselves of this option in recent years.

In order to lessen the likelihood of leaks about market-sensitive decisions, the gap between the final decision being taken and its public release is kept short. Consequently, outline drafts of any supporting statement have to be prepared in advance. Pre-drafted statements can be, and are, revised in the light of the ensuing discussion and decision. However, the very short space of time can lead to difficulties in reaching agreement on how to present succinctly the key points. Nevertheless, if the main problem is shortage of time, a better solution is either to advance the start time of the meeting, or to delay the announcement, in order to give sufficient breathing space to discuss, amend and agree a supporting statement.

Minutes

Minutes, which provide the formal statement of what transpires during policy committee meetings, can be a central component of making the proceedings transparent. The fact that financial markets do react to the publication of the minutes indicates that these do contain significant extra information for markets (Clare and Courtenay, 2000). Certainly, the more complete is the immediate supporting statement accompanying the announcement, the less is the need for subsequent minutes. Yet, such a statement has to be largely prepared in advance, and can only be partially revised on the spot to take account of the actual discussion.

To some extent, the adoption of a specific inflation target is a commitment device, intended to constrain the actions of both politicians and the central bank itself. Its adoption may, therefore, imply some dissatisfaction with prior, perhaps more discretionary, monetary regimes. In so far as inflation-targeting countries begin with relatively

little inherent credibility, transparency may be a necessary concomitant in order to persuade outsiders that inflation really will be controlled (Blinder, 2004). It is, therefore, no surprise that two of the leading inflation-targeting countries, the United Kingdom and Sweden, are among those that publish minutes, both after only a short delay.

Communicating the central bank's views of future developments

Once, financial markets and commentators have learnt the outcome of the latest policy committee meeting, their immediate concern becomes: what will happen next? Outsiders can try to infer future decisions in at least three ways. The first is to examine what the central bank has written and said about current and past economic and monetary developments. After all, forecasts and the general assessment of future developments are largely derived from analysis and interpretations of current and past historical events. If an outsider knows how the central bank interprets the past, they can infer how it may respond to future events. Second, the policy committee, or one of its members, may give some direct indication on how the future is foreseen (e.g. 'the risks' or 'the bias'). Since no committee member can commit their colleagues to a future course of action though some committee members, e.g. the governor, may carry more weight than others – the question is: who should talk, to whom and how explicitly? Third, Central Banks can publish a forecast. Besides additional transparency, forecasts give a quantified indication of the way they see the economy developing, and hence of the direction and extent of adjustment in interest rates necessary to achieve their objective(s). In doing so, the central bank opens itself to *ex ante* accountability. For example, is its forecast as good as can be undertaken, and does it present a prospective

path for interest rates that can credibly achieve such objectives? Many features of forecasts (such as frequency, ownership, coverage, conditional assumption on interest rate and quantification of uncertainty), however, affect their information content.

Publications

Virtually all Central Banks now issue monthly or quarterly bulletins. They often contain reports of research on economic and monetary relationships carried out by the research staff. Internal academic-type research has become widespread in most developed countries and is published in a variety of outlets including Working Papers series. This combination of products provide general insights into central bank thinking but usually are too distant from the decision process to be a direct guide to observers.

Speeches

Policy committee members could delude themselves into thinking that their outside audience is listening attentively because of the analytical insights and wisdom that they are conveying. Much of the time, however, the interest in their presentation derives from their position as a voting member of the policy committee. Their words might provide a clue how they and their colleagues might vote at a forthcoming meeting. This raises several problems, particularly of revealing, or of appearing to reveal, information to a limited set of listeners, e.g. to a particular journalist, and therefore giving rise to a potential for insider trading and accusations of favouritism.

It is largely for such reasons that several Central Banks impose non-communicating, ‘black-out’ periods on members of their policy

committees, usually from shortly in advance of their meetings until after the release of statements or minutes. In general, the role of governor is such that some form of statement and/or press Q&A are unavoidable – e.g. while attending international meetings – that the black-out period does not apply to them. Even when a blackout is not in force, there remains a question about how far members of a policy committee should go to express an opinion about future developments that has not been agreed collectively. While there is no clear line, it is generally accepted that policy committee members can, indeed should, express their personal opinions about macro-economic trends. However, the nearer the subject approaches to the appropriate monetary policy reaction to such developments, the more cautious and reticent should any members, other than the governor, become.

Forecasts

A much more transparent, and coherent, way to present views about future economic developments is to do so in the context of a quantified forecast, and indeed an increasing number of Central Banks, especially those that target inflation, are now doing so. Publishing an inflation forecast additionally provides a degree of *ex ante* accountability by revealing quantified estimates of future developments which are of course may turn out to be incorrect.

Before Central Banks were given independence, the treasury would often argue that the internal forecast should not be published since commentators' attention would focus on differences and inconsistencies between them. After granting operational independence to Central Banks, this apparent problem has largely disappeared. The treasury assumes that the central bank will achieve its medium-term

inflation target at the (conditional) level of interest rates incorporated in the bank's forecast, and the bank usually assumes that the ministry's public expenditure plans and associated tax rates will be fully met. The forecasts have thus become complementary.

The weight attached to forecasts varies considerably between Central Banks. One issue is whose forecast is published and how. It can be the staff's or the governor's, but it can also be agreed upon by the policy committee as a whole. A staff forecast that policy committee members have no hand in preparing and can take or leave, is much less influential, intentionally so, in more federal systems, such as the Fed or the ECB, but there is probably no alternative to having a staff forecast, since the individual Governors will often come with their own separate staff forecasts. Here again, the nature of the decision-making process matters a great deal. In more individualistic policy committees, the members are unlikely to agree easily to a single collective forecast. It is somewhat curious that the two federal Central Banks, the ECB and the FOMC, which are relatively collegial in communication, are at the same time more individualistic in forecasting.

Communicating the central bank's views to the legislature

A key audience for any central bank is its own legislature. The need to justify its actions and decisions before a body that in most cases has the formal ability to change the central bank regime is a crucial part of the overall communication exercise. It is also a central aspect of ex post accountability. It helps to limit what has been termed the 'democratic deficit', whereby executive powers are delegated to an unelected body. In New Zealand, for instance, the Executive arm of Government can dismiss the Governor for failing to meet the terms of

his contract to hold inflation within certain stated limits, but this seems to be the exception rather than the rule in the developed countries.

In general, the form and design of a Central Bank's communications to, and appearances before, the legislature are determined by the legislature itself, not by the Central Banks themselves. While the formal nature of the communication process in this respect belongs almost entirely to the legislature, Central Banks can use this forum as 'neutral ground'. For instance, the Fed has made its Chairman's appearances in the US congress an important event. This not only renders the actions as transparent, it also assures the public about central bank accountability.

III. Price Stability: The Indian Experience

The basic objectives of monetary policy remain price stability and ensuring credit flow to support growth, even as the underlying operating environment for monetary policy has undergone a significant transformation in the face of structural reforms of the early 1990s. As a result of the growing openness and liberalisation, an increasing concern is the maintenance of financial stability. The basic emphasis of monetary policy since the initiation of reforms has been to reduce segmentation through better linkages between various segments of the financial markets including money, Government securities and forex markets.

The preamble of the Reserve Bank of India Act, 1934 enjoins the central bank "...to regulate the issue of Bank Notes and keeping of reserves with a view to securing monetary stability in India and generally to operate the currency and credit system of the country to its advantage...". Within this broad mandate, the Reserve Bank's monetary policy pursues the twin objectives of price stability and ensuring the

availability of credit to the productive sectors in the Indian economy. The emphasis between the twin objectives of price stability and growth has, however, varied over time depending on the evolving price-output situation. Initially, this was guided by the concept of developmental central banking crystallised in the First Five Year Plan, which required the Reserve Bank to create an institutional framework for industrial as well as rural credit to support economic growth. This reflected a widespread consensus that public investment could spur rapid growth. The concomitant deficit financing associated with public investment began to spill over into inflation and concerns began to be expressed over the inflationary consequences of the fiscal deficit during the 1960s. These concerns gathered momentum during the 1970s as inflation trended up to around nine per cent during the 1970s. Against this backdrop of persistent high inflation, the Chakravarty Committee recommended that price stability emerge as the "dominant" objective of monetary policy with a concomitant commitment to fiscal discipline (RBI, 1985).

The case for price stability as the dominant -if not sole - objective of monetary policy gathered momentum in the early years of financial liberalisation. Although it had to stabilise the economy in the face of the balance of payments crisis of 1991, the Reserve Bank emphasised that its ultimate mission was to steer monetary policy with its sights set firmly on inflation control (RBI, 1992). Price stability was seen to be critical to sustain the process of reforms (RBI, 1993). This acquired a new urgency as strong capital flows, after the liberalisation of the external sector, began to push inflation into the double digits. The very fact that inflation could be reined in during the second half of the 1990s by tightening monetary conditions -in turn, enabled by improved monetary-fiscal

interface, as discussed later - appeared to demonstrate the potency of monetary policy in ensuring price stability (RBI, 1997). In the latter half of the 1990s, as the economy slowed down, monetary policy pursued an accommodative stance with an explicit policy preference for a softer interest rate regime while continuing a constant vigil on the inflation front. The macroeconomic scenario began to change by the first half of 2004-05. In the face of sharp increases in international commodity prices and the persistence of a large liquidity overhang, the Reserve Bank reaffirmed that maintaining confidence in price stability was a continuing policy objective and subsequently, it has taken a number of calibrated monetary measures to stabilise inflation expectations.

Thus, as the above brief overview shows, price stability has been an abiding objective of monetary policy since the early 1950s although the success with price stability has varied over time in response to the evolving monetary-fiscal interface. It is only since the second half of 1990s that both inflation and inflation expectations have moderated substantially. There is very little disagreement about the fact that price stability should continue to be a key objective of monetary policy. But, as regards the recommendation of the Advisory Group on Monetary and Financial Policies (Chairman: Shri M. Narasimham) (RBI, 2000a) that the Reserve Bank should be mandated a sole price stability objective, there are, however, several constraints in pursuing a sole price stability objective (RBI, 2000). There are a number of “operational” constraints, which limit the ability of the Reserve Bank to adopt an explicit narrowly defined objective like an inflation mandate (RBI, 2000). First, as the Reserve Bank is also the manager of public debt, the monetary management function continues to get inextricably linked to the debt management function while steering the interest rates. Second, in the

absence of fully integrated financial markets, which remain still imperfect and segmented, the transmission channel of policy to the price level and output is rather weak and yet to evolve fully. Third, the high frequency data requirements including those on a fully dependable inflation rate for targeting purposes are yet to be met. Finally, given the recurrent supply shocks, the use of core inflation may not be appropriate. The loss of information content in the construction of core inflation and the relatively greater public acceptability of the headline inflation make the core measures useful only as indicators of the underlying inflationary process rather than as policy targets. Furthermore, in developing countries, a measure of core inflation excluding food items - which can account for more than half of the weight in the index - may not be very meaningful (Jalan, 2002).

Furthermore, with the opening up of the Indian economy and its growing integration, monetary policy had to contend not only with price stability but also to ensure orderly conditions in the financial markets. The growing integration of financial markets, while necessary for economic efficiency, posed challenges for monetary management in terms of heightened risks of contagion. Episodes of financial volatility, often sparked off by sudden switches in capital flows in response to various shocks - such as the East Asian financial crisis, sanctions after the nuclear explosions, downgrading of credit ratings, the meltdown of the information technology bubble and the September 11 US terrorist attacks - required a swift monetary policy response. The Reserve Bank, therefore, began to emphasise the need to ensure orderly conditions in financial markets as a prime concern of monetary management. Financial stability is now being recognised as a key consideration in the conduct of monetary policy, in terms of ensuring uninterrupted financial

transactions; maintenance of a level of confidence in the financial system amongst all the participants and stakeholders; and absence of excess volatility that unduly and adversely affects real economic activity (Reddy, 2004a).

Monetary management in India since mid-1990s has had to contend with vicissitudes in capital flows. With the phased opening up of the Indian economy since the early 1990s, there has been a sustained increase in capital flows and the balance of payments has recorded large surpluses. Since 1993-94, balance of payments developments have thus come to play a dominant role in the conduct of monetary policy. Net capital inflows to India have been largely stable, reflecting a prudent approach to capital account liberalisation with a focus on attracting stable capital flows. Nonetheless, there have been brief episodes of volatility in capital flows and these periods have been associated with volatility in the foreign exchange market. Overall, however, the past decade has seen a significant increase in capital flows and the balance of payments has posted surpluses. In particular, the Indian economy experienced large foreign exchange flows from 2001-02 onwards as capital flows were supplemented by the current account turning into a surplus. These large flows posed a challenge to monetary management, especially due to finite stock of government paper with the Reserve Bank for countervailing open market operations. A multi-pronged approach has been followed to manage the external flows to ensure domestic economic and financial stability. The key features of the package of measures include: liberalisation of policies in regard to capital account outflows; encouraging pre-payment of external borrowings; alignment of interest rates on non-resident deposits; and, greater flexibility in exchange rate. These measures have been

supplemented with sterilisation operations to minimise the inflationary impact of the flows and to ensure domestic financial stability. Operations involving sterilisation are undertaken in the context of a policy response which has to be viewed as a package encompassing exchange rate policy, level of reserves, interest rate policy along with considerations related to domestic liquidity, financial market conditions as a whole, and degree of openness of the economy.

The recent experience with exchange rates has highlighted the need for developing countries to allow greater flexibility in exchange rates but the authorities should also have the capacity to intervene in foreign exchange markets in view of herd behaviour. With progressive opening of the emerging markets to financial flows, capital flows are playing an increased role in exchange rate determination and often reflected in higher exchange rate volatility. Against this background, India's exchange rate policy of focusing on managing volatility with no fixed rate target while allowing the underlying demand and supply conditions to determine the exchange rate movements over a period in an orderly way has stood the test of time. A key lesson of the Indian approach is that flexibility and pragmatism are required in the management of exchange rate in developing countries, rather than adherence to strict theoretical rules.

In brief, the conduct of contemporary monetary policy in the Indian economy is based on a carefully crafted strategy. The strategy aims to balance the linkages between monetary policy, credit policy and the regulatory regime in a dynamic environment of structural transformation (Reddy, 2004). Monetary policy now simultaneously pursues the objectives of price stability, provision of appropriate credit for growth and increasingly, financial stability. While there are

complementarities between the objectives, especially in the long run, it cannot be denied that there are certain tradeoffs, particularly in the short run. In order to achieve its objectives, the Reserve Bank has, at its disposal, three instruments - monetary policy, credit policy and regulatory policies. At the same time, it is, however, not possible to compartmentalise the policy actions, especially as the instruments are also used interchangeably to serve different objectives.

As regards the operational conduct of monetary policy, the Reserve Bank had adopted a monetary targeting framework from mid-1980s till 1997-98, based on empirical studies suggesting the existence of a stable money demand. The process of financial liberalisation, which gathered momentum in the 1990s, however, necessitated a re-look at the efficiency of broad money as an intermediate target of monetary policy. Although most studies in India show that money demand functions have so far been fairly stable, it was felt that due to financial innovations emerging in the economy the dominant effect on the demand for money in the near future need not necessarily be real income, as in the past. Interest rates too seemed to exercise some influence on the decisions to hold money. The monetary policy framework in India since 1998-99 has, therefore, been guided by a 'multiple indicator' approach wherein besides monetary aggregates, information pertaining to a range of rates of return in different financial market segments along with the movements in currency, credit, the fiscal position, merchandise trade, capital flows, the inflation rate, the exchange rate, refinancing and transactions in foreign exchange – which are available on a high frequency basis – is juxtaposed with data on output and the real sector activity for drawing policy perspectives. The transition to a multiple indicator approach has been a logical outcome of

monetary policy reforms. It has provided necessary flexibility to the RBI to respond more effectively to the changes in domestic and international economic and financial market conditions. In a medium-to long-term perspective, the impact of money supply on inflation, however, cannot be ignored and for the purposes of policy, the Reserve Bank still continues to announce projections of money supply compatible with the outlook on GDP growth and expected inflation (Reddy, 2005). At the same time, it must be pointed out that the set of multiple indicators remains critically incomplete because of the paucity of data on the labour market in the Indian economy. Apart from the difficulties of collecting regular information on employment or wages in such a large and populous economy, it is not clear what the definition of employment should really be in a labour surplus economy with a large segment of the population self-employed on family farms. This effectively means that the Reserve Bank has to make monetary policy decisions without either estimating wages or employment. The process of monetary policy formulation, is, thus broadly driven by estimates about aggregate demand without commensurate information about aggregate supply.

The process of monetary policy formulation is essentially based on the information content of a large host of macroeconomic indicators - quantum and rate - spanning the entire domestic macroeconomy as well as international macroeconomic developments. An internal Financial Markets Committee (FMC), instituted in 1997, monitors market developments and recommends tactical operations for meeting the evolving situation in the financial markets on a daily basis. For this purpose, the FMC makes an assessment of market liquidity based on the evaluation of inflows and outflows from the Reserve Bank balance

sheet as a result of its operations with the banking sector, financial institutions and the Government (RBI, 2002). This is reinforced by inflation and growth forecasts produced by an Inter-Departmental Group. The Board for Financial Supervision (BFS), constituted as a Committee of the Central Board in November 1994 and headed by the Governor, is entrusted with the supervision of commercial and select co-operative banks, select financial institutions and non-banking financial companies. The Reserve Bank also draws policy inputs from the Technical Advisory Committee on Money and Government Securities Markets and the Standing Committee on Financial Regulation, which also includes external experts, as well as a number of working groups, again with external experts, appointed to look into specific issues.

Price Stability in India: An Assessment

Compared with many developing economies, the Indian inflation experience can be considered satisfactory, despite recurrent supply shocks and continuing fiscal imbalances (Reddy, 1999). This is attributed to relatively better monetary management coupled with judicious supply management through buffer stocks of foodgrains and imports of sensitive commodities which contained the adverse effects of supply shocks and reined in inflation. Nonetheless, inflation increased during the 1970s and remained high thereafter till mid-1990s. In the period since 1996-97, inflation has edged lower reflecting concerted policy efforts.

Annual rate of inflation measured by variations in the wholesale price index (WPI) over the past five decades averaged 6.6 per cent in India. Inflation accelerated during the 1970s due to both supply and demand shocks. During the 1980s, demand pressures emanating from an expansionary fiscal policy and its monetisation coupled with intermittent supply shocks kept inflation high. Inflation averaged 8.0 per cent per annum during the 1980s, somewhat lower than that of 9.0 per cent per annum during the 1970s. Fiscal deficit of the Centre widened from 3.8 per cent of GDP during the 1970s to 6.8 per cent during the 1980s. A large part of this burden was borne by the Reserve Bank - almost 32 per cent of the fiscal deficit was financed by the Reserve Bank during the 1980s (25 per cent during the 1970s). Monetised deficit almost doubled from 1.1 per cent of GDP during the 1970s to 2.1 per cent during the 1980s. Consequently, the net Reserve Bank credit to the Centre expanded by 20.0 per cent per annum during the 1980s as compared with 14.5 per cent per annum during the 1970s and this led to an acceleration in reserve money growth. Broad money growth could, however, be contained to rates lower than the 1970s, as a result of increases in cash reserve requirements. Exchange rate pressures also added to inflation.

The ability of the Reserve Bank to combat the growing inflation was constrained by the shrinkage in its armory of monetary policy instruments with the gradual withering away of financial markets since the 1960s. Of the major tools of monetary policy, the efficacy of the Bank Rate was increasingly limited by the extension of the administered interest rate regime - although it is doubtful if it was particularly effective even earlier given the lack of developed money markets - and the scope of open market operations was circumscribed by the

narrowness of the government securities markets. The Reserve Bank had to, therefore, repeatedly raise reserve requirements to contain the inflationary effect of deficit financing, pushing the combined statutory pre-emptions (along with statutory liquidity requirements) to over 60 per cent of deposit mobilisation by 1991, constraining banks' portfolio choices. This could not arrest the upward drift in the money multiplier to 2.7 during the 1970s from 1.9 during the 1960s, as the spread of branch banking in semi urban and rural areas pulled down the share of currency in broad money to 23.2 per cent as at end-March 1982 from 39.8 per cent as at end-March 1971.

Since mid-1990s, inflation in India has seen a significant downward shift. Inflation has over the past decade averaged close to five per cent per annum, notably lower than the outcome of the 1970s and 1980s. A number of factors explain the lowering of inflation and inflation expectations since mid-1990s. First, the Reserve Bank could largely contain money supply to levels consistent with its indicative inflation projections. This was despite a large order of capital inflows from abroad and the consequent build-up of reserves. The expansionary effect of large forex purchases was sterilised effectively by resorting to a number of steps, especially open market sales of Government securities and a judicious use of Liquidity Adjustment Facility (LAF). Second, the increased flexibility due to the improved monetary-fiscal interface and reforms in the Government securities market enabled a lower degree of monetisation of fiscal deficits. In particular, market-determined yields on Government securities encouraged banks to willingly hold Government securities and this reduced the pressure on the Reserve Bank to finance the Government. Third, large buffer stocks of foodgrains have provided cushion against undue pressures on food prices through timely release of

stocks. Fourth, the high level of foreign exchange reserves adds to comfort in supply management through imports of essential commodities. Adequate food stocks and foreign exchange reserves enabled not only the reduction in inflation *per se* but also contributed to lowering inflation expectations on a sustainable basis.

Although inflation is not targeted *per se*, monetary policy in India has been formulated with indicative projections about inflation consistent with growth for curbing inflationary expectations. The projected inflation rate was gradually scaled down to around five per cent in recent years from around 7-9 per cent during the early part of the 1990s which helped in anchoring inflationary expectations and improving policy credibility. Inflation rate of around five per cent appears to be consistent with various research findings on the threshold inflation rate for India. However, even a moderate inflation rate poses a dilemma in an open economy. If the domestic inflation rate of an economy, however low it may be, is higher than the average inflation rate of its trading partners, it puts pressure on the exchange rate. In this context, the question of simultaneous balance of the internal and external sectors becomes a major issue.

It is indeed creditworthy that despite sustained pressures from international crude oil and other commodity prices, inflation as well as inflation expectations in India have been well-contained. Year-on-year wholesale price inflation in India stood at 4.4 per cent at end-December 2005. The success in reining in inflation could be attributed to calibrated fiscal and monetary measures undertaken since mid-2004 to reduce the impact of imported price pressures on domestic inflation and to stabilise inflationary expectations.

The success with achieving and maintaining low inflation since mid-1990s has led to a number of positive developments (Reddy, 2004). First, there is virtually a national consensus that high inflation is not good and that it should be brought down. Second, inflation expectations have come down and, consequently, inflation tolerance has also come down. "The society, the economic agents and the market participants are now reacting to a lower headline inflation, which is a good thing because if we want a sustained strong growth, it is necessary to rein in inflationary expectations".

An overall assessment of monetary policy in India shows a number of positive achievements. As noted earlier, central banks today are not only concerned about price stability but also about financial stability. It is a matter of satisfaction that India has also been successful in maintaining financial stability reflecting a mix of prudent policies. As Dr. Y.V.Reddy, our Governor has recently observed (Reddy, 2005):

“First, compared to many developing countries, India has been able to maintain a moderate level of inflation. Historically, inflation rates in India have rarely touched double digits and when they did, it was the result of supply shocks from agricultural commodity prices or international oil prices.

Second, monetary policy has been reasonably successful in dampening the volatility of output and imparting to the economy a growing resilience. The trend rate of GDP growth has risen steadily to around 6.0 per cent for about 25 years, and India has emerged as one of the fastest growing economies in the world.

Third, monetary policy has been successful in ensuring financial stability in India through a decade and a half when frequent visits of financial crises led to debilitating losses in growth and welfare in large parts of the developing world. This period was also marked by pressures from within such as geo-political tensions, drought and international sanctions. While we might have enjoyed an element of luck, we believe that we also benefited from exercise of sound judgment and enhancement of skills at all levels. It is useful to note that the Reserve Bank has

been engaged in the development of sound and efficient financial intermediaries and markets so as to provide solid foundations for effective transmission of monetary policy.

Fourth, success has been achieved in turning around and strengthening the external sector. Restrictions on imports have been virtually abolished and current account convertibility has been instituted since 1994. The capital account is virtually open for non-residents. An exchange rate policy of focusing on managing volatility with no fixed rate target, while allowing the underlying demand and supply conditions to determine the exchange rate movements over a period in an orderly way, has stood the test of time. India's external sector management has been endorsed by the growing international investor confidence in the face of sub-investment grade sovereign ratings. Today, India holds the sixth largest stock of reserves in the world, sufficient to cover its entire external debt. Since 2002, India has turned creditor to the IMF and is engaged in pre-paying bilateral and multilateral debt."

IV. Concluding Observations

Recent movements in commodity prices led by record high international crude oil prices and sharp increases in metal prices has once again raised inflation scares in a number of economies, both advanced and developing. While headline inflation has risen, it still remains relatively muted compared to that in the aftermath of the earlier oil shocks. Nonetheless, the fear of second round effects of the oil price increase that has already taken place has the potential of igniting inflation expectations. The key issue that is a cause of concern to policymakers around the world is: whether success with low and stable inflation achieved during the 1990s will be maintained in the future? Perhaps, the answer appears to be in affirmative.

As discussed in the previous sections, there have been significant improvements in our understanding of the way monetary policy works, its efficacy and its limitations. First, it is now well-agreed that there is no

long-run trade off between price stability and growth. At best, there might be a short-run trade-off. And, any attempts to exploit this short-run trade-off to raise output above its potential can give only ephemeral gains. Second, in order to minimise the moral hazard of attempting to exploit such short-term trade-offs, the institutional design of monetary policy has undergone fundamental changes to impart a greater degree of independence to the central bank through a variety of techniques - instrument independence, greater stress on transparency, improvements in communication policy and especially, fiscal rules to limit fiscal dominance of monetary policy. A prudent fiscal policy remains the single largest pre-requisite for monetary stability. Monetary arrangements *per se* have only limited power to fix real problems arising from a fiscal regime inconsistent with the goal of price stability. The changes in the institutional architecture over the past two decades have attempted to provide greater operational independence to central banks in order to enhance their credibility. Credibility matters as actual inflation path is critically dependent upon inflation expectations. The effectiveness of monetary policy depends as much on the public's expectations about future policy as upon actual actions. Successful monetary policy, as Professor Woodford (2003) has aptly noted, is not so much a matter of effective control of overnight interest rates as it is of shaping market expectations of the way in which interest rates, inflation and income are likely to evolve over the coming year and later.

Advances in our understanding of monetary economics coupled with ongoing forces of structural reforms, liberalisation, deregulation and competition have held down consumer prices in the recent past, even in the face of unprecedented input cost pressures. I trust that these forces would help to contain inflation in the coming decades even as

monetary authorities will undoubtedly continue to face a number of challenges. In the face of these challenges, it would be the responsibility of central banks to keep inflation expectations under control. At the same time, the same forces of globalisation and deregulation pose new challenges to policy authorities. Boom-bust pattern associated with capital flows and sharp swings in exchange rates can pose serious risks to balance sheets of various players in the economy. Financial instability that may result from such episodes could threaten price stability. Central banks of today are, therefore, concerned with maintenance of both price and financial stability while stabilising output close to its potential. In the face of opportunities as well as newer challenges, central banks will continuously to need hone up their skills in order to meet their objectives. As our Governor has recently observed (Reddy, 2005):

“The conduct of monetary policy is getting increasingly sophisticated and forward looking, warranting a continuous upgradation of monitoring scan and technical skills. Flexibility and timeliness in policy response coupled with transparency and accountability hold the key to further enhance credibility. Above all, the monetary authority has to address dilemmas, which exert conflicting pulls at every stage, and blend the desirable with the feasible. We have to recognise that judgements are involved at different stages which call for both knowledge and humility”.

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