

III

FUNCTIONAL EVOLUTION OF CENTRAL BANKING

3.1 Central banks which began with the need for institutions that could serve as lender-of-the-last-resort to commercial banks and lender to the government, were later entrusted with the tasks of management of internal and external value of currency. Typically, central banks are now set up as entities that regulate financial institutions, maintain low inflation, a stable exchange rate and promote economic growth. They have helped economies to tide over business downturns, provided confidence to depositors and helped in avoiding banking crises; they have also bridged information gaps, undertaken policy-oriented research, built databases, disseminated data and information regarding monetary policy and the economy as a whole. Indeed, central banks have taken over a whole range of functions, becoming multi-tasking institutions that conduct monetary policy, regulate and supervise the banking system and perform a crucial role in the payment system (Jadhav, 2003).

3.2 This chapter is structured as follows: Section I sets out the evolution of theory and practice of central banking. Section II attempts to trace the evolution of the main functions of a central bank, *viz.*, monetary policy functions including, *inter alia*, price stability and exchange rate management, banker to the government, banker to the banks and promotion of financial stability. It also deals in detail the developmental functions undertaken by central banks in developing countries. Section III highlights the contemporary issues in central banking including independence, accountability, transparency and credibility of central banks. Section IV concludes the chapter.

I. EVOLUTION OF CENTRAL BANKING

3.3 The relevance and rationale for having a central bank is well accepted. Nonetheless, there has been a considerable debate over the decades whether central banks deserve to be established. An alternative regime was seen as a system of 'free banking' which refers to an arrangement where there is an absence of privilege for the central bank alone to print the notes and all banks are equally free to issue redeemable paper notes. The historical examples at this arrangement include Scotland (1716-

1844) and Canada (1817-1914), where free banking with commodity base money prevailed. In the US, before the Civil War, conditions almost similar to free banking existed. Australia, China, Colombia, Switzerland, France, Sweden, Spain and Ireland are some other countries where free banking prevailed, in parts, during the nineteenth century. Capie (1997) has argued that the need for a central bank is felt only when there is a banking system in place. He has argued that most central banks evolved in order to take care of actual or potential problems in the banking system.

3.4 Central banking was initially practiced with the help of a large number of informal norms, conventions and self-imposed codes of conduct. These were later formalised into theory and institutionalised into laws that apply to today's central banking institutions. These laws have been amended and modified periodically to suit the evolving financial structures in most countries. The practice of central banking revolves around the rules and discretions that underlie central bank operations. The theory of central banking thus is based on practical problems as they emerged over time. Theory has also in turn influenced the evolution of a set of best practices that have helped to resolve the dilemmas faced by central bankers so as to preserve their autonomy, shield themselves from political pressures and to ensure their accountability to the public. Such an exchange between theory and practice is the basis of their co-evolution.

3.5 The first central bank, the *Sveriges Riksbank*, was established in Sweden in 1668; and the second was the Bank of England (BoE), set up in 1694 under a Royal Charter. Most of the bigger European central banks were established in the nineteenth century, while the German *Bundesbank* and the U.S. Federal Reserve System in the twentieth century. Capie (1997) has pointed out that there were only eighteen central banks at the beginning of the twentieth century. According to de Kock (1974), the early central banks were established primarily to finance commerce, foster growth of the financial system and to bring uniformity in note issue. The Bank of England initially functioned as the banker and debt manager to the government. As a commercial bank, BoE also took deposits and issued notes. With the renewal of BoE's

charter in 1781, it was described as 'the public exchequer' and acted as the bankers' bank as well. In the nineteenth century, the BoE undertook the role of lender-of-the-last-resort, providing stability during several financial crises. The BoE was nationalised in 1946 and it remained the Treasury's adviser, agent and debt manager.

3.6 The *Banque de France* was set up in 1800 to restore confidence in the French banking system after the financial upheavals of the revolutionary period. The *Banco de Portugal*, which was established as a public limited company in 1846, was a note issuing commercial bank, whose main job was maintaining convertibility of its notes and making a profit for its shareholders (Reis, 1999).

3.7 In Germany, the *Bundesbank* was set up in 1957 by the *Bundesbank Law*. It had a predecessor known as the *Reichsbank* that was operational from 1876 to 1945. Unlike some of the other European countries where central banks were set up in the seventeenth and early eighteenth century, central banking *per se* came late to Germany, as a stable state came into existence only in 1871. One of the rationales for setting up a central bank in Germany was the desire to have a uniform system of coinage, weights and measures. The *Bundesbank* was a federal central bank that gradually helped to integrate its separate units. It was expected that the *Bundesbank* would reduce the multiple setting and integrate existing regulations across Germany. The *Bundesbank* accordingly created a fairly transparent monetary regime, provided an adequate base for dynamic economic growth and integrated the separate entities financially.

3.8 The Bank of Italy was founded in 1893 as part of the reorganisation of the Italian banking and monetary system that had reached the state of near collapse at the beginning of the 1890s. The fundamental task of the bank was to free itself from the problems inherited, primarily by cleaning the balance sheet and restoring a capital base. A far reaching objective of the reorganisation of the Italian monetary and credit system was to create a set of uniform rules and institutions that would place the Italian currency on a sound footing and prevent recurrence of crises (Gelsomino, 1999). The wave of bank failures and the need for a lender-of-the-last-resort also led to the establishment of the US Fed, prior to which public opinion in the US was greatly in favour of free banking.

3.9 While each country has had a unique experience in the evolution of its central bank, there

are some common features: whenever central banks were set up to tackle similar problems, their institutional structures were observed to be similar. Notwithstanding the diversity, there were certain developments affecting the functions, objectives and instruments of monetary policy of central banks all over the world. With the onset of the First World War, paper money issued by central banks replaced the full value metal coin money.

3.10 As notes became legal tender and ceased to be convertible into gold, the power of central banks over money supply increased and stabilisation policies became feasible. After the First World War, the role of central banks became even more important. Their role of supervising the business of private commercial banks was extended and lender-of-the-last-resort function to stabilise the banking system during financial panics was strengthened. The First World War also led to the central banks' increasing involvement in extending credit to their governments. In order to handle their new role as brokers for government debt, central banks were allowed to trade government paper in the open market and were entitled to develop open market policy instruments for fine-tuning of interest rates and for credit and money supply expansion. This gave rise to more discretionary powers to central banks to conduct their operations. Since 1933 in the US and shortly after the Second World War in Germany, central banks were empowered to change minimum reserve requirements, which constituted an important direct tool of monetary policy.

3.11 As financial systems developed, central banks had to reorient their policies and strengthen their roles in order to cope with the new challenges. During global crises such as the Great Depression of the 1930s, the mandate given to most central banks included monetary stability, promotion of full employment and maximisation of growth. The role of central banks was thus enhanced successively after every crisis.

3.12 The genesis of central banking is different between developed and developing countries. As a result, the role of central banks in developing countries of today is typically different from that of the developed country central banks when they were developing (Sayers, 1961; Chandavarkar, 1996). Whereas in industrial countries this purpose centred on the need to have a lender-of-the-last-resort, in developing countries such as India, central banks came into existence when banking was underdeveloped. In fact, the central banks were instrumental in influencing the spread of commercial bank networks. The very

purpose of existence of the central banks in several developing countries was developmental. Such central banks played a role of the 'facilitator'. The developmental functions of central banks are discussed in detail in Section II.

3.13 There is a marked difference between the central banks of older developing countries and those in transition economies. The older developing countries have been developing their systems and operating procedures gradually, whereas the transition economies have had the benefit of being late comers on the scene and have, therefore, been able to choose from a variety of frameworks and learn from the experiences of other countries. These countries have had the flexibility of adopting the latest frameworks (Mahadeva and Sterne, 2000). Central banks in these economies have been able to start on a clean slate and successfully graft systems from developed countries. On the other hand, the older developing countries needed frameworks compatible with their existing systems. Nachane (2005) has cautioned that merely grafting of the developed country models may not be suitable for such countries.

3.14 Central banks have evolved in accordance with the specific requirements of the economies in which they are situated and in response to the kind of demands made on them. Their roles expanded as the situation unfolded and theory of central banking began to emerge simultaneously. When the developed countries were developing, free market principles were the norm and their markets and institutions were evolving according to this norm. They had adequate flexibility to modify their systems over time, as financial markets grew more complex and banking systems expanded.

3.15 Developing countries on the other hand, had an arduous task of trying to telescope the process of growth while being constrained by the existence of underdeveloped markets. This 'constrained optimisation problem' has been more stringent for developing country central banks of today which try to relax these constraints proactively. The central banks in developing countries have had to struggle with shallow and segmented markets and they have often had to deal with situations of market failure and financial repression. For this, these central banks had to act at two separate levels. Their monetary policy was conducted with the help of direct or sectoral tools. Simultaneously they needed to make sustained efforts to develop their markets. Only when the markets were fairly developed they could move on to market based instruments. Developing country central banks

generally also had to deal with numerous constraints that stem from inadequate autonomy, e.g., the dominance of fiscal policy over monetary policy. Their role is often that of the facilitator who fosters development of the financial sector and this has shaped their present structure and functions. "Each central bank has a distinctive historical origin" and these "have influenced not only the tasks that these central banks perform today, but also the way in which they operate" (Jadhav, 2003). Thus, there is very little theory of central banking *per se*; most of it has evolved in the course of their operations. In other words, there has been a co-evolution of theory and practice of central banking.

II. FUNCTIONS OF A CENTRAL BANK

3.16 Central bank functions have evolved over time, especially after the economies encountered difficult periods or crises. These functions vary in nature and with the stage of economic development of the country where the central bank is situated, the nature of mandate for it and the degree of operational independence it enjoys. The functions of a central bank can be broadly categorised into monetary policy functions, banker to the banks, banker to the government and developmental functions. The functions of note issuance, maintenance of internal and external value of currency evolved as the key objectives of monetary policy. The task of promotion of growth was subsequently added to it. This set of functions became the core monetary policy functions. With the development of the financial sector, subsequently, lender-of-the-last-resort function grew to encompass the role of a regulator and supervisor. It has assumed wider objective of financial stability in recent years and includes allied activities pertaining to adoption of technology in banking. Many central banks were established predominantly to finance the activities of their governments. This function has been reviewed and many central banks have ceased to finance their governments in recent years. Central banks have assumed many new functions that focus on development of markets, institutions and communication policies.

Monetary Policy Functions

3.17 Monetary policy functions form the core of central banking operations and constitute the key functions of almost all central banks. Of these functions, currency management and maintenance of external value of currency were the predominant concerns of central banks in the early years of central

banking. The explicit concern for price stability is of relatively later origin, although the maintenance of external value and link to the gold standard effectively implied price stability.

Currency Issue and Management

3.18 Currency management is one of the most important traditional functions of central banks in most countries. Until the evolution of central banks private banks issued their own currency and there were often numerous currencies with varying degrees of acceptability. The task of currency issue was entrusted to the central bank so as to bring uniformity in note issue across the country and facilitate exchange. Central banks have continued to perform this function over the years. Currency issue was nationalised in many countries. This function grew in scope and the present task of currency management includes functions such as estimating the demand for currency, currency design, printing, storage, distribution and disposal of unfit notes.

3.19 Illustratively, the Bank of England has been issuing bank notes since 1694. These notes were originally hand-written. Although they were partially printed from 1725 onwards, cashiers still had to sign each note and make it payable to someone. Totally printed notes were put in circulation from 1855. The *Banque de France* was initially granted exclusive privilege to issue bank notes only in Paris in 1803 for a period of fifteen years. However, note issue privilege was extended to the whole of France in 1848. *Banco de Portugal* became a bank of the state in 1887 and was granted a monopoly over the note issue in Portugal in 1891. One of the reasons for establishment of a central bank in Germany was to have a uniform currency. Similarly, the Bank of Italy was also given the mandate of putting the Italian currency on sound footing. In the US, the currencies of Britain, Spain and Italy were used before and after the American Revolution. In 1789, the First Bank of United States was authorised to issue paper bank notes. The US Mint was established in 1792. As all chartered banks could issue money, there were 30,000 varieties of notes issued by 1600 banks in 1836. The Greenbacks were issued by the US treasury in 1862. The Federal Reserve was entrusted with the job of printing money in 1913 as part of the Federal Reserve Act. In fact, all over the world, only a few central banks do not perform this function. A prime example of this is the Monetary Authority of Singapore (MAS).

3.20 The monopoly power to issue currency is delegated to a central bank in full or sometimes in

part. The practice regarding the currency issue is governed more by convention than by any particular theory. It is well known that the basic concept of currency evolved in order to facilitate exchange. The primitive currency note was in reality a promissory note to pay back to its bearer the original precious metals. With greater acceptability of these promissory notes, these began to move across the country and the banks that issued the promissory notes soon learnt that they could issue more receipts than the gold reserves held by them. This led to the evolution of the fractional reserve system. It also led to repeated bank failures and brought forth the need to have an independent authority to act as lender-of-the-last-resort. Even after the emergence of central banks, the concerned governments continued to decide asset backing for issue of coins and notes. The asset backing took various forms including gold coins, bullion, foreign exchange reserves and foreign securities. With the emergence of a fractional reserve system, this reserve backing (gold, currency assets, etc.) came down to a fraction of total currency put in circulation.

3.21 The function of currency management takes different forms in the context of a developing economy. In most developed countries, a high degree of homogeneity in the society implies a homogenous pattern of currency demand which facilitates smoother currency management. On the other hand, in developing countries, significant diversity in socio-economic development across regions induces completely different currency preference of the public across regions and across income groups. This diversity entails dynamic and complex currency management tasks for central bankers. The challenges ahead of efficient currency management in developing countries have increased manifold by the existence of dirty notes in circulation, predominance of cash based transactions and low levels of automation. In recent times, however, innovations in technology have helped in improving the currency management (Udeshi, 2004).

Maintaining Internal Value of Currency

3.22 Instituting a medium of exchange is one of the oldest functions assigned to central banks. Arising from this core function is the monetary policy function of keeping inflation low in order to maintain the value of the medium of exchange over time. This function is still very relevant to modern central banks as can be seen from the widespread adoption of inflation targeting framework. There are distinct phases and

events in the history of achieving and maintaining price stability. Prior to the Great Depression, the *specie* flow kept the economy on the 'auto pilot' mode. The gradual replacement of the gold standard with pure fiat standards in the twentieth century recast the objective of central bank policy and required separate efforts to maintain price stability. Abandoning the gold standard led to losing the mechanism of automatic maintenance of the internal value (purchasing power) and external value (exchange rate) of currency. The maintenance of internal value of currency and its external value acquired a distinct two facet existence. This separation was useful as it provided flexibility to countries to pursue their own policies. However, abandoning the gold standard and the move over to the fractional reserve system increased the risks to price stability.

3.23 The most difficult phase in the history of central banks was the Great Depression. During this phase, the general value of currency in countries across the globe fell by one fourth. Output and employment fell sharply resulting in widespread hardships. Against this backdrop, in the General Theory, Keynes (1936) highlighted the role of fiscal policy. However, Friedman and Schwartz (1963) documented later that the money supply actually fell before the Great Depression. They put forth the hypothesis that the Great Depression of the 1930s was not the result of failure of monetary policy in principle but that it resulted from a fall in the supply of money- the result of a misconceived contractionary move by the central banks. Such a move was compounded by the waves of bank failures. So the Great Depression was seen not as a testimony to the limitation of monetary policy, but of limited foresight and action on the part of the monetary policy makers. Most central banks and governments inappropriately advised people to 'tighten their belts' during a period when spending was probably the only solution to counter deficient demand.

3.24 In the meantime, the Great Depression and the pivotal role played by the General Theory of Keynes had changed the scene irrevocably and the focus shifted from *laissez-faire* to intervention and discretion by governments. Keynes' work brought the focus on the fiscal aspects of economic policy. Keynes (1936) in General Theory, did not deal with price stability issues as in the Treatise (Keynes, 1930) wherein he had advocated price level targetting. The 'Keynesian' model in fact, had a gap in theory that was later closed by adding the Phillips Curve. The Phillips Curve notion that inflation could be traded-

off for additional growth was, however, short lived. Some counter evidence showed that at higher levels, inflation was detrimental to growth (Barro, 1995; Sarel, 1996). Nevertheless, in the short run the Phillips curve remained important (Fischer, 2005).

3.25 Domestic policy objectives have been centred on price stability goals for years and even today have remained the main pre-occupation of central banks. In the developing world, central banks have had an additional task as the governments expected central banks to use their seignorage to garner resources for faster development. There was often a conflict between functions of central banks, for instance, maintaining the value of currency conflicted with its function of being a banker to the government, especially in developing countries. These central banks had to manage very high levels of public debt and often used inflation tax that undermined their price stability objective. The need for a clear dialogue between the fiscal and monetary policy makers as regards the mutual consistency of their policies was recognised in developed countries. On the other hand, in developing countries there was less of such dialogue and the central bankers as debt managers often tried to keep interest rates artificially depressed in order to manage public debt. Inflation was then contained by other more stringent tools involving the use of direct instruments like reserve requirements or selective credit controls that led to financial repression.

3.26 Central banks in developing countries are typically required to facilitate large borrowing programmes of their governments. For this, they may impose high reserve requirements on the banking system to ensure that it remains a captive buyer of government securities, even if the interest rates on these borrowings are at sub-market levels. After some initial level of development, these central banks may take steps to ensure that this dependence of the government borrowing programme on the banking sector is reduced. In this direction, several steps need to be taken such as free market determination of interest rates on government securities and market-based procedures for monetary policy.

3.27 Maintaining the domestic and external value of currency is often addressed by deciding a nominal anchor. The choice of a nominal anchor or an intermediate monetary policy target has been a crucial issue. There was a general move in favour of monetary targetting during the late 1970s and the the 1980s. Thereafter, there has been an increasing trend towards adopting an inflation targetting framework.

Keynes advocated targetting the price level in the 1930s (Keynes, 1930). Sweden was the first to adopt it after the collapse of the gold standard. Yet the widespread acceptance of inflation targetting had to wait for over five decades before it became an important framework of monetary policy.

3.28 Central banks have often tried hard to anchor economic agents' expectations so as to keep inflation low. This involves understanding of the inflation process. The central bank needs to forecast inflation proactively with the use of leading indicators that may give them additional time to react. The extent of advance action required varies with the length of the transmission lag that differs from one country to another and even for the same country over time. Two main determinants of the price level are the price adjustment lag and the expectation lag. The former involves understanding the level of capacity utilisation in the industry, the level of inventories, supply of factors of production and flexibility in wages and prices. The expectation lag on the other hand, depends upon the product and factor price expectations, the nature of wage contracts in the economy and the credibility as well as inflation record of the central bank. If the central bank has a credible record it may be successful in stabilising inflationary expectations. The view about inherent stability of the system and the nature of the inflation process visualised, determines the role of the central bank. The monetarists believe that while the system is inherently stable, it has long, variable and unpredictable lags. This makes activist monetary policy amplify rather than dampen cyclical swings. Non-monetarists believe that because the adjustment process takes very long, the case for central bank intervention is strengthened (Humphrey, 1986).

3.29 Over the years, there is increasing realisation that printing more money or 'pump priming' the economy does not help in raising growth rates. In fact, a stable price level has become a pre-requisite of growth and trade. Accordingly, the maintenance of price stability through the conduct of monetary policy has become the prime objective of central banks. While inflation is not under the direct control of the central bank, it may use intermediate targets under its control to achieve price stability. In a market economy, the central bank may have the option of using market-based instruments for conduct of monetary policy. It may choose intermediate targets such as interest rates, exchange rates and monetary aggregates or take a more eclectic approach and consider a range of indicators (multiple indicators) that

can foretell the changes in output and prices. Through the 1990s, however, more and more countries have moved towards inflation targetting to announce their commitment to price stability. Monetary targetting depended for its success on the stability or at least the predictability of money demand. This intermediate target was abandoned by many central banks in the 1980s, as money demand functions became unstable, possibly due to the rapid pace of financial innovations. However, some central banks observed stable money demand and continued to use money targets for a number of years, for instance, Germany. In a survey covering 94 monetary frameworks in a diverse range of developing, transitional and industrialised economies, more than half of the respondents described the long-term goal of reducing or maintaining low inflation expectations as vital and this was more important to central banks than any particular target, formal or informal (Fry *et al*, 2000).

3.30 Under inflation targetting framework, the central bank makes an explicit commitment to conduct policy to meet a publicly pre-announced numerical inflation target within a particular time frame. Some countries have adopted point targets while others use a more flexible approach of targetting inflation within a band. New Zealand, Canada, the UK, Finland, Israel, Spain and Sweden were the early adopters of inflation targetting. The announcement of a specific inflation target provides a domestic anchor for policy and develops a measure of confidence in the conduct of monetary policy. Setting of explicit goals promotes accountability, making it more likely that the central bank will come close to the target. Inflation targetting may help in providing a clear path for the medium-term inflation outlook, reducing the size of inflationary shocks and their associated costs. Since long-term interest rates fluctuate *vis-a-vis* movements in inflation expectations, targetting a low rate of inflation would lead to more stable and low long-term rates of interest.

3.31 Central bank charters and official statements, typically, specify price stability as the goal of monetary policy. There is a subtle but important difference between specifying an inflation target and aiming at price stability. If the target is set for a limited period, for instance, two years in the case of the BoE, then an annual average inflation rate needs to be maintained. In this case, the central bank is required to compensate for failures to achieve its target in previous years. If the target is the price level or a path for the price level, the central bank does not have to compensate for missing the target in previous years (Fischer, 1996). Central banks, however, differ in

operationalising their anti-inflationary policies. Several central banks such as the Bank of Canada, the Bank of England and the Reserve Bank of New Zealand have adopted explicit inflation targetting recently. Others, whose credibility in fighting inflation is firmly established (for instance, the pre-ECB *Bundesbank* and the Swiss National Bank), did not set explicit inflation targets.

3.32 Countries need to fulfil some pre-requisites before adopting inflation targetting. The foremost of these are that the central bank should not be obliged to finance the government budget, must possess effective market determined monetary policy instruments, follow transparent practices and must be able to forecast inflation and be in a position to assess the impact of monetary policy on inflationary expectations. A country adopting inflation targetting has to select the relevant price index that is to be targetted. Some countries have adopted the Consumer Price Index (CPI) for this purpose. Alternately, they may target core inflation. Developing countries generally have relatively higher rates of inflation. In these countries predicting future inflation is often uncertain. Hence, missing an inflation target is more likely in developing economies than in the developed economies. Moreover, in many developing countries, central bank autonomy is restricted by the need to finance the fiscal deficit of its government.

3.33 Over the years central banks have increasingly sharpened their tools. Since monetary policy is always conducted in anticipation of various outcomes regarding output and prices, the forecasts of these are of great value to monetary policy makers. These forecasts are based on various types of models. Some central banks use specialised tools or models that forecast the performance of their intermediate targets like money growth or the exchange rate to guide their policy decisions.

3.34 Central banks have had to increasingly modify the definitions of money as a result of financial innovations and technological progress. Commercial banks create deposit money, plastic money as well as e-cash and e-money with multiplicity of products. E-money is monetary value units stored in electronic form on a device held by the consumers. Since e-money has all the features of traditional forms of money, it is an instrument like a cheque or a demand draft, which facilitates transactions actually denominated in the currency. With this, the task of managing currency and maintaining the price level has become increasingly difficult. This task is undertaken by the central banks, by proactively

estimating the demand for money, given the projected changes in income and interest rates. These relationships, however, are known to vary over time and sometimes become unstable for countries experiencing rapid transformation of their financial sector, thus posing greater challenges for central bankers.

Maintenance of the External Value of Currency

3.35 Central banks in many economies consider exchange rate management as a crucial function. Exchange rate management was the core concern for traditional central banks even in the seventeenth century. During the gold standard, the exchange rate was determined more or less automatically by the mechanism of *specie* flow. It ensured that the value of the currency rose with an increase in gold reserves and decreased with a decrease in the reserves. Such movements alongwith gold reserves were not necessarily conducive to output growth. Considerable efforts were required to maintain the parity. The appropriate level of exchange rate is a matter of detailed discussion. It could be a level, which is the so-called 'market determined' level, which may or may not confirm the Purchasing Power Parity (PPP). The PPP states that market forces will lead to equalisation of goods prices internationally, once the prices are measured in the same currency. This law of one price is subject of much empirical investigation. It does not have much empirical support as the real world exchange rate is influenced by numerous factors.

3.36 The role of central bank in managing the exchange rate cannot be underplayed. The rationale underlying the management of the exchange rate by the central bank has varied over time. Ranging from the old mercantilist doctrine, which stressed the importance of having an excess of exports over imports, there are various patterns to the management of the exchange rate. Some central banks keep exchange rates depressed (to boost the trade balance) while others target it at a particular point or within a range.

3.37 During colonial rule, international monetary arrangements focused on trade and investment and the exchange rate was always maintained at a level beneficial to the colonial power. The seventeenth and the eighteenth centuries saw the rise of the British Empire and hence of the Bank of England. As the pound sterling was the strongest currency, it became the most widely accepted international currency and remained the predominant anchor, in part because it was backed by gold. In the late nineteenth century,

many central banks maintained the gold standard, which was world's first fixed exchange rate. Under this system the exchange rate between two currencies was determined by the relative weight of gold that the currency could buy. This fixed exchange rate involved sacrificing autonomy of currency management and exchange rate management. It, however, provided a great deal of credibility to the country.

3.38 The First World War and massive defence expenditures saw a collapse of the gold standard. Reparation payments imposed on Germany by the Allies further distorted the international exchange rate order. The post-War boom posed the problem of intense inflation for most central banks of the world. The attempt in the post-War period to restore the gold standard at the pre-War parity was difficult to sustain. The debate whether the reintroduction of gold standard by the UK in 1925 triggered the Great Depression is still inconclusive. Several primary-producing countries devalued their currencies during 1929-30 in order to promote exports. Such competitive exchange rate depreciation for 'beggar-thy-neighbour' purposes was largely unsuccessful. The gold reserves of the UK were severely depleted and the Bank of England was not in a position to act as the world's banker. In fact, it had to abandon the gold standard in 1931. The US Fed followed in 1933. Monetary policy during this time became excessively rigid. Output and employment fell and several countries erected trade barriers.

3.39 By the end of Second World War, the US dollar emerged as the strongest currency. The Bretton Woods conference in 1944 and subsequent formation of the International Monetary Fund (IMF) saw the US dollar officially emerging as a pivot. One of the major objectives of the Bretton Woods system was maintenance of stable exchange rates. Members could keep their exchange rates within one per cent of the agreed par value. A member could propose a change in the par value of its currency only if it had a 'fundamental disequilibrium' in its balance of payments. Though the IMF peg was gold, in reality, countries pegged their currencies to the US dollar, which in itself was pegged to gold. The dollar became the medium of intervention in the foreign exchange market and countries started holding their reserves in terms of dollar along with gold.

3.40 This system worked satisfactorily till the devaluation of the pound sterling in 1967. Special Drawing Rights (SDRs) were introduced by the IMF in 1967 to revitalise the Fund and to manage global

liquidity wherein the deficit countries borrowed hard currency from the surplus countries. Eventually, the process of breakdown of the Bretton Woods system started with doubts being expressed regarding the US commitment to maintain the official gold price, which turned into reality when the US decided to sever the link between dollar and gold in 1971.

3.41 After the suspension of gold convertibility by the US, the Smithsonian Agreement, made by Group of Ten countries lasted only for 14 months till June 1972. This agreement also widened the permissible band of movements of the exchange rates to 2.25 per cent above and below the new central rates with a hope that this would reduce the pressure on deficit countries' reserves. Notwithstanding this new arrangement, the UK again faced balance of payment (BoP) problems and finally decided to allow sterling to float in June 1972. Switzerland and Japan followed and finally major countries tacitly agreed that the Bretton Woods system may be allowed to end. Accordingly, by March 1973, the world had moved to what is known as a 'non-system'.

3.42 In 1977 there were efforts to initiate a new flexible exchange rate system by the IMF members. This period also saw re-emergence of monetary policy initiatives. Trade barriers permitted the flexibility of determining both the exchange rate and domestic interest rate. However, this often led to higher inflation, as there was a loss of the nominal anchor that the exchange rate provided. Individual countries then tried to develop their nominal anchor in terms of the adoption of monetary and exchange rate targets. Currencies such as the French franc and Italian lira were pegged to the DM or pound sterling and gained from their anti-inflation credibility. This borrowed credibility was difficult to sustain in countries where the fundamentals had a different story to tell. This was again evident during the collapse of the Exchange Rate Mechanism (ERM) in the early 1990s. The experience of these countries suggested that a policy of tight control of the exchange rate by itself was not credible. If an economy was hit by a deflationary shock, central banks often abandoned the exchange rate peg and cut interest rates.

3.43 It is well known that fixed exchange rate imposes a constraint on domestic monetary policy. If its stance is significantly divergent from that of the anchor country, this may invite unwelcome capital inflows or induce capital outflows; some temporary solution is possible in terms of intervention by the central bank. The major episode of failure to maintain the value of currency in recent times was the East

Asian crisis in 1997. The crisis countries shared a common feature, *viz.*, the combination of a broadly fixed exchange rate regime and extensive capital mobility. Attention was also focussed on the plight of countries that had opened up their financial markets without reforming their financial sector. It turned out that the combination of a fixed exchange rate, full convertibility and independent monetary policy is not sustainable; this is called the 'impossible trinity' in literature.

3.44 In effect, exchange rates have generally been heavily managed and the fully flexible exchange rate remains elusive. It has been observed that most central banks intervene, although not always to defend any particular exchange rate. Calvo and Reinhart (2000) have illustrated the difference between the *de jure* and *de facto* exchange rate regimes, in that many countries that claim to be floaters have in fact been pegging their exchange rates. Even those countries that generally float the exchange rate are known to have intervened heavily in the exchange rate market to reduce volatility. The tendency of countries to fight shy of formally announcing the peg has been illustrated by Levy-Yeyati and Sturzenegger (2001). Such countries have the advantage of a stable currency without having to comply with the peg at all times.

3.45 Through the 1990s, the reform process has transformed many economies into vibrant and open ones. The free determination of the exchange rate is becoming increasingly complex for the emerging market economies. The matter is further complicated by the possibility of capital flows as a result of integration of global markets. The structural changes that have been undertaken in a number of these countries make it feasible to consider exchange rate flexibility or exchange rate targets or target zones. The decade of 1990s has, however, witnessed a number of currency crises in different parts of the world.

3.46 A currency crisis is a general loss of confidence in the currency. Theoretically, a currency crisis refers to a situation where market players' expectations that the prevailing level of a pegged exchange rate is unsustainable, gives rise to speculative activities that build up pressure, forcing official devaluation or revaluation of the currency. A currency crisis can also occur in countries where exchange rates are not fixed but allowed to float within certain broad bands. Therefore, many studies define currency crisis as a large nominal or real depreciation. This excludes devaluations, which are

undertaken with a view to aligning the exchange rate with the fundamentals. Currency crises are characterised by volatile exchange rates. Large devaluations are undesirable as they increase foreign currency risk, alongwith reduction in the information content of exchange rate signals and discourage investment. The potential of the central bank to avert a currency crisis depends upon the track record of the central bank that determines its credibility and its ability to contain crisis. The origins of the risk of currency crisis can also be found in contagion. The central banks always monitor the performance of their trading partners and economies similar to their own, in order to gain some early warning signals of impending distress.

3.47 The experience in East Asian countries that faced crises with the twin combination of a relatively fixed exchange rate regime and extensive capital mobility underscores the point that currency pegs become easy bait for the speculators. The prerequisites of a successful exchange rate peg are low capital mobility; high trade share with the country of anchor currency; similarity in the kind of shocks that these countries are prone to; and strong domestic fundamentals.

3.48 The 'First Generation Models of Currency Crisis' developed by Krugman (1979) and Flood and Garber (1984) depict a scenario where unsustainably high levels of budget deficit result in monetisation of deficit, leading to hyperinflation and collapse of the exchange rate regime, draining the official forex reserves. In contrast, the 'Second Generation Models of Currency Crisis' describe different scenarios for currency crises that are not driven by fundamentals. These include self-fulfilling crises resulting from investor pessimism, 'herding' by investors or 'contagion' where a currency crisis in one country triggers crises in similar countries with which they have some economic links. The 'Third Generation' models demonstrate that foreign exchange illiquidity alone can result in bank runs, which would then lead to the collapse of the currency regime (Chang and Velasco, 1999). Kaminsky and Reinhart (1999) show that banking crises are leading indicators of currency crisis. Notwithstanding the different causes and effects of currency crises, the role of the central bank is critical. It can coordinate with the fiscal authority and help to reduce monetisation of the fiscal deficit. The strengthening of regulation and supervision of commercial banks can help in averting bank related crises and Basel-II norms would be useful in this direction.

3.49 One solution for the problem of currency crisis is 'Currency Board', which is the modern day version of fixed exchange rate. Under the currency board system, the central bank makes a commitment to maintain a pre-determined fixed exchange rate. Ironically, such a system is put in place when there is loss of faith in the currency. The currency board, by removing the discretionary element from the currency issue, insures the currency against volatility and avoids domestic inflation. According to Hicks, the roots of currency board arrangements can be found in classical monetary theory developed by David Ricardo. "On strict Ricardian principles, there should have been no need of central banks and a currency board that works on a rule should do the job just as well" (Hicks, 1967). The first currency board was established in Mauritius in 1849 (Hanke, 2000). Since then, over 70 currency boards have operated in almost all parts of the world. Currency boards cannot substitute for sound fundamentals, since "a currency board is unlikely to be successful without the solid fundamentals of adequate reserves, fiscal discipline and a strong and well managed financial system, in addition to the rule of law" (Council of Economic Advisers, 1999). However, exchange rate targets and currency boards provide reasonable stability, transparency and low inflation when constituted in response to particular circumstances and for a period of time.

3.50 Whether the central bank can set both internal and external value of the currency is a pertinent question. With fully convertible capital and current accounts, the central bank cannot continue to have an independent domestic monetary policy. If the central bank targets the internal value of the currency (inflation rate) by setting the interest rate, it has to let the exchange rate float. However, the central bank can temporarily set both internal and external values of the currency by putting circuit breakers between domestic and international financial markets by imposing limits on foreign purchases of domestic assets and/ or sterilised intervention. But in the long run, the central bank may need to choose between targetting the domestic value of the currency and its external value (Hoggarth, 1996).

Promotion of Growth

3.51 Promotion of growth is at the centre of all economic policies. In the broad sense of the term promotion of growth could qualify as a developmental function universally performed by central banks. This function came to be entrusted to the central banks

alongwith the objective of promoting employment in the aftermath of the Great Depression. However, in most countries this function may be limited to facilitating a pro-growth atmosphere or ensuring that there are no bottlenecks to growth in terms of high cost of interest rates. In developing countries such as India the objective of promoting growth goes much beyond the mere maintenance of the reasonable cost of credit. In many cases, as the market mechanism is not fully developed, growth enhancing credit may not normally flow to backward sectors. The central bank needs to ensure that there is adequate credit supplied to all productive sectors and also to lesser developed regions. There is often a requirement to support growth in certain sectors that have priority over the others. In fact, there is much literature that supports the interventionist role of the central bank in its initial phases to take care of problems of different regions growing at uneven rates. In many countries the banking system, if not regulated to act differently, easily becomes an instrument for siphoning-off the savings from the poorer regions to the richer and more progressive ones where rates of return on capital are high and secure (Myrdal, 1965).

3.52 Besides taking care of sectoral growth through specific policies, overall credit needs to be enhanced without overheating the economy. Central banks promote growth and try to keep it on the projected trajectory. The concept of output gap is relevant in this context. Central banks try to use the interest rate or other monetary policy instruments to affect aggregate spending in order to minimise the output gap. The inflation-growth trade off, enshrined in the Phillips Curve relationship is relevant only in shorter run, researchers have pointed out that in the medium to long run, if inflation exceeds a threshold level then growth suffers (Barro, 1995 and Fischer, 1994). The central banks are therefore, required to maintain a delicate balance between growth and inflation.

Communication Policy

3.53 In the context of central banking communication, expressions like 'monetary mystique' (Goodfriend, 1985) and 'constructive ambiguity' (Corrigan, 1996) were assigned great virtue in the past. The present era of greater independence to the central banks, however, has also imposed great degree of responsibility on the central banks—a major one being the attainment of transparency in communication (Mohan, 2005). Furthermore, adoption of inflation targetting by many central banks has made communication an integral part of the policy making.

While earlier, in the absence of clear communication, market players were left to decipher the actions of the central banker to understand its objectives, in recent years, central bank communication has begun to play a crucial role in shaping the expectations of the markets. Central banks need to communicate to the public their perception of outlook, risk assessments and objectives. A host of issues emerge in this context. These include, how well the public and market participants understand delicate nuances of the announcements of central banks, as the effectiveness of monetary policy depends on their understanding and interpretation. Moreover, whether the mode and method of communication should be different for different agents is also a much-discussed issue. In recent times, innovations in information and communication technology have enabled more efficient communication from the central bank. However, it has also increased the possibility of spillovers across markets and contagion across countries. In this regard it is necessary to transmit the right signal to the markets so that it can instill confidence in the minds of the market players.

Banker to the Government

3.54 Most central banks such as Bank of England evolved from the need to have an institution that would look after the finances of their governments, lend to it or manage its public debt. Such central banks were entrusted with a variety of fiscal responsibilities and consequently evolved institutional structures to take care of all the associated requirements. In the initial years of central banking in developed countries and even now in developing countries, most central banks provided liquidity to their respective governments to smoothen the temporary mismatches between their revenues and expenditure, against government paper, on an *ad hoc* basis.

3.55 Traditionally, debt management of the government was handled by the central bank because of the complementary nature of monetary policy and public debt management. Government securities are useful in providing the central bank a tool for conduct of open market operations and a backing for its note issues. However, as monetisation of government debt adds to base money, restraining its supply is crucial for price stability. The central bank may try to neutralise the impact on government borrowing by offsetting the combined liquidity-creating impact of fiscal deficit by issuing new debt to the non-government sector. Even under these circumstances, empirical evidence suggests that a large fiscal deficit

exerts an upwards pressure on nominal and real interest rates and limits the degree of freedom for conduct of monetary policy.

3.56 Imprudent fiscal conditions may lead to expansionary monetary policy with inherent inflationary tendencies. Moreover, the policy instruments for fiscal and monetary policy implementation are also inter-dependent. Monetary operations are often conducted using government debt instruments and markets. Hence, the choice of monetary instruments and operating procedures can have an impact on the functioning of government debt markets. The efficient conduct of monetary policy requires an understanding of the government's short and long-term financial flows.

3.57 In recent years, the conflict between debt management and monetary functions is increasingly being discussed. As a solution, a number of countries have set up a separate debt office to implement the specialised debt management strategy. In choosing to do so, governments seek to emphasise the role assigned to debt management; to preserve the integrity and independence of their central banks to shield debt management from political interference; and to ensure transparency and accountability in public borrowing (Cassard and Folkerts-Landau, 1997).

3.58 Interestingly, the management of public debt has changed over the years. Starting from a situation where some governments were initially financed by private bankers, many central banks were established for performing the function of manager of public debt. Now, there is a move for central banks to desist from financing the government due to the widespread recognition of its inflationary implications. Besides this, managing government debt involves large co-ordination between fiscal and monetary policy and also requires sufficient independence on part of the central bank to deny the government the additional borrowings. The experience of many countries supports separation of the debt management function from the monetary policy function.

3.59 More specifically, if the central bank is entrusted with the debt management function, then it may face several conflicting objectives such as whether to tighten liquidity based on monetary considerations or ease out to ensure success of borrowing programme? Another area of grave concern could be when there is no separation of these functions, the central banks may be pressurised to artificially depress the interest rates in order to contain the interest payment of government debt.

Furthermore, as Alesina *et al* (1990) argue, a separate debt management authority is at an arm's length from the process of budget making and may not be tempted to sacrifice long-term debt management goals with short-term budget goals.

3.60 A growing trend the world over has been that of separation of debt management function from the monetary management function, though the actual structure differs across countries. While some OECD countries like Germany and the UK have opted for an autonomous debt management office to improve operational efficiency, some other countries like Australia, France and the US have sought to achieve a balance between public policy and financial management and have a separate office working under the aegis of Ministry of Finance (Singh, 2005). As regards the ideal model for developing countries, opinions vary. Some experts have argued that the separate office can be initially placed under the Ministry of Finance (Currie *et al*, 2003) while others have argued that in countries where fiscal deficits are high and financial markets are underdeveloped, a separate debt management office may be unsuitable for overall policy effectiveness of debt management (Kalderen, 1997).

Banker to the banks

3.61 Central banks were set up in many countries to perform the function of maintaining financial stability. The financial system in the early days was essentially a bank dominated system; hence financial stability was focussed on the stability of banks. Lender-of-the-last-resort function was the first financial stability function that central banks performed. This function was fairly limited in its scope, with central bank operations limited merely to the function of crisis management.

3.62 The role of central banks has expanded; it now covers oversight of other financial institutions as well as the entire payment system. The potential of any crisis to proliferate has increased several folds. For example a bank level problem can attain systemic proportions if depositors lose faith in banks in general after some bank failure, thereby precipitating large-scale withdrawals from sound institutions. Growing globalisation of banking means that such effects may spread across national boundaries. As time has progressed, the duties of central banks have not remained confined only to ensuring soundness of commercial banks but have extended to cover the financial system as a whole.

Lender-of-the-last-resort

3.63 There are different hypotheses about the origin and propagating channels of banking crises. A banking crisis is an event in which many or even all banks in the banking system face sudden demand from their creditors (Calomiris and Gorton, 1991). Given the multiple credit creation principle, it is not possible for any bank to handle such a run. At such times of crisis, apart from providing the routine liquidity to commercial banks through the discount window, the central bank may also bail out illiquid but not insolvent banks so as to avoid a generalised banking crisis. A banking crisis cannot be averted without an agency working as lender-of-the-last-resort.

3.64 In fact, many central banks were established specifically to take care of banking crises. This function of central banks is more than three hundred years old. As documented by Taylor (1997) when the Bank of England was established, the commercial banks guided by their profit motive always over issued currency. There were many circumstances when the banks could not even jointly honour demands for cash by the public and suspended convertibility. The Bank of England had to often come to the rescue of the commercial banks in order to convert their debt claims into cash. Similarly, the Federal Reserve in the US was established in 1913 primarily against the background of recurrent cycles of booms, busts and several banking crises. Though initially, there was no consensus on having a central bank, the bank panic of 1907 finally turned public opinion in the US in favour of having a central bank. However, viewed from today's perspective, the Fed then had a comparatively limited mandate of playing the role of lender-of-the-last-resort.

3.65 The origins of the concept of central bank as a lender-of-the-last-resort may be found in the works of Thornton (1802), though the term was coined by Baring (1797). This concept was further popularised by Bagehot (1873) and till date remains one of the cornerstones of the theory of central banking. Lender-of-the-last-resort function as asserted by Bagehot implies that in order to prevent bank panics, the central bank should provide liquidity to solvent but illiquid banks at a high rate of interest so as to avert a systemic crisis and ensure that no moral hazard problems occur. Thus through lender-of-the-last-resort function, the central bank may ensure stability of the banking sector, which is prone to disturbances, with a view to avoiding consequences to the real sector.

3.66 As far as the problem relating to moral hazard is concerned, the argument is that banks may take excessive risk if they know that they can borrow at a low rate during times of crisis. One view is that high interest rate is a penalty rate. It is argued that the rate should be raised early in the panic, so that the fine may be paid early. This guards against the possibility of borrowing out of precaution without paying for it and also ensures that the banking reserves are protected as far as possible. It was observed by Wheelock (2002) that the discount window loans in the US fell remarkably before the Great Depression as a result of direct (restrictive) action of discount window operations of the US Fed. Goodfriend and King (1988) remarked that Bagehot's doctrine was elaborated at a time when the financial markets were underdeveloped. They argue that although the central bank intervention in case of aggregate liquidity (monetary policy) is crucial with the development of sophisticated inter-bank markets, the scope for individual intervention (banking policy) has reduced. This argument insists that open market operations can provide sufficient liquidity, which is then allocated by the inter-bank market. The recent banking theories, however, have provided a counter argument to the above-mentioned criticism. Bryant and Wallace (1980) and Diamond and Dybvig (1983) show existence of the possibility of fragility of banks due to coordination failure among depositors. In light of this, lender-of-the-last-resort argument remains important with a view to maintaining financial stability in the economy.

3.67 The critical issue related to banking crisis is how the losses are ultimately distributed or borne in the economy. Since central banks are, in the final analysis, essentially a part of the government, the government may initially take responsibility for the losses, but they are eventually passed on to the society in the form of higher taxes or borrowings. How the bank losses are ultimately distributed to the system would depend on the combination of techniques adopted.

3.68 It is essential to address the root cause of bank losses, which is usually high non-performing assets. Often these can be found either in distortion in the industrial sector, fiscal imbalances or structural imbalances in the economy that require major policy changes. In addition to laying down a sound and competitive operating environment for banks, it is essential that a sound and stable macroeconomic environment is also built for the real sector to encourage competition and efficiency. Dealing with

bank crisis without tackling real sector distortions may invite a repeat crisis subsequently. As the banking system spread and took on additional functions, its risks increased several fold. There was hence a need to put in place sound regulatory norms.

Financial Sector Regulation and Supervision

3.69 The business of banking has a number of attributes that have the potential to generate instability. First, their intermediation activity results in leverage. The banks have inherent asset-liability mismatches with assets tending to have a longer maturity than liabilities. Since commercial bank's solvency depends on its ability to retain the confidence of both its depositors and the financial markets, lack of transparency of the bank defeats counterparties' efforts to rationally analyse a bank's strengths and weaknesses. Most importantly, banks' balance sheets and off-balance sheet positions can change more rapidly than those for the industrial and commercial companies (Ware, 1996).

3.70 Central banks have been taking an active interest in financial sector regulation and supervision with a view to maintaining financial sector stability. Regulation and supervision are important for effective management and market discipline as lax, poorly designed, outdated or inadequately implemented regulations may lead to financial instability. On the supervisory side, on the other hand, an overtly lenient policy may allow weak banks with distorted incentives to continue operating or may indirectly promote malpractices by insiders, eventually leading to a need for larger cleanup (Sheng, 1991).

3.71 The primary justification for banking supervision is that it limits the risk of loss to depositors and thus maintains public confidence in banks. While supervision naturally focusses on the individual bank, supervisors must also be alert to the possibility that problems in one institution may have wider, systemic repercussions on others or on the integrity of the payment systems (Ware, 1996). The focus of the supervisory function is mainly on investor protection activities, rules on the conduct of business and disclosure of information, micro-prudential supervision (on-site and off-site surveillance of institutions) and macro-prudential analysis.

3.72 In recent times, financial sectors in many countries have witnessed phenomenal growth with increasing liberalisation and globalisation. Some of the evolving characteristics of this sector include blurring distinctions between banks and other financial

institutions and a growing trend towards universal banking, accelerated flow of innovations in financial instruments such as derivatives and greater integration of financial markets across national boundaries. These changes have made the task of financial sector supervision more complex and dynamic. Accordingly, supervisors worldwide have shifted their emphasis to macro-prudential analysis, away from the micro-prudential supervision.

3.73 Bank supervisors seek to ensure that banks are financially sound, well managed and do not pose a threat to the interests of their depositors. In pursuing these objectives supervisors try to form three judgments: (i) how much risk is each bank undertaking? (ii) what resources, tangible (e.g. capital, liquidity) or intangible (e.g. quality of management and control systems) are available to manage that risk? (iii) whether the identified level of resources are sufficient to balance the risk? (Gray, 1996). The emphasis has been shifting in the recent period from the traditional Capital, Assets, Management, Earnings, Liquidity and Interest Rate Sensitivity (CAMELS) approach to a more risk-based approach. This approach has its basis in the recommendations of the Basel Capital Accord (1988). The Basel Committee provides a forum for regular cooperation on banking supervisory matters. In recent years, it has developed increasingly into a standard-setting body on all aspects of banking supervision. The framework developed by the Basel Committee involves identification of key risks, their level and the areas where these are likely to surface. After identifying these risks, a comprehensive supervisory framework with appropriate resources is assembled to mitigate the risks. The amount of resources required are dependent on the level and intensity of the perceived risks. More recently, a revised framework on 'International Convergence of Capital Measurement and Capital Standards' popularly known as 'Basel II' (November 2005) has provided supervisory regulations governing the capital adequacy of internationally active banks. Basel II uses a 'three pillars' concept - minimum capital requirements, supervisory review and market discipline. The first pillar provides improved risk sensitivity in the way that capital requirements are calculated in three components of risk that a bank faces, *viz.*, credit risk, operational risk and market risk. In turn, each of these components can be calculated in two or three ways with varying sophistication. The second pillar deals with the regulatory response to the first pillar, giving regulators more sophisticated 'tools' over those already available to them. It also provides a framework

for dealing with all the other risks that a bank faces, mainly reputation and strategic risk, liquidity risk and legal risk. The third pillar widens the disclosures that the bank must make. This is designed to allow the market to have a better picture of the overall risk position of the bank and to allow the counterparties of the bank to price and deal appropriately. Notwithstanding the continuing efforts at the international level to improve the systems for supervision, certain hurdles, such as lack of supervisory independence, political interference that prevents the exit of weak banks and financial institutions, lack of supervisory accountability besides fears of legal challenge, continue to pose problems in effective supervision.

3.74 Central banks have traditionally supervised commercial banks and other financial institutions. However, since central banks are also regulators and are consequently in a position to influence the behaviour of market participants, supervision conducted by central banks may pose a moral hazard problem. The idea of a separate supervisory authority has, therefore, gathered some momentum of late.

3.75 There are various arguments for having the supervisory tasks performed only by central banks. First, central banks collect enormous amount of data on the financial sector and real sector alike and are, therefore, in a good position to form relatively objective views on market expectations and the need to act when necessary. Second, most central banks provide payment and settlement services and are in a position to quickly monitor the liquidity position of the system. Third, being considered as a lender-of-the-last-resort, a central bank will get prior intimation about the borrowing requirements of the financial sector, which would provide clues about their liquidity requirements.

3.76 On the other hand, the main arguments for not locating the supervisory functions with the central bank are related to the moral hazard problem. The moral hazard problem arises when both depositors and creditors of institutions supervised by the central bank expect that in the event of failure of an institution, they would be salvaged and as such there is an incentive to take unwarranted risks. Apart from the 'moral hazard' issue, other problems such as 'Christmas tree effect', 'bureaucratic leviathan' and 'regulatory capture' also point out the desirability of separation of monetary policy and supervisory functions (Demaestri and Guenero, 2003).

3.77 In an effort to address the moral hazard problem, some countries have experimented with separation of supervisory function from the central

bank, the most notable being the United Kingdom where the Financial Supervisory Authority (FSA) was created in 1998. However, given the short time span that has elapsed after the formation of this body, it would be premature to judge the merits of such a separation (Vasudevan, 2003).

3.78 The supporters of a unified approach to bank supervision and monetary policy cite reasons such as 'economies of scale and scope', the 'prevalence of financial conglomerates', 'competitive neutrality' and 'transparency and accountability'. In the context of 'competitive neutrality', it is stated that the blurring of boundaries between financial products may imply that financial institutions offering similar products are supervised by different agencies. This may result in those institutions being subject to different regulations and requirements of information and consequently, facing uneven supervisory costs. This differential regulatory treatment and costs would lead to competitive advantages for certain institutions and incentives to engage in supervisory arbitrage. The definition of clear responsibilities ensures substantial improvement in the transparency and accountability with which the financial regulator operates, not only in terms of its performance relative to the statutory objectives, but also in terms of the regulatory regime, the costs of regulation and the application of its disciplinary policies.

3.79 Separation of supervisory functions and their location outside the central bank is possible as in the case of the United Kingdom. However, in this case the need for coordination in terms of policies, activities and information is immense. There has to be a clear understanding between the financial supervisory authority, the central bank and the treasury to establish a framework for cooperation between them in the field of financial stability. There is a need to set out the role of all institutions involved so as to ensure that each one is clearly accountable for its actions and has unambiguous and well-defined responsibilities. "There must be transparency in the operation of each institution and the Parliament; the markets and the public must know who is responsible for what" (Bank of England, 1997). There should also be regular information exchange to enable each institution to discharge its responsibilities efficiently. Any failure in coordination could possibly lead to systemic catastrophe.

3.80 Against the backdrop of blurring of distinctions between banks and financial institutions, the idea of 'super regulator' has gained momentum. The term 'super regulator' refers to a structure that combines

regulation in respect of supervisory responsibilities of banks, securities firms and insurance companies. The arguments in favour of a super regulator are economies of scale, increased accountability as well as avoidance of problems such as competitive inequality, inconsistency, duplication, overlaps and gaps. Critics, however, point out that the perception behind supervision of say, banks and mutual funds cannot be the same. While banks are regulated and supervised for prudential reasons, mutual funds may be supervised for ensuring adequate disclosures to investors. A single regulator may not be able to differentiate between the various risks and objectives of supervision (Goodhart *et al*, 1998). The key question in this regard is: given the crucial role played by the central bank in banking supervision, whether such a super regulator should be created within a central bank or outside it. Raj (2005) has pointed out that in certain emerging market economies, where the financial systems are not complex, the existing system of regulation by specialist regulators is working well. Hence there is no justification for evolving a super regulator within the central bank or outside it. Notwithstanding this extensive debate and continuing empirical work, the literature remains inconclusive so far.

Financial Stability

3.81 The concept of financial stability has been defined in a variety of ways. Mishkin (1991) defines financial stability as the prevalence of a financial system, which is able to ensure in a lasting way and without major disruptions, an efficient allocation of savings to investment opportunities. This broad definition is important because of its perception that an individual bank failure or every large swing in asset prices does not necessarily mean financial instability. However, from an operational viewpoint, other definitions seem more appropriate. Reddy (2004), for example, defines financial stability as ensuring uninterrupted financial transactions, maintenance of a level of confidence in the financial system amongst all the participants and stakeholders and absence of excessive volatility that unduly and adversely affects real economic activity.

3.82 Though the issue of financial stability is being discussed with renewed interest since the 1990s, it has a long history of debate. As noted by Tuma (2005), during the period of the gold standard, central banks merely performed the duty of establishing parity between bank notes and available gold and thus the money supply was exogenously determined. Under

the gold standard, since the central bank's ability to provide additional currency was constrained by its gold reserves, clearing houses were established to provide currency, in case of a run on any particular participating bank. After the Second World War, however, in the era of fiat money, the policy focus shifted towards the price stability issue, as discussed earlier. With the achievement of price stability during the second half of 1980s, interest in financial stability was revived. In recent years, with increasing globalisation, financial instability can spread easily from the national to international markets as happened during the 1997 East Asian crisis. The risk of financial instability increased several fold in the 1990s mainly due to fast paced technological innovations and the blurring of sectoral distinctions, which enabled various financial intermediaries to participate and compete in non-traditional spheres. This potential for significant international spillover of risks is a direct concern to the financial community. There have been various efforts at providing support to countries facing financial crisis. This support is expected to contain risks of contagion and help the countries to smooth out the economic costs of the crises over time.

3.83 Besides the innate risks of the banking system, there are other risks that may be encountered by the financial system. They arise due to weaknesses and failures in areas of corporate governance, lack of market discipline or lack of adequate coordination amongst multiple regulatory and supervisory bodies.

3.84 Since financial instability poses a severe threat to important macroeconomic objectives such as sustainable output growth and price stability, central banks have shown keen interest in the maintenance of financial stability. Most central banks keep a close watch on movements in national and international financial markets so as to provide emergency liquidity assistance, whenever needed. Moreover, monetary policy is implemented largely through operations in financial markets and the transmission of monetary policy to the real economy depends crucially on the smooth functioning of key financial markets and institutions. Yet another manifestation of the central bank's interest in financial stability stems from its role in the operation of oversight of payment and settlement systems.

3.85 Traditionally, it has been believed that monetary stability leads to financial stability. However, as noted by Udeshi (2005), the events of the 1990s show that it need not necessarily be the case. While there are complementarities between

these two objectives, especially in the long run, it need not hold in the short run. A stable macroeconomic environment - low and stable inflation, sustained growth and low interest rate - can generate excessive optimism about the future economic prospects and often the risks are downplayed. Accordingly, episodes of financial instability often have their origins in environment of macroeconomic stability or extended periods of high growth. The central bank, thus, must always remain vigilant.

3.86 In fact, the relevant question is not whether financial stability is an important issue for the central bank, but rather, how much weight the objective of financial stability should receive. Actual practices followed in different countries can be visualised as a broad spectrum – one end of which is the strict inflationary targetting regime, where financial stability concerns are only addressed during periods of crisis (Svensson, 2002) and the other end is the activist central banker with a pre-emptive approach of pursuing a financial stability objective (Borio and Lowe, 2002). The optimal approach, therefore, needs to strike a balance between these two extremes. Then, there is the problem of 'irrational exuberance'. As indicated by Greenspan (1996), "... how do we know when irrational exuberance has unduly escalated asset values, which then become subject to unexpected and prolonged contractions as they have in Japan over the past decade? And how do we factor that assessment into monetary policy?"

3.87 Notwithstanding the difficulties in understanding when an activist policy by the central bank is needed, there exist certain well-developed precautionary measures that help in maintaining financial stability of the economy. These include development of a set of standards and codes, prudential regulation, early warning signals, supervision of banks, compliance with international standards as regards capital adequacy norms, asset classification procedures and methods, income recognition principles, market valuation of assets and recovery mechanisms to reduce the non-performing assets of banks.

Payment System Functions

3.88 Payment and settlement systems are the backbone of the entire gamut of economic activities of any modern economy. While modes of payment and settlement date back to the early stages of civilisation including that of barter, the use of systems where banks have an active role is of relatively recent origin.

3.89 Perhaps the earliest settlement system can be traced to the evolution of what was the precursor to the modern day clearing house. The clearing house was actually a meeting ground for representatives of banks – for instance, the Coffee Houses in Britain some centuries ago – to exchange the cheques presented by their customers and which were drawn payable on other banks. What commenced as a facility for simple exchange of instruments quickly metamorphosed into a well-established regular place, which became the main nerve centre for facilitating settlements of funds. With the increasing need for quick settlements, the role of the central bank gained significance and they took upon themselves the function of conducting clearing and settlement operations.

3.90 The earliest forms of clearing and settlement through well-established processes were characteristic features of countries in Europe as also in America, where the central banks took over the function. The Bank of England, *Banque de France*, *Riksbank*, *Bundesbank* and even the Federal Reserve performed paper cheque clearing and accounting of the settlements of the member banks. Other countries too followed suit and the approach was similar – the central bank was designated as the manager of the clearing house and other banks could participate in these operations, provided they agreed to be bound by certain rules. In some countries, the role of the post office, which had a greater geographical reach, assumed significance and they were also allowed to participate in clearing operations. In fact, the earliest forms of credit funds transfers – the Giro system – evolved out of the postal system in Europe in the first half of the twentieth century, while bank fund transfers on Giro basis commenced operations from the mid-1960s.

3.91 Varied approaches have been adopted by central banks in respect of operations of payment systems. In the United States, for instance, the Federal Reserve Banks perform the role of providing services for processing of cheques, in addition to regulating the clearing function. Although the service is offered by the Federal Reserve System, this has facilitated competition, with many private operators offering similar services – both for paper-based cheques as well as for electronic transaction processing. In some of the other developed economies such as the United Kingdom and Canada, the central banks do not provide the services relating to clearing and processing of payment instruments; instead the function is delegated to private entities, although the governing body for such entities is the association or representatives of bankers. The same

approach has been followed in some of the Scandinavian countries such as Sweden for more than a century. In Asia, countries such as Singapore, Malaysia and Hong Kong are characterised by such systems not being operated by the central banks or the monetary authorities of these countries. The most significant factor is that this approach holds good for retail and generally small value transactions. Large value payment systems which are systemically important, such as the Real Time Gross Settlement Systems (RTGS) are typically operated and managed by the central bank on account of many factors including the central bank being the largest source of liquidity and the impact on monetary policy operations by these large value payment systems. However, generally the function of settlement for all clearing activities is invariably performed by the central banks to ensure that settlement finality is achieved and that settlement risk is mitigated to a very large extent.

3.92 Over time, central banks have migrated from organising clearing functions to management of macroeconomic requirements through the funds transfer processes; some of them have shed the clearing functions while retaining the settlement function. In these cases, the clearing functions are performed by entities other than the central banks with the central banks performing the role of regulating the clearing houses or processing centres in addition to performing the settlement function.

Developmental Functions

3.93 The tasks before the central banks in developing countries are enormous; first, they are constrained by the prevailing market conditions. Second, as leaders of the financial sector they need to adapt their policies to suit the changing structure of the economy and proactively modify the financial structure itself to promote development (Sayers, 1961; Chandavarkar, 1996). These developmental functions are undertaken by the central bank, 'while not ignoring their traditional tasks' (Brimmer, 1971). This makes the functions and goals before a developing country central banker much broader and challenging.

Sectoral Policies

3.94 When developing countries embarked on the growth path, they faced numerous constraints. Their markets were underdeveloped and their tools blunt; their governments resource-constrained but in a hurry to catch up in terms of growth. Central banks in these countries were also constrained in their operations as the transmission channels for conduct of monetary

policy were often non-existent or weak. This required them to operate separately in different segments of the financial markets. Central banks of developing countries have had to help their resource-constrained governments to raise the resources by way of public debt or through seignorage revenue and inflation tax. The public debt is often offloaded to a captive market of commercial banks through prescription of institutional holding of securities. In systems where markets are imperfect, differential interest rates are often set by the central banks for various purposes and according to the needs of borrowers and policies of governments. Aligning the central banks' policies to the governments' developmental goals is crucial in a developing country. For this purpose, central banks often take over developmental and promotional activities, which are of quasi-fiscal nature. Selective credit policies, for instance, micro allocation of credit, credit subsidies to preferred sectors are undertaken in order to support the governments' growth initiatives. However, all subsidy based quasi-fiscal regulations distort the markets and sow seeds of financial repression. Such discretionary support by the central bank is often implemented through the use of instruments such as refinance, but these enlarge the monetary base, credit multiplier and complicate monetary management. This dirigiste approach to economic management leads to crowding out of private enterprise as increasing share of credit flows are mopped up by the government and public enterprises (Meek, 1991). Moreover, these quasi-fiscal policies can affect commercial bank balance sheets by increasing the non-performing loans.

Development of Financial Market

3.95 Financial markets generally comprise the money market, bond market, foreign exchange market and capital market. In its main role of conducting monetary policy, the central bank uses an array of policy instruments that make an impact on the market. Monetary policy depends on markets for its transmission and therefore, their development is an enabling factor for a good monetary policy. In turn, monetary policy instruments (mainly interest rates) have a major impact on financial markets and institutions.

3.96 Given dependence of monetary policy on the financial structure of the economy, central banks in developing countries are concerned about macroeconomic management of the cost and supply of money and credit. In order to address the problems of the financial system, central banks in developing

countries have had to make specific efforts to replace informal credit by spreading the umbrella of organised credit. Expansion of commercial banks network is very useful in the mobilisation of savings and ensuring that adequate formal credit replaces any extant usurious relationships. The deposit insurance and credit guarantee schemes have had to be introduced to address the issue of market failure that is often encountered in a developing economy. Such schemes however, entail moral hazard problems as banks may take undue risks or lend without properly scrutinising proposals. Central banks in developing countries are required to strive hard for the efficient functioning of the financial sector. They are often involved in the designing of the financial infrastructure and making appropriate regulation for ensuring market discipline. They need to put in place 'the rules of the game' or an appropriate regulatory and supervisory framework, and upgrade it periodically with improvement in the financial sector.

3.97 In recent years, monetary authorities are increasingly using market based tools to implement monetary policy. This has promoted the development of financial markets. An important motive for reforming and developing the financial markets is to align them with international best standards. Well developed domestic financial markets are necessary to withstand disturbances and shocks to the domestic financial system during crises as was highlighted by the East Asian crisis.

3.98 Central banks are interested in fostering growth of financial markets in order to enhance efficiency of intermediation by reducing information, transaction and monitoring costs. Through the process of market-based incentives, efficient and well-developed financial markets contribute to lower macroeconomic volatility, more stable investment financing, higher economic growth and greater financial stability (Karacadag *et al*, 2003). Financial development increases availability of funds for new investments, which augments savings and reduces the need for discretionary credit assignments (Cho, 1986; McKinnon, 1993; Fry, 1995). The development of local financial markets also reduces the risks associated with excessive reliance on foreign capital, including currency and maturity mismatches (Prasad *et al*, 2003). In emerging market economies (EMEs), strong markets provide an alternative source of financing by attracting foreign investment in domestic currency denominated instruments and serve as an alternative source of external funding (BIS, 2001). This can help to relieve the domestic resource constraint.

3.99 Domestic financial market development helps to foster financial stability. The development of local markets can facilitate the issuance of longer maturity debt in local currency, a structure that mitigates external shocks. A deeper financial market also provides an incentive for development of hedging instruments, capable of reducing the effect of risk.

3.100 Institutional structures inherited from an era of control are often not suitable for a market driven environment. Furthermore, the structure may not be susceptible to quick reform (Turner and t'dack, 1996). Four common elements of institutional features hindering market development that have been identified are: high dependence on regulation, thin and oligopolistic financial markets, unhealthy banking system and excessive taxation. The relatively small size of financial markets observed in several countries also acts as a constraint for the monetary authorities as they are forced to choose between depth (volume of transactions) and width (variety of financial markets). Monetary authorities proactively play a market-making role, which may not be in harmony with the monetary policy objectives. Oligopolistic tendencies have hindered the development of inter-bank markets. Countries such as Jordan, Iceland, Finland, Jamaica and Malta had faced such problems while attempting to establish a money market (Turner and t'dack, 1996). A banking system characterised by high levels of bad loans, currency/interest rate mismatches between assets and liabilities and loss-making structures may also render the task of monetary policy making difficult as banks are major players in the financial markets and interest rate changes affect their balance sheets immensely.

3.101 Central banks in developing markets with commercial bank-centric financial systems need to reform the banking system in order to create a competitive banking structure alongwith simultaneous strengthening of the prudential and regulatory framework. The East Asian financial crisis, triggered essentially by the absence of sound banking structures and deep securities markets, has led to a growing realisation of the importance of financial market development, in particular, the securities market. There is now a better understanding of the policies and institutional frameworks best suited to create financial market stability in emerging market economies and changes in the international institutional environment have facilitated the adoption of such policies (Meyer, 2001).

3.102 As central banks are the apex financial institutions, they often foster financial market

development, steer the financial sector reform and ensure its adherence to international standards. The goals before the central banks in developing countries are broader and they often resort to interventionist or selective policies for fulfilling their responsibilities at least in the initial phases. Financial sector reforms in many developing countries typically, have been initiated by the central banks unlike the developed countries where they were generally a mainstream process. In most developing countries, reforms are a gradual process rather than being a one-time event; they spread over a decade involving several steps, the foremost of which is elimination of financial repression in the economy emanating from the regulation and regimentation of the financial system. The liberalisation and move towards the market oriented system is feasible with sustained efforts towards market making and efforts to foster a viable competitive financial system. Reform in financial sector in developing countries needs to be monitored after consolidating each step.

3.103 Central banks in developing countries have often taken lead in creating institutions specifically designed to provide development finance. The foremost task before these banks is to develop the banking system first and control it after that (Sayers, 1961). This developmental role also required the central bank to work towards promotion of institutions and instruments. There are some specific examples of institutions being built by developed country central banks. Illustratively, the Bank of England took the initiative in establishing specialised institution like Reconstruction Finance Corporation for supply of long-term capital for rehabilitation of depressed industries. The Reserve Bank of India also took many such initiatives in setting up development finance institutions such as the erstwhile Industrial Development Bank of India (IDBI) and National Bank for Agriculture and Rural Development (NABARD) (refer chapters IV and VI). Taking up of additional functions requires enabling legal provisions for the central banks. Not surprisingly, the statutes of newer central banks and monetary authorities established in the 1970s and the 1980s, with technical assistance from the IMF, such as Bhutan, Botswana, Fiji, Maldives and Swaziland have had several enabling provisions for promotional roles.

Policy Oriented Research

3.104 Every major central bank in the world has a strong research department. In fact, in the words of Cukierman (1992), "... a Governor who is backed by

an absolutely and relatively strong research department carries more weight *vis-à-vis* the treasury and other branches of government. The reason is probably that the Governor is perceived as a relatively impartial provider of reliable information about the economy. A possible indicator of the quality of the bank's research department is the quality of the annual report it produces."

3.105 In-house research activities are the backbone of central bank operations, as the time, direction and intensity of monetary and external sector operations are based on modelling exercises, past trends and future expectations, analysis and deductions carried out by the research department. As mentioned by Goodfriend *et al* (2004), "Models for policy evaluation are best produced internally by staff economists familiar with the policy process, the relevant institutional knowledge and the incentive to do the job reliably and thoroughly".

Dissemination of Information

3.106 Developing countries typically have a poor database. Accordingly, central banks have often taken over function of compilation of a comprehensive database comprising monetary, financial and balance of payments data to facilitate macroeconomic research. In addition to the surveillance of the banking and financial system including credit card companies, semi-formal and informal finance and guarding the interest of users of banking and financial services, central banks in developing countries attempt to help the domestic commercial banks to adopt better practices in data dissemination and sharing of information.

3.107 Going beyond these specific issues, central banks as institutions have a broader responsibility for their countries' financial systems and towards their economic agents and to the common man. When there are some economic agents more informed than the others, then there is an absence of level playing field between them. In order to avoid a situation of information asymmetry resulting from different levels of expertise at having access to and interpreting information, the central bank provides information through its publications and website. By making the information available, it provides a public good. In many countries there have been special efforts at protecting customers from deception by dissemination of detailed information of banking and non-banking institutions as well as an analysis of state of the economy. In this respect, the central bank's role in financial inclusion is pertinent. Leeladhar (2005) has

defined financial inclusion as "delivery of banking services at an affordable cost to the vast sections of disadvantaged and low-income groups. Unrestrained access to public goods and services is the *sine qua non* of an open and efficient society".

Coordination and Cooperation

3.108 In developing countries, the central bank is typically the external financial relations agent for the country. It is involved, alongwith the government, in interacting or negotiating on behalf of the country with agencies such as the International Monetary Fund (IMF), Bank for International Settlements (BIS), World Bank and Asian Development Bank (ADB). Moreover, central banks try to foster good corporate governance in commercial banks and ensure that the banking system in the country adheres to the international norms laid out by international institutions such as the BIS. The Basel Committee has also established the core principles in this area. The central bankers work closely with the government officials and are in a position to bring about proactive reform or advise their governments (Chandavarkar, 1996).

3.109 Globalisation and the consequent integration of financial markets in recent years have not only opened up more avenues of spreading contagion, they have also made it increasingly difficult to handle systemic risks from a narrow unilateral decision-making perspective. This calls for an effective regulatory system with increasing international cooperation among regulators. The first formal attempt to establish international coordination among central banks could be traced back to the BIS established on May 17, 1930. The BIS is an international organisation, which fosters international monetary and financial cooperation and serves as a banker to the central banks. The basic objectives of the BIS are to serve as a forum to promote discussion and policy analysis among central banks and within the international financial community, to act as a centre for economic and monetary research, be a prime counterparty for central banks in their financial transactions and also act as agent or trustee in connection with international financial operations. Promoting monetary and financial stability is one of the key objectives of the BIS. Towards this end, standing committees such as Basel Committee on Banking Supervision, Committee on Global Financial System, Committee on Payment and Settlement Systems and Market Committee, located at the BIS, support central banks by providing background analysis and policy recommendations.

3.110 Other notable attempts of central bank cooperation include the Bretton Woods Arrangement (1944). The IMF was created in 1945 primarily to maintain a stable international financial system and promote international monetary cooperation. Apart from these efforts at international levels, some attempts to establish regional cooperation among central banks have also been made. A major example of this is the establishment of European Central Bank (ECB) in 1998. The ECB is the central bank of the eurozone, in charge of monetary policy for the twelve countries that use the euro currency.

3.111 In South Asia, SAARCFINANCE was established in 1998 to serve as a forum for exchange of views and experiences, including training programmes. There are regular and frequent close interactions among central bank Governors in Asia, which should strengthen the process of cooperation (Reddy, 2005).

III. CONTEMPORARY ISSUES IN CENTRAL BANKING

Independence of a Central Bank

3.112 In the process of evolution, while the spectrum of activities of central banks has widened, the stance regarding the independence of central banks has also taken interesting turns. Before the First World War, the central banks in most cases were private institutions and were formally independent of their governments. The position changed around the Second World War - central banks in a number of countries (for instance, Germany, France, England, Japan, Italy and Sweden) were made subordinate to their governments. In recent years again, there has been a reversal of the trend. Governments have started granting more autonomy to their central banks, especially in the light of the empirical evidence that a country is more likely to have low inflation if the central bank is independent (Holtfrerich and Reis, 1999).

3.113 The last decade of the twentieth century saw a surge in the independence of central banks with central banks becoming fully responsible for formulating monetary policy. These changes came about gradually, with central banks increasing their role after each crisis and underscoring the need to retain their independence. The year 1998 was remarkable in this respect. The Bank of England, which had substantial independence for much of the eighteenth and the nineteenth century, was legally made an independent body in June 1998. The Bank of Japan gained operational independence in April

1998, though it was not granted legal independence. The ECB, which became operational in June 1998, is arguably the most independent central bank by its very characteristic of being a supranational bank.

3.114 The rationale behind central bank independence is extensively discussed in literature. First, an independent central bank operates on a longer time scale and thus may be more inclined to adopt a more prudent long-term perspective. Second, the priorities of the fiscal policies may conflict with the monetary policy objectives. For example, while the government would like to keep the cost of debt service low, the monetary authorities may like to vary the interest rates in order to maintain price stability. An independent central bank may be in a better position to address and resolve this conflict. Third, in countries where debt markets are not well developed, central banks that do not enjoy adequate independence may be forced to finance the budget deficit by printing money, thereby interfering with the objective of price stability (Meyer, 2000).

3.115 The arguments for central bank independence are said to be from the world of second best, where political systems tend to behave myopically, favouring inflationary policies with short-run benefits and discounting excessively their long-run costs. An independent central bank, given responsibility for price stability, can overcome this inflationary bias (Fischer, 1996). The view that central banks should be largely independent of political power is generally believed to have emerged only in the twentieth century. In the light of the severe deficit financing that had afflicted many countries during the First World War, the international financial community, in a series of Conferences organised by League of Nations, recognised central bank independence as contributing to price stability. The recent revival of interest in the independence of central banks reflects several factors, *viz.*, the reforms in centrally planned economies, the establishment of new European central banking arrangements and the importance of price stability in a world characterised by substantial cross border financial flows.

3.116 The degree of independence enjoyed by the central bank is contingent on three major factors: independence in personnel matters, independence in financial aspects and independence in the conduct of policy. Personnel independence refers to absence of government interference in matters such as appointments of senior officials, term of their office, and the dismissal procedures of top central bank officials and the governing board. Pre-specified and

transparent appointment and dismissal procedures add to central bank independence. Some countries have mechanisms that ensure that a wide range of political interests are taken care of in the appointment process. In more than two-thirds of central banks surveyed recently by the BIS, it was found that at least two or more political bodies were involved in proposing and appointing the candidates, making these appointments less discretionary and the central banks more independent. Illustratively, after the Chairman of the Federal Reserve System is proposed by the President of the United States, it requires the consent of the US Congress.

3.117 'Financial independence relates to the freedom of the central bank to decide the extent to which government expenditure is either directly or indirectly financed *via* central bank credits' (Reddy, 2001). Automatic monetisation of deficit subordinates monetary policy to the fiscal policy. In this context, it is observed that if the central bank has a budget of its own, it is more independent. In that case, the central bank has sufficient financial resources to carry out its work without having to wait for sanctions from the government.

3.118 Policy independence is related to the flexibility given to the central bank in formulation and execution of monetary policy. The operational independence is further examined as 'goal independence' or 'instrument independence'. Goal independence refers to a situation where the central bank itself can set its own objective from a set of conflicting objectives such as full employment and low inflation, at any point of time. Instrument independence refers to a situation where the central bank is free to choose instruments in order to achieve the pre-specified goals. Most central banks have legislative mandates and, therefore, do not have goal independence as the goals are set by the legislation. Countries also vary considerably in the specificity of the mandated goals and hence, in the degree of discretion enjoyed by central banks in the conduct of monetary policy.

3.119 The ownership of an institution generally matters as it determines its operations. The ownership of the central bank is observed not to affect its manner of operation or the decision-making provided it has operational independence. Across the board, central banks have been moving over time towards greater operational independence. Independence was ingrained in the very design of certain central banks, as in case of the *Bundesbank*. The *Bundesbank* had special provisions that ensured its independence but was also required to support the economic policies

of the government. Such central banks could be expected to perform their role better as they are insulated from political pressure.

3.120 A number of studies have been carried out to evaluate the economic implications of central bank independence. These studies typically estimate the economic effects by first deriving quantitative measures of the relative independence of central banks and then estimating how these measures are correlated with the average inflation, inflation variability and real economic performance. However, the design of the index, including the elements considered, their weights and normalisation procedures affect the results (Mangano, 1998). Notwithstanding this, several studies have shown that during the period following the breakdown of the Bretton Woods System of fixed par values in the early 1970s, the industrialised countries that accorded greater legal autonomy to their central banks also experienced lower average inflation (Grilli *et al*, 1991). Evidence from these countries further strengthened the case for central bank autonomy because the higher degree of autonomy did not appear to harm average real growth (Alesina and Summers, 1993). During the 1990s, however, against the backdrop of lower inflation and increasing political commitment to restrain inflation to lower levels, it became increasingly difficult to identify a correlation between greater central bank independence and lower inflation (Lybek, 2004).

3.121 Hayo and Hefeker (2002) have argued that central bank independence is neither necessary nor sufficient for monetary stability. First, independence is just one potentially useful monetary policy design among several. Second, independence should not be treated as an exogenous variable, but attention should be devoted instead to the question of why central banks are made independent. Central bank independence is chosen by countries under specific circumstances, which are related to their legal, political and economic systems. This study has also found independence being correlated with low inflation rates. However, the authors argue that if the independence of the central bank is taken into account endogenously, the correlation between independence and low inflation does not reveal anything about the direction of causality.

3.122 There is an influential view that inflation is determined by history and the preferences of a country, with causality running from inflation to institutional structure. According to this view, attempts to impose an independent central bank and with it a

stringent anti-inflationary policy in a country tolerant of inflation are doomed to failure. This has, however, not been borne out by experience of countries such as New Zealand. Before 1988, the Reserve Bank of New Zealand was one of the least independent central banks in the OECD. After it got a clear mandate in 1988 to fight inflation along with a high degree of independence, the inflation rate in New Zealand declined from double-digit levels to under two per cent. This suggests that the structure of monetary institutions along with the determination to combat inflation is necessary to contain inflation (Mboweni, 2000).

3.123 An independent central bank may adopt policies that are conflicting with other policies followed by the government. Such inconsistencies in policy objectives may lead to economy-wide problems. This suggests the desirability of a coordinated policy approach. On the other hand, it can be argued that such conflicts may be inevitable over the short-term, as long as central banks have the primary responsibility to control inflation. However, over the long-term, stable financial conditions ultimately lead to higher economic growth rates, more employment and increased welfare.

3.124 One of the major arguments against central bank independence is that it lacks democratic legitimacy, since decisions about interest rate, exchange rates, efficiency of the financial system and other monetary matters are left to the body of unelected officials. It may be noted, however, that even the most independent central bank is answerable to the legislature. Moreover, independence does not mean absence of communication and the central bank, for the success of its own policies, may prefer a regular process of communication and coordination with the government to absolute independence.

3.125 Independence of the central bank in itself is a tool to achieve broader macroeconomic goals. Pre-conditions for effective independence of a central bank include transparency about its aims; some form of accountability to the legislative body; and credibility with a view to avoiding the time inconsistency problem.

Accountability of a Central Bank

3.126 Accountability implies bearing responsibility for monetary policy actions. Central bank accountability, coupled with autonomy and transparency facilitates price and financial sector stability, which is conducive to sustainable economic

growth. There are a few measures of accountability of monetary policy. Briault, Haldane and King (1996) have constructed a central bank accountability index for fourteen industrialised countries based on parliamentary monitoring, the release of minutes of Monetary Policy Committee (MPC) meetings, the publication of monetary policy reports and the existence of an override mechanism. The central bank accountability index reported by Fry *et al* (2000) focuses on accountability with respect to a specific target and public accountability. All these accountability measures combine aspects of both transparency and responsibility.

3.127 One view is that accountability implies some compromise on central bank independence. Central bank accountability is a mechanism through which a system of checks and balances is created for the central bank in a democratic setup. Nolan and Schaling (1996) argue that there is a significant negative relationship between central bank accountability and central bank independence. De Haan (1997), however, has countered this argument specifying that this conclusion is subjective to the measure of accountability used and is not universally applicable. It has also been argued that the trade-off between independence and accountability does not exist for long (Eijffinger and de Haan, 1996). A central bank continuously conducting a policy which lacks broad political support will, sooner or later, be overridden. The US Fed is one of the most independent central banks but its independence is tempered by its accountability – the Chairman of the US Fed has to give a testimony before the Congress periodically.

3.128 It is sometimes argued that accountability of central banks is facilitated by setting up a single objective (typically price stability), which is explicitly stated numerically. It is noteworthy, however, that fixing a strict inflation target to the exclusion of all other important targets like output growth may not be desirable. Another consideration is that the economy is subject to a variety of shocks and flexibility can be a valuable asset in tackling the dynamic situations as they arise. Another source of accountability is the reappointment process for the central banker. If the terms are short, greater control can be exercised by the government through the appointment process.

3.129 Buiter (1998) argues that the Bank of England Act combines operational independence and accountability most effectively. If the inflation target is missed by more than one percentage point, in either direction, the Governor, on behalf of the MPC will be

required to write an open letter to the Chancellor. The letter would have to explain the causes behind the overshooting or undershooting, the relevant policy measures proposed and the time it would take for the policies to impact on inflation and bring it back to the targetted level. Apart from being collectively responsible, the members of MPC are also individually responsible and accountable to the Court of Directors of the Bank of England. The MPC regularly publishes a quarterly inflation report and inflation forecasts, which are the indicators of the MPC's thinking about the monetary policy transmission mechanism and its views on the evolving economic environment.

3.130 The mechanisms to ensure accountability of the central bank require a review of a central bank's decisions, budget and its expenditures. Transparency in the operating procedures and the monetary policy making process of the central bank ensures its accountability. The greater the independence of the central bank, the greater is the need for it to have its decisions and policies available for scrutiny by the appropriate authority. As mentioned before, there is a requirement that the Governor testifies before the congress or the parliament in a number of countries. In many cases, a publicly appointed supervisory board, not the government, approves the central bank's operational budget but in others, the government does not intervene in budgetary matters. The supervisory boards review the accounts and evaluate the performance of the central bank and its management.

3.131 The present day central bank remains both autonomous and accountable while achieving its core objectives of price stability and growth. Currently, central banks have become more open and they disclose the rationale behind their policies and decision making. The BIS and the IMF norms relating to data dissemination also contribute in increasing the accountability of the central banks. The publication of the central bank annual reports, inflation reports and publication of the proceedings or minutes of monetary policy committee meetings, are important methods to ensure accountability.

3.132 Knight (2005) refers to three types of best practices that enhance transparency: publication of official reports that analyse economic conditions; publication of forecasts of key variables (e.g. inflation, output) and their central forecast as well as risks; and explaining the reasons for central bank decisions and various contingencies under consideration. Such measures are necessary to anchor market players' expectations and help in transmitting the monetary

policy signals and aligning the markets to the monetary policy decisions.

Transparency in Central Bank Operations

3.133 Central bank transparency could be defined as the absence of asymmetric information between monetary policy makers and other economic agents with a view to reducing the uncertainty. The need for transparency has emanated from several developments in the recent period. The episodes of financial crises resulting from information asymmetries, growing integration of financial markets, the need for enhanced autonomy as well as accountability of central banks, and the emphasis on financial stability have called for increased transparency on the part of central banks and market participants. The growing global macroeconomic imbalances create further uncertainty for market agents and policy makers. In this context, central banks themselves cannot afford to be additional source of uncertainty. This requires greater transparency and better communication. Monetary policy needs to be based on a diversified approach to the analysis of information, which is robust to different views about the functioning of the economy and the international linkages.

3.134 In this context, it is apparent that transparency is the offshoot of accountability in many ways. Detailed discussion of the decisions and monetary policy operations is essential, as central banks act as agents in a 'principal-agent relationship' *vis-à-vis* society at large and in several cases they are granted independent status in order to better fulfil their mandate. Transparency is a secondary, although an important, objective of the central bank. This is because the accountability of the central bank is centred on the bank fulfilling its primary objective relating to monetary policy and rendering transparency subordinate to their ultimate tasks and objectives (Issing, 2005).

3.135 The stability of financial system could be achieved only when institutions and market players take informed decisions. Adequate disclosure acts as a deterrent to discretionary monetary policy, time inconsistency and excessive risk taking. It also enables the market participants to be aware of the costs and commitments in financial contracts. The importance of transparency emerges from several considerations. First, monetary and financial policies could be made more effective if the public knows and understands the goals and instruments of policy and if central banks and financial agencies make a credible

commitment towards achieving them. Second, good governance calls for central banks and financial agencies to be accountable and transparent, particularly where these agencies are granted a high degree of autonomy. For the present, there is almost a consensus among policymakers that improved communication and transparency is desirable not only as an obligation to the public but also because it is beneficial for the working of the policies it has chosen to follow.

3.136 Central bank transparency is crucial for achieving the objectives of monetary policy. Information about the objectives of central bank and the details of conduct of monetary policy like changes in interest rates are important as they help to anchor the public expectations. These expectations play a crucial role in achieving the goals of monetary policy in the context of the rational expectations (Kydland and Prescott, 1977). A credible commitment to price stability and a credible monetary policy anchors expectations (Pianalto, 2005). Recent literature also suggests that transparency reduces uncertainty for players in the financial markets (Blinder *et al*, 2001).

3.137 Several initiatives have been taken to strengthen the international financial architecture with a view to increasing transparency in operations by putting in place best practices and norms in this regard. These initiatives were first given prominence at the 1995 Halifax Summit of the G-7 countries. These efforts received greater thrust in the aftermath of East Asian crisis. In April 1998, finance ministers and central bank governors met in Washington and working groups were set up in three areas: enhancing transparency and accountability, strengthening domestic financial systems and managing international financial crises.

3.138 In order to put in place desirable transparency practices for central banks on stronger grounds, the International Monetary Fund in March 2000, has formulated a Code of Good Practices on Transparency in Monetary and Financial Policies known as the ELRIC framework. The acronym ELRIC, in the context of central bank governance stands for five areas *viz.*, external audit mechanism, legal structure and independence, financial reporting, internal audit mechanism and a system of internal control. The ELRIC framework employs International Financial Reporting Standards, International Standards on Auditing, guidelines promulgated by the Institute of Internal Auditors and the IMF's data dissemination standards as benchmarks. Safeguard exercise as per this framework is a diagnostic exercise, carried out

by the IMF, to assess these five key areas of control and governance of a central bank. The safeguard assessment under the ELRIC framework attempts to generate a report so as to identify vulnerabilities in case of a central bank's operations and offers recommendations to mitigate them. The recommendations include a timeframe for implementation.

3.139 The need for transparency and communication increases in line with the level of discretion used in the formulation of monetary policy. The question presently discussed in literature is not whether central banks should be transparent but what should be the degree of this transparency? Transparency entails data and information dissemination. Publication of objective data is generally perceived as a highly desirable objective, thereby enabling the members of the general public to analyse and form independent opinions. Though questions are sometimes raised about the ability of a layman to deduct and form opinion given the information, a more serious problem is associated with the flood of data, which may mar the vision of the public, thereby veiling the crucial data that is important for policy formulation (Issing, 2005).

Credibility of a Central Bank

3.140 Credibility of a central bank implies that it has a reputation for pursuing price stability and financial stability consistently and persistently. The credibility of the central bank is important in the context of the time inconsistency problem described by Calvo (1978) and Kydland and Prescott (1977). Various institutional arrangements could be devised to provide adequate incentives to the monetary authorities to adhere to promises or alternately punish central bankers for not being able to keep the promises. The second is to design policy instruments available to the central bankers such that they are constrained in engineering monetary surprises. For the working of both these arrangements, it is necessary to grant independence to the central bank. Incentive to maintain credibility may be powerful enough to make socially optimal outcomes attainable, even in the absence of any institutional constraints (Chang, 1998). If a central bank is viewed as both committed to and effective at maintaining low inflation, then inflation expectations are lower, eventually leading to movements in prices and wages that are consistent with low and stable inflation. Conversely, the lack of credibility leads to inflation expectations becoming self-fulfilling (Ferguson, 2005).

3.141 It is noteworthy, however, that since credibility of a central bank is difficult to quantify, establishing empirical evidence with regard to the relationship between central bank independence, credibility and lower inflation is difficult. However, a strong commitment to price stability can lead to more stable prices (Gagnon and Ihrig, 2004). Credibility of a central bank helps in anchoring inflation expectations, which is crucial for current level of inflation as illustrated by Laxton and N'Diaye (2002).

IV. CONCLUSIONS

3.142 Theory and practice of central banking has changed markedly over time. This chapter has traced this evolution and discussed major contributory factors. As central banking arrangements have gradually adjusted to the requirements of their economy, the theory and practice of central banking have had a symbiotic relationship. Reflecting the economic realities, the institutional arrangements differed across the globe. The central banks in developed countries came into existence to support and supervise the banking system that was already in place, whereas the central banks in developing countries had to first develop the banking system and financial markets and thereafter put in place the regulatory framework for the efficient oversight and supervision.

3.143 Central banking and monetary policy were globally in focus until the Great Depression and Keynes' General Theory; thereafter for two decades the ascendancy of fiscal policy relegated the monetary policy issues to the background. The 1960s saw an emergence of the interest in inflation and growth trade-off - the Phillips Curve depicted an inverse relationship between inflation and unemployment. Concerns regarding inflationary pressures brought monetary policy back to the centre-stage of economic policy. In the 1970s more and more countries chose monetary targeting to address the goal of price stability. Some small open economies chose to peg their currencies to stronger currencies to borrow their low-inflation credibility.

3.144 The domain of central banking activities has expanded after each period of crisis. The functions of the central bank have enlarged in their scope of operation and improved in content over the years. Monetary policy and central banking have key roles to play in the stabilisation of short-run economic fluctuations and in preventing significant departures from the desired trajectories for growth and inflation. The manner and details of central banks' operations

have varied over the years; the central banks have moved from direct to indirect instruments of monetary control. This transition had to be gradual and cautious to avoid retreats and consolidate the gains.

3.145 Many functions of the central bank have forged ahead in related areas. For example, the function of instituting the medium of exchange has branched off into functions such as currency management, maintenance of a stable internal and external value of currency. The role of lender-of-the-last-resort has evolved and enlarged into that of the regulator and supervisor of the banking system and also a custodian of the financial stability. The supervision of the financial system becomes crucial as the various markets are getting increasingly integrated across the globe and financial crises can be transmitted with great speed. Contagion has underscored the need for effective supervision and adherence to international standards and codes. This also highlights the need for greater transparency of monetary policy so as to enable the anchoring of expectations of the market players and attaining greater credibility. The central bank credibility is in itself a stabilising force that shapes the market expectations.

3.146 Many central banks have evolved from the need to have an institution that would manage the finances of their governments. The need to manage government debt was a function that required the central banks to undertake a variety of fiscal transactions and consequently led to evolution of an institutional structure to take care of all the associated functions. While some provision of liquidity to the respective governments is required to smoothen the temporary mismatches in revenues and expenditures, financing the persistent deficits is being increasingly avoided. Some countries have passed legislations prohibiting credit to their governments and enhancing their monetary policy independence. Thus, the governments are increasingly financed by the private sector.

3.147 Central banks in several developing countries have taken initiatives for financial sector reforms. This role is undertaken as it is increasingly evident that competitive financial markets are necessary for efficient allocation of resources and failures in the financial markets have serious costs in terms of output. In developing countries, central banks have contributed towards the development of the banking and financial sectors and made efforts to bring them at par with their counterparts in the developed world. For this, they have fostered the growth of their markets and institutions. The transitional economies and

developing countries have leapfrogged in terms of their systems and technologies, thus reducing their gap *vis-à-vis* their developed country counterparts. They have integrated their financial sectors and now their central banks do not have to separately operate in multiple segments of the financial markets. Most central banks currently use short-term interest rate as a principal tool. The development of financial markets has enabled central banks to achieve efficiency in the pursuit of monetary policy. A single rate change or an announcement is often adequate to align the markets. Since economic activity hinges critically on monetary policy action, it has to be initiated with great caution. As the financial system evolves and becomes increasingly complex, the markets are expected to respond quickly to actual and perceived actions by the central bank. Central banking is also becoming increasingly more challenging in view of the integration of global markets.

3.148 The fundamental function assigned to most central banks is that of keeping inflation low. The performance of this function requires the central banks to select the appropriate targets, instruments or frameworks within which to operate. The issues relating to this selection are addressed in a variety of ways across countries and differently even by the

same country over time. Empirical evidence suggests that central banks with adequate autonomy and accountability have performed well across frameworks of monetary policy. There are two operational aspects, which have been observed in successful central banks. These are the focus on long-term horizon and transparency of policy actions.

3.149 Central banks at present occupy the centre-stage in the financial sector. They have covered a significant ground, considering that even in the beginning of the twentieth century, there was a considerable support for free banking. The inflation and growth aspects of the central bank's monetary policy have remained in sharp focus. There is also considerable expansion in the focus and quality of functions that the central banks perform. While some of these have been effectively hived off, there are some other functions that have been taken over proactively such as promotion of financial stability and ensuring the development of the financial system. Central banks as multi-tasking agencies will continue to play a significant role in macroeconomic policy making. They may, probably move over from one prototype to the other depending upon the needs of their respective financial structure, but seem unlikely, for now, to surrender the centre-stage.