

# **IMPACT OF MONETARY POLICY ON INDIAN ECONOMY IN THE POST-REFORM PERIOD**

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**DOCTOR OF PHILOSOPHY**  
*Under the Faculty of Social Sciences*

**By**

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**2010**

## **CERTIFICATE**

Certified that the thesis, **'IMPACT OF MONETARY POLICY ON INDIAN ECONOMY IN THE POST-REFORM PERIOD'** is a record of bonafide research work carried out by Mrs. Smitha. T.H., under my supervision. The thesis is worth submitting for the degree of doctor of philosophy.

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## **DECLARATION**

I declare that the thesis, '**IMPACT OF MONETARY POLICY ON INDIAN ECONOMY IN THE POST-REFORM PERIOD**' is the record of bonafide research work carried out by me under the supervision of Dr. K.C. Sankaranarayanan, former Professor and Head of the Department, Department of Applied Economics, Cochin University of Science and Technology, Cochin-22. I further declare that this thesis has not previously formed the basis for the award of any degree, diploma, associateship, fellowship or other similar title of recognition.

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October 20, 2010

**Smitha T.H.**

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## **CONTENTS**

<b>I. INTRODUCTION</b>	<b>1</b>
<b>1.1. RESEARCH PROBLEM AND SIGNIFICANCE OF THE STUDY</b>	<b>2</b>
<b>1.2. OBJECTIVES OF THE STUDY</b>	<b>3</b>
<b>1.3. DATA SOURCE AND METHODOLOGY</b>	<b>4</b>
<b>1.4. SCOPE OF THE STUDY</b>	<b>4</b>
<b>1.5. SCHEME OF THE STUDY</b>	<b>5</b>
<b>1.6. INDIA AND GLOBAL FINANCIAL CRISIS</b>	<b>6</b>
<b>1.7. LITERATURE REVIEW</b>	<b>9</b>
<b>REFERENCES</b>	<b>30</b>
<b>II. MONETARY THEORY AND POLICY</b>	<b>36</b>
<b>2.1. ROLE OF MONEY IN ECONOMIC ACTIVITY</b>	<b>36</b>
2.1.1. The Narrow and Broad Definitions of Money	36
2.1.2. Functions of Money	39
2.1.3. Social Significance of Money	41
2.1.4. Near Money	43
2.1.5. Importance of Money	45
2.1.6. Changes in Money and Income	47
2.1.7. Money Market in India	49
2.1.8. The Narasimham Committee Report	52
2.1.9. The financial Sector Reforms in India	57
<b>2.2. THEORETICAL UNDERSTANDING OF MONETARY PHENOMENA</b>	<b>58</b>
2.2.1. Traditional Monetary theory	61

2.2.2. Contemporary Monetary Theory	78
2.2.3. Keynesian Monetary Theory	83
2.2.4. Growth and Monetary Theory	94
<b>2.3. DEFINITION OF MONETARY POLICY</b>	<b>96</b>
<b>2.4. OBJECTIVES OF MONETARY POLICY</b>	<b>98</b>
2.4.1. Trade-off in Monetary Goals	102
2.4.2. Policy Objectives in India	104
<b>2.5. TARGETS OF MONETARY POLICY</b>	<b>107</b>
<b>2.6. INDICATORS OF MONETARY POLICY</b>	<b>109</b>
<b>2.7. MONETARY POLICY AND ECONOMIC ACTIVITY – AN OVERVIEW</b>	<b>111</b>
<b>REFERENCES</b>	<b>118</b>
<b>III. SIGNIFICANCE OF MONETARY POLICY</b>	<b>123</b>
<b>3.1. ROLE OF MONETARY POLICY IN DEVELOPED COUNTRIES</b>	<b>124</b>
<b>3.2. IMPORTANCE OF MONETARY POLICY IN DEVELOPING ECONOMIES</b>	<b>131</b>
<b>3.3. SOME MONETARY CONSTRAINTS</b>	<b>136</b>
<b>3.4. MONETARY POLICY AND BANKING SOUNDNESS</b>	<b>138</b>
<b>3.5. MONETARY POLICY IMPLEMENTATION</b>	<b>141</b>
<b>REFERENCES</b>	<b>142</b>
<b>IV. REVIEW OF MONETARY POLICY SINCE 1991</b>	<b>143</b>
<b>4.1. MONETARY POLICY 1991-92</b>	<b>143</b>
<b>4.2. MONETARY POLICY 1992-93</b>	<b>144</b>
<b>4.3. MONETARY POLICY 1993-94</b>	<b>146</b>
<b>4.4. MONETARY POLICY 1994-95</b>	<b>149</b>
<b>4.5. MONETARY POLICY 1995-96</b>	<b>153</b>

<b>4.6. MONETARY POLICY 1996-97</b>	<b>154</b>
<b>4.7. MONETARY POLICY 1997-98</b>	<b>155</b>
<b>4.8. MONETARY POLICY 1998-99</b>	<b>157</b>
<b>4.9. MONETARY POLICY 1999-2000</b>	<b>160</b>
<b>4.10. MONETARY POLICY 2000-01</b>	<b>162</b>
<b>4.11. MONETARY POLICY 2001-02</b>	<b>166</b>
<b>4.12. MONETARY POLICY 2002-03</b>	<b>169</b>
<b>4.13. MONETARY POLICY 2003-04</b>	<b>171</b>
<b>4.14. MONETARY POLICY 2004-05</b>	<b>173</b>
<b>4.15. MONETARY POLICY 2005-06</b>	<b>176</b>
<b>4.16. MONETARY POLICY 2006-07</b>	<b>180</b>
<b>4.17. MONETARY POLICY 2007-08</b>	<b>183</b>
<b>4.18. MONETARY POLICY 2008-09</b>	<b>186</b>
<b>4.19. MONETARY POLICY 2009-10</b>	<b>190</b>
<b>REFERENCES</b>	<b>195</b>
<b>V. MONEY MARKET INSTRUMENTS AND INTEREST RATES</b>	<b>197</b>
<b>5.1. LENDING RATE</b>	<b>199</b>
<b>5.2. DEPOSIT RATE</b>	<b>206</b>
<b>5.3. LIQUIDITY ADJUSTMENT FACILITY (LAF)</b>	<b>218</b>
<b>5.4. CALL MONEY MARKET</b>	<b>226</b>
<b>5.5. CERTIFICATE OF DEPOSITS (CDS)</b>	<b>234</b>
<b>5.6. COMMERCIAL PAPER (CPs)</b>	<b>237</b>
<b>5.7. MONEY MARKET MUTUAL FUNDS (MMMFs)</b>	<b>242</b>
<b>5.8. CHANGES IN THE REFINANCE FACILITY</b>	<b>244</b>
<b>5.9. EXPORT CREDIT</b>	<b>251</b>
<b>5.10. OTHER MONEY MARKET DEVELOPMENTS</b>	<b>257</b>
<b>REFERENCES</b>	<b>266</b>



<b>VI. MONETARY POLICY IN INDIA</b>	<b>268</b>
<b>6.1. INSTRUMENTS OF MONETARY POLICY IN INDIA</b>	<b>268</b>
6.1.1. Bank Rate	268
6.1.2. Cash Reserve Ratio (CRR)	275
6.1.3. Statutory Liquidity Ratio (SLR)	291
6.1.4. Open Market Operations	297
6.1.5. Repo Rate	311
6.1.6. Reverse Repo Rate	324
6.1.7. Selective Credit Control Methods	330
<b>6.2. MONEY, PRICES AND OUTPUT IN INDIA</b>	<b>337</b>
6.2.1. Reserve Money	338
6.2.2. Money Multiplier	343
6.2.3. Money Supply in India	346
6.2.4. The Price Level and Real Output	363
6.2.5. Inflation and Economic Growth	371
6.2.6. Monetary Policy and Price Stability	377
6.2.7. Monetary Policy and Economic Growth	383
<b>REFERENCES</b>	<b>400</b>
<b>VII. SUMMARY, FINDINGS, CONCLUSION AND RECOMMENDATIONS</b>	<b>402</b>
<b>BIBLIOGRAPHY</b>	<b>416</b>

## LIST OF TABLES

Table No	Title	Page No
V.1.	Lending Rate during the period from 1991-92 to 2010-11	200
V.2.	Deposit Rate during the period from 1991-92 to 2010-11	207
V.3.	Call Money Rate during the period 1991-92 to 2010-11	227
VI.1.	Movements in Bank Rate during 1991-2010	274
VI.2.	Movements in CRR during 1991-2010	288-290
VI.3.	Movements in SLR during 1991-2010	296
VI.4.	Reforms in the Government Securities Market	301-303
VI.5.	Movements in Repo Rate during 2000-2010	321-322
VI.6.	Movements in Reverse Repo Rate during 2000-2010	328-329
VI.7.	Components of Reserve Money (H) during 1991 to 2010	340
VI.8.	Reserve Money Variations (Amount in Rs. Crores)	342
VI.9.	Money Multiplier during 1991 to 2010	345
VI.10.	Net Bank Credit to Government during 1991-92 to 2009-10	353
VI.11.	Total Bank Credit to Commercial Sector during 1991-92 to 2009-10	355
VI.12.	Net Foreign Exchange Assets (NFA) of the Banking sector during 1991-92 to 2009-10	357
VI.13.	Government's Currency Liabilities to the Public during 1991-92 to 2009-10	358
VI.14.	Net Non- Monetary Liabilities of the Banking sector during 1991-92 to 2009-10	359
VI.15.	Measures of Money during 1991 to 2010	360
VI.16.	Components of Money Supply (M3) during 1991 to 2010	361
VI.17.	Broad Money (M3) Variations (Amount in Rs. Crores)	362

<b>Table No</b>	<b>Title</b>	<b>Page No</b>
VI.18.	Gross Domestic Product (GDP) during 1991 to 2010 (base 1999-2000)	366
VI.19.	Percentage Share of GDP Components to total GDP	367
VI.20.	GDP Deflator during 1991 to 2007	369
VI.21.	Annual rate of inflation of Whole Sale Price Index (WPI) during 1991 to 2010	374
VI.22.	Annual rate of inflation of Consumer Price Index (CPI) during 1991 to 2010	376
VI.23.	Credit, Money and Price during 1991 to 2010	378
VI.24.	Credit, Money and Price Variations during 1991 to 2010	380
VI.25.	Movements in Key Policy Rates (in percent), WPI and CPI in India	381
VI.26.	Net National Product (NNP) at factor cost during 1991 to 2010	384
VI.27.	Credit- Deposit Ratio during 1991 to 2009	385
VI.28.	Gross Domestic Savings and Saving Rate during 1991 to 2009(base 1999-2000)	387
VI.29.	Net Domestic Savings Variations (At Current Prices)	388
VI.30.	Sector-Wise Domestic Savings (At Current Prices)	389
VI.31.	Net Domestic Capital Formation (NDCF) during 1991-2008	391
VI.32.	Balance of Payment Variations during 1991-2009 (Rupees crore)	392
VI.33.	Components of Balance of Payments	393
VI.34.	Money, Prices and Output during 1991 to 2010	396
VI.35.	Money, Prices and Output at factor cost during 1991 to 2010	398

## LIST OF CHARTS

<b>Chart No</b>	<b>Title</b>	<b>Page No</b>
II.1.	Demand and Supply of Money	75
III.1.	Process of Monetary Policy Formulation	140
V.1.	LAF Corridor and the Call Rate	232
V.2.	Transmission of Policy Rates to Lending Rate	233
V.3.	Certificates of Deposit	236
V.4.	Commercial Paper	237
V.5.	Money Market Rates	241
V.6.	Money Market Integration and Policy Rates	263
VI.1.	Reserve Bank's Open Market Operations	309
VI.2.	Monetary Policy Transmission through Interest Rate Channel	336
VI.3.	Annual Percentage Variation in the Components of Reserve Money during 1991- 2010	341
VI.4.	Annual Percentage Variation in Reserve Money during 1991- 2010	343
VI.5.	Trend in Money Multiplier during 1991- 2010	346
VI.6.	Bank Credit and Non-food Credit Growth	356
VI.7.	Credit and Investment	356
VI.8.	Incremental Credit-Deposit Ratio	386
VI.9.	Credit-GDP Ratio	386

**CHAPTER - I**  
**INTRODUCTION**

# **CHAPTER - I**

## **INTRODUCTION**

By monetary policy, we mean policy concerned with changes in the supply of money. Issues connected with monetary policy are: objectives or goals of the policy, instruments of monetary control, its efficacy, implementation, intermediate target of the policy etc. India's monetary policy since the first plan period was one of 'controlled expansion'- that is, a policy of adequate financing of economic growth ensuring reasonable price stability. Thus, RBI helped the economy to expand via expansion of money and credit and attempted to check rise in prices through monetary and other control measures.

A mild version of the liberalization process in the Indian economy was initiated in the mid 1980s. But, it lacked depth, coverage and self sustaining character. During the fag end of the 1980's the economy suffered a big jolt with the eruption of a major macro-economic crisis. It manifested initially in the form of foreign exchange crisis, and then debt and interest payment problems. To meet the crisis India approached the World Bank and the International Monetary Fund (IMF) for a big loan. For granting the loan, World Bank and the IMF stipulated certain conditions. Since India was in a critical situation, she accepted the conditions of the World Bank and the IMF and then provided an immediate context for the realignment of the macro-economic fundamentals, through a programme of economic stabilization. With this end in view, India initiated the new economic policy in July 1991.

The package of economic reforms, which are expected to have long-term impact on the economy, includes fiscal, monetary, financial, and industrial and export-import (EXIM) sector reforms. The reforms in monetary and credit policies aimed at slowing down monetary expansion and thereby controlling inflation. The financial sector reforms were initiated on the recommendations of Narasimham Committee Report. The first phase of reform started with a reduction of Statutory Liquidity Ratio (SLR) and Cash Reserve Ratio (CRR) and permitted a degree of flexibility to the banks in the matter of deposit interest rates.

Money markets facilitate the conduct of monetary policy in a country. The development of money market in India in the last few years has been facilitated by some major factors. Firstly, it permitted a gradual de-emphasis on cash reserve ratio as a monetary policy instrument. Secondly, the development of an array of instruments of indirect monetary control, such as, the Bank Rate and the Liquidity Adjustment Facility (LAF). Thirdly, monetary policy is often, shaped by developments in the money and the foreign exchange markets.

Thus, in the post-reform period, the economy is dealing with a set of new programmes and policies for its own re-construction.

### **1.1. RESEARCH PROBLEM AND SIGNIFICANCE OF THE STUDY**

The monetary policy strategy of a Central bank depends on a number of factors that are unique to the country and the context. Given the policy objectives, any good strategy depends on the macro economic and the institutional structure of the economy. An important factor in this context is the degree of openness in the economy. The second factor is the stage of development of markets, institutions and technological development. In such a set up, where these conditions are satisfactory, it is possible for the Central bank to signal its intention with one single instrument or a combination of instruments.

It is important to recognize that all the objectives cannot be effectively pursued by any single arm of economic policy. Hence, there is always the problem of assigning to each instrument the most appropriate target or objective. It is clear from both the theoretical literature and the empirical findings that, among various policy objectives, monetary policy is best suited to achieve the goal of price stability in the economy. In today's altered economic context, a low and stable price environment is being increasingly regarded as an essential condition for bringing down the nominal interest rate and for improving the growth and productive potential of the economy.

In India, the emphasis of monetary policy shifted towards control of inflation in 1995-96. Ensuring price stability requires the pursuit of a consistent policy over a period of time.

A process of openness was initiated by Governor Rangarajan and has been widened, deepened and intensified by his successors Bimal Jalan, Y.V. Reddy and D. Subbarao. Now, the goals of monetary policy, in India, are not set out in specific terms and there is greater freedom in the use of instruments. Greater transparency in the setting of objectives of monetary policy and instrument freedom are expected to bring about greater rigor in the formulation of strategies and the choice of instruments.

In India, Money supply has been regarded as an appropriate intermediate target between the variables and objectives. Hence, it is also important to measure the structure of different economic variables that varies with respect to monetary policy decisions. To study the changing stages (transmission periods) of monetary policy is also considered, relevant.

Monetary policy is known to have both short and long term effects. While it generally affects the real sector with long and variable lags, monetary policy actions on financial markets, on the other hand, usually have important short-run implications.

It is necessary to recognize the existence of a large informal sector, the limited reach of financial markets relative to the growing sectors, especially services. This tends to constrain the effectiveness of monetary policy in India.

It is well recognized that monetary policy is conducted within a particular framework. The relationship among different segments of the market and sectors of the economy is also involved in this framework. As part of the ongoing process of reforms, it is necessary to improve standards, codes and practices in matters relating to financial system and bring them on par with international ones.

These are some items of significance for further research in the realm of monetary policy in India.

## **1.2. OBJECTIVES OF THE STUDY**

1. To study the changing role and importance of selected monetary instruments in India



2. To examine the effectiveness of monetary policy in ensuring price stability in India
3. To find out to what extent monetary policy facilitated economic growth in India and its general impact in the post- reform period

### **1.3. DATA SOURCE AND METHODOLOGY**

This study is exclusively based on secondary data. Secondary data were collected from the RBI bulletin, RBI occasional papers, RBI Annual Reports, Report on Currency and Finance, Economic Survey, Economic and Political Weekly (EPW), Finance and Development, Economic Diary, The Hindu, ICSSR, Economic Times, Asian Economic Review, Indian Economic Journal, Financial Express, World Bank Reports, Internet etc.

To examine the first objective, i.e. the changing role and importance of monetary weapons in India, the major monetary instruments used after the reform period were taken into account and changes in the relative importance of each monetary technique was marked and their efficacy in the Indian context was studied.

To study the major factors that determine the effectiveness of monetary policy in ensuring price stability, first, we analyzed the scope of Indian money market, its structure, and to study the relationship between the use of monetary weapons and relative changes in price level, we examined the general price index, inflation rate and money supply changes.

To find the general impact of monetary policy on the Indian economy and especially to find out the role of monetary policy in facilitating economic growth, we examined the different monetary intermediate targets and its impact on the real economic variables in India.

### **1.4. SCOPE OF THE STUDY**

The study covers for a period of 18 financial years starting from 1991. Thus, the study is exclusively on the impact of monetary policy on the Indian Economy in the post-reform period.

## 1.5. SCHEME OF THE STUDY

The study is organized under seven chapters. The first chapter provides an introduction to this study. It includes *the statement of the research problem, significance of the study, objectives, data source & methodology, scope and the scheme of the study*. Along that a *brief report on monetary policy and global financial crisis* is given in this chapter. It also includes a detailed *literature review*.

The second chapter titled as ‘Monetary Theory and Policy’ includes *role of money in economic activity, theoretical understanding of monetary phenomena, definition of monetary policy, objectives of monetary policy, targets of monetary policy, indicators of monetary policy and monetary policy and economic activity- an overview*.

The third chapter, viz; ‘Significance of Monetary Policy’ discusses *the role of monetary policy in developed countries, importance of monetary policy in developing economies, some monetary constraints, monetary policy and banking soundness and monetary policy implementation*.

The fourth chapter makes a Review of Monetary Policy Measures Since 1991 till 2010.

The fifth chapter deals with Money Market Instruments and Interest Rates. The issues discussed in this chapter are: *lending rate, deposit rate, liquidity adjustment facility, call money market, certificate of deposits, commercial papers, money market mutual funds, changes in the refinance facility, export credit and other money market developments*.

The sixth chapter is devoted for a discussion on ‘Monetary Policy in India’. This chapter is divided in to two parts. Part A focuses on *instruments of monetary policy in India such as bank rate, cash reserve ratio, statutory liquidity ratio, open market operation, repo rate, reverse repo rate and selective credit control measures*. Part B is on *money prices and output*. The major points discussed in this part are: *reserve money, money multiplier, money supply in India, the price level and real output, inflation and economic growth, monetary policy and price stability and monetary policy and economic growth*.

The last chapter provides *the summary, findings, conclusion and recommendations of the study.*

## **1.6. INDIA AND GLOBAL FINANCIAL CRISIS**

In India, since the financial system did not face a crisis, the damage to the transmission channel was minimal, even though the pre-global crisis time structural rigidities continued to limit the effectiveness of Reserve Bank's monetary policy actions. The recent switch over to the new 'base rate' system is expected to help in improving and enhancing the visibility of the transmission of monetary policy signals to credit markets.<sup>(1)</sup>

Reserve Bank of India has listed high inflation. Consumer price inflation and WPI inflation have been in double digits since February 2010. This suggests that inflation has become much more generalized.

The RBI's decision to 'narrow the liquidity corridor' – the difference between the repo and reverse repo rates- is significant. The reverse repo has been hiked by a higher margin than the repo rate. Liquidity is tight at the moment. The reference point for banks would be the repo rate, the rate at which they can borrow.

The monetary authorities have taken an optimistic view of the outlook for the economy and revised their earlier estimate of 8 percent growth in GDP to 8.5 percent. It has actually been hinted by the monetary authorities done through a reduction in commercial investments of banks, better use of the facility provided by the RBI and distinct improvement in the ways and means position of the Central Exchequer. The monetary authorities should desist from raising key interest rates and contracting money supply.

Although Indian policymakers were in denial mode when the global crisis broke in the latter half of 2008, it became clear that there was a larger impact on the Indian economy than had been anticipated. The GDP growth rate fell by about two percentage points. This happened particularly because there was a decline in exports, which have come to account for nearly a quarter of GDP with India's growing integration with the world economy after its economic reforms initiated in 1991. Similarly, a number of

financial channels of transmission between the global and the Indian economy led to further adverse impacts – a decline in stock market indices, outflows of portfolio investments, a squeeze on bank liquidity impacting outputs throughout the non-agricultural sector, a fall in foreign exchange remittances, and a slight decline in foreign exchange reserves. All of this in turn impacted employment, though not significantly. The government responded by putting in place fiscal stimuli, which had the consequence of raising the fiscal deficit to GDP ratio to over 10 per cent (for Centre and States combined), from a comfortable level of 6.5 per cent or so.<sup>(2)</sup>

It is clear, however, that the fundamentals of the Indian economy were, and remained strong. Savings and investment rates had risen sharply within a decade, and it has been domestic markets that were the main absorbers of Indian products and services – and thus driving growth. In addition, after the global crisis began, Indian policymakers responded with alacrity, and the central bank moved to loosen monetary policy. Not surprisingly, Indian growth is set to return to at least 8 per cent in financial year 2010-11, and during the 11th Plan period (2007-2012), it will average 8 per cent, not the 9 per cent that was target for the Plan, and this is primarily on account of the global economic crisis. The Indian economy, however, faces serious structural challenges which must be addressed rapidly if the demographic dividend is to be realized, and poverty reduced at a pace more rapid than the one realized so far. While India's financial sector remained resilient in the face of global shocks, there are a number of areas where the reforms would be needed to promote stability and generate growth impulses for the real economy. An important challenge is to channelise more savings to the financial system, particularly in rural areas and from the urban informal sector. This would need further penetration of the banking system. The Reserve Bank's emphasis on financial inclusion is important in attaining this objective over time. Further reduction in the cost of banking services may require greater competition among product lines, improved delivery mechanisms and increasing use of information technology.

With a view to ensure that domestic savings could finance long-term investment in projects having long gestation lags, the insurance and pension sectors, would be critical, due to the very nature of their liabilities, as well as a vibrant bond market.<sup>(3)</sup>

For sustaining the high growth path, improving the investment climate and enhancing the absorptive capacity would be critical. In this context, financial sector reforms have to emphasize promoting financial inclusion, ensuring wide and deep financial markets and facilitating the growth of strong, competitive and sound financial institutions. The major features are:

1. Since the initiation of the liberalization plan in the 1990s, the economic reforms have put emphasis on the open market economic policies. Foreign investments have come in various sectors and there has been a good growth in the standard of living, per capita income and Gross Domestic Product.<sup>(4)</sup>
2. Strengthened monetary and fiscal policy frameworks, efforts at boosting domestic demand, and deepening trade and financial linkages with other economies have been the focus of reforms.
3. For sustaining the high growth path, improving the investment climate and enhancing the absorptive capacity would be critical. In this context, financial sector reforms have to emphasize promoting financial inclusion, ensuring wide and deep financial markets and facilitating the growth of strong, competitive and sound financial institutions.
4. A major near-term challenge for the Reserve Bank is to deal with the unpleasant combination of subdued growth with emerging risk of high inflation, which poses a complex dilemma on the appropriate stance of monetary policy.
5. Large borrowing programmes and high fiscal deficits complicate the challenge even further by accentuating inflationary expectations, which could worsen the actual inflation situation over time while also putting upward pressure on interest rates.
6. In fact, well-developed financial markets are the most secured way of financing the government deficits not causing to more inflation.
7. For any early signs of recovery to gain momentum, private sector credit must grow. Better monetary policy transmission that could enhance the demand for credit is a key challenge, notwithstanding the usual dynamics of any credit market which may not respond to monetary policy actions.

8. Swings in capital flows and sudden stops can have a significant impact on exchange rates, domestic monetary and liquidity conditions and overall macroeconomic and financial stability.
9. For the economy as a whole, the most critical challenge is to revert to the high growth path, which would be possible only with a faster recovery.
10. Overall, Indian growth continues to be driven by domestic demand and domestic saving, with foreign capital supplementing within the prudent approach to sustainable current account deficit. Thus, return to 9 per cent growth would largely be determined by the country's structural fundamentals and the responsive macro policy environment.
11. Due to the global meltdown, the economy of India suffered as well. However, unlike other countries, India sustained the shock as an important part of its financial and banking sector is still under government regulation. Nevertheless, to cope with the present situation, the Indian government has taken a number of decisions like strengthening the banking and tertiary sectors, increasing the quantity of exports and lots more.
12. Half of the world's population is 'unbanked'. The result is that large portions of society cannot save or get credit, or are forced to access credit at inflated prices in informal markets- for example, through loan sharks-which can lead to inescapable debt spirals.<sup>(5)</sup> Very similar is the case in India.

## **1.7. REVIEW OF LITERATURE**

The contributions made by various scholars and experts in the field of Monetary Policy are really praiseworthy. Although various studies have been reviewed, only those works which are closely related to the present study are included here.

Gupta and Srinivasan (1984) <sup>(6)</sup> attempt to assess the impact of changes in administered prices on sectoral and overall price movements using a simple inter-sectoral model. The results of the study clearly show that, the impact of administered price changes on relative and absolute prices cannot be assessed without taking into consideration their mutual interactions. The success of administered price revisions as

an instrument to generate additional resource mobilization in the public sector cannot be assessed in a partial equilibrium model. And the inflating potential of changes in administered prices is significantly high and the potential for generating additional saving is much less than the nominal effects.

Paulson (1989)<sup>(7)</sup>, examines the impact of monetary policy on Indian economy in the pre-reform period. The study reveals that the single important factor that influences the money supply in the economy is the reserve money. He points out a positive correlation between inflationary pressures and administered prices, and what is required, he suggests, to achieve price stability, is a cordial and symbiotic relationship between monetary policy and fiscal policy.

Inflation is a monetary phenomenon (which is) fuelled by the excessive creation of money. In an article 'Inflation, Monetary Policy, and Financial Sector Reform,' published in Southern Economist, Tarapore (1993)<sup>(8)</sup> mentions inflation as a tax on the weaker sections of society. "The need for a monetary relaxation is often argued as being helpful to the weakest sections of society. Nothing could be farther from the truth. The curtailment of inflation is the best anti-poverty programme and therefore a strong anti-inflationary monetary policy is in consonance with societal concerns." He also predicts that the imminent developments in the securities market in the foreseeable future call for development of entirely new skills in the Reserve Bank, the commercial banks and financial institutions.

Our present policy-makers appear to be believers in shock therapy (Arun Ghosh, 1994)<sup>(9)</sup>. According to him, the objection to interest rates does not imply that all interest rates should suddenly and precipitately be brought down. Rather, two steps are necessary. First is a gradual lowering of the interest rate structure. Second, and more important, putting in place an institutional structure which would make adequate and timely credit available to small farmers, small industries, artisans etc... The ongoing reform of the financial sector is thus wholly misdirected, the reform has to be differently designed and implemented. The policy of imposing high interest rates on a stagnant economy is the direct result of the obsession of the present policy-makers with success in the financial markets rather than in the matter of growth of the real economy.

Unusual conditions leading up to the business cycle of 1989-93, made it difficult to recognize inflationary pressures. Several industrial countries pursued expansionary policies that caused their economies to overheat; policy corrections then led to asset-price deflation and severe recessions. Valuable lessons can be drawn from this experience (Garry Schinasi, 1995) <sup>(10)</sup>. The most important question is whether future business cycles, in a liberalized global financial environment, are likely to have a similar profile. Uncertainty about this issue reinforces the need for monetary policy to remain flexible in the future and for the development of more reliable tools for monitoring cyclical developments – including tools making it possible to assess asset-market conditions with greater accuracy.

Assessment of the money multiplier in the context of monetary control is given primary importance in the paper, Money Multiplier and Monetary Control, published in October 1995 (Nuran Gokbudak, 1995) <sup>(11)</sup>. Thus, the objective of this paper is to discuss the significance of the money multiplier and the monetary aggregate in terms of monetary control and to determine the reasons behind their variation. The importance of the money multiplier in terms of monetary policy is analyzed and along with the calculation of the money multipliers ( $k_1$  and  $k_2$ ), and their parameters, the components of Central Bank Money (CBM), which has been used as monetary aggregate, and their relative contributions are analyzed. The absolute and relative contributions of its components to a change in money supply (M2) are investigated by the author. This paper aims at revealing the importance of the control of both the monetary aggregate and the money multiplier in achieving the targeted level of money supply. This, in turn, will enable the Central Bank to provide price stability and high powered money is found to be the major contributor to the change in M2.

Sinha (1995) <sup>(12)</sup>, remarks that it is very urgent to keep the finance sector in sound health. This calls for great vigilance on the part of the regulatory authorities- the RBI, SEBI and the Central Government. The rate of monetary expansion should be brought down drastically. That is the real test of success of central banking policy. For all this, we need a truly independent central bank, whose most important quality must be to be able to say ‘No’ to excessive credit demand, be it from Government or the



commercial sector. Otherwise, inflation will become worse, contrary to the complacency one observes in this regard, on the part of Government and the RBI.

Monetary policy has now moved to the center stage of economic policy making, commends Rangarajan, (1996) <sup>(13)</sup> while delivering a lecture on ‘Some Issues on Monetary Policy’, conducted by the ASCI. In fact, many writers feel that inflation is endemic in the process of economic growth and inflation is treated more as a consequence of structural imbalance than as a monetary phenomenon, he remarked. The issue of objective has become important because of the need to provide clear guidance to monetary policy makers.

The finance minister has described his move to replace ad hoc treasury bills with ways and means advances as a “bold and radical change” which will “strengthen fiscal discipline” and provide “greater autonomy to the RBI in the conduct of monetary policy”. EPW Research Foundation (1997) <sup>(14)</sup> has some comments on it. According to them, it is time the RBI takes a fresh look at various instruments it has deployed or seeks to deploy which have an inherent tendency to prevent the banking and financial system from rendering their traditional role. They quote Nicholas Kaldor’s words: “Bank credit should expand at the right rate, neither more nor less. This is neither ensured nor prevented by attempts to control the vagaries of the money supply”.

The monetary-policy environment over the past decade in industrial countries has been increasingly characterized by low and stable inflation and often large movements in the prices of equities, bonds and foreign exchange, or financial assets more broadly. While volatility in part reflects the nature of asset prices, driven primarily by revisions in expectations of future returns, large movements raise questions about the appropriate response of monetary policy. In the past years, for instance, several central banks have expressed concern about such changes. In many formerly high yielding bond markets such as in Italy and Spain, yields fell by several percentage points, often putting pressure on the respective central banks to relax policy rates (Frank Smets, 1997) <sup>(15)</sup>.

The case of price stability as the objective of monetary policy rests on the fact that volatility in prices creates uncertainty in decision making. Rising prices affect

savings adversely while making speculative investments more attractive. The most important contribution of the financial system to an economy is its ability to augment savings and allocate resources more efficiently. A regime of rising prices initiates the atmosphere for promotion of savings and allocation of investment. While concluding his article, Rangarajan (1997) <sup>(16)</sup> suggests that Monetary growth should be so moderated that while meeting the objective of growth it does not push inflation rate beyond six percent.

What should be the objectives of monetary policy? Can monetary policy by itself ensure price stability? What are the respective roles of direct and indirect instruments of monetary control? Rangarajan (1997) <sup>(17)</sup> addresses these issues against the backdrop of theoretical developments as well as empirical evidence on the impact of monetary policy in India and elsewhere in the world. As the role of monetary policy is considered, the stress has been laid on monetary management. What the policy has been seeking to do is to modulate money supply growth consistent with expected real growth. Ensuring price stability requires the pursuit of a consistent policy over a period of time. This may at times make the central bankers unpopular. The need to take a view which is not short-term has indeed been one of the arguments advanced for greater autonomy for central banks.

Partha Ray *et al.* (1998) <sup>(18)</sup> explores new dimensions in the monetary transmission mechanism in the environment of liberalization initiated in the early 1990s and in the context of growing integration of financial markets. An examination of the Chakrabarty committee paradigm in this changed milieu is what motivated the author. The article tries to examine the role of two key variables in the conduct of monetary policy, viz., interest rates and exchange rates. The long-run relationship between money, prices, output, and exchange rate is examined and the impact of money market disequilibrium on interest rate is traced by testing the joint significance of the lags of disequilibrium errors. Interest rates and exchange rates are seen to be endogenously determined in the liberalized regime beginning 1992-93, raising the possibility of the change in transmission mechanism following the advent of financial reforms.

Ranjanendra Narayan Nag and Mallinath Mukhopadhyay (1998)<sup>(19)</sup> published an article about ‘Macro-Economic Effects of stabilization under Financial Repression’. The upshot of their analysis is that exchange rate flexibility increases the likelihood that monetary stabilization and financial liberalization can succeed in bringing down the inflation rate and in improving performance of the real sector specifically in the context of ever-increasing exposure of developing countries to the globalization process. The broad message of the paper is that light monetary policy and financial liberalization should be integrated with other components of stabilization, particularly exchange rate flexibility. One can also study about the nature of exchange rate dynamics in a financially repressed economy.

The amount of research efforts that has gone in to prove or disprove the basic premises of monetary economics, depending on one's predilections, is phenomenal. Fortunately, it has given rise to rich, innovative ideas, and influenced the thinking of those who wield considerable power in policy-making and decision-taking. In the process, it has enriched the Keynesian logic and framework and has brought about a sharp change in the processes that form part of the operating procedures of central banking (Reddy, 1998)<sup>(20)</sup>.

An objective analysis of the past few years suggests that a number of unhealthy developments have surfaced in the monetary and banking scene, resulting in starving production activities of bank credit (EPW research Foundation, 1999)<sup>(21)</sup>. The overall monetary policy stance projected by the RBI in recent policy statements belies the promise of providing a new perspective. The focus of these policy pronouncements has been overwhelmingly on promoting and developing further the money and government securities markets; the importance of bank credit remains neglected.

Manohar Rao (1999)<sup>(22)</sup> discusses the real and monetary aspects of short-run structural adjustment using a flow-of-funds methodology. Based upon such a framework, he then specifies an analytical basis which is capable of integrating the financial programming model of the Fund with the financial requirements approach of the Bank in a manner which removes the existing dichotomies between the real and financial sectors of the economy. The merged model, which defines monetary,

external, real and financial sector equilibrium, is then used to prescribe feasible stabilization policy options for the Indian Economy over the current fiscal year. The twin issues of interest rate and exchange rate determination, is becoming increasingly important. Only when its behavior is well understood, it will be possible to predict their effects on key macro-economic variables such as GDP, inflation, savings, investment and, above all, economic growth.

Rajwade (1999) <sup>(23)</sup> noted in his commentary on 'Perspectives on Monetary Policy' that: "The explosive growth of information technology could erode the power of central banks- noted in their monopoly over the creation of money".

Money at the basic level is anything generally accepted as a medium of exchange. The difficulties in quantifying money supply have been there, for sometime. Historically, barter was found inefficient because of different exchange rates. Now, these constraints can be removed, as E-cash replaces the currency. Thus the conventional 'money world' ceases to be the only medium of exchange, eroding the power of central banks.

As part of financial sector reforms, a number of steps have been taken to enhance the effectiveness of monetary policy and these include improvement in the payment and settlement systems, development of secondary market in government securities with a diversification of investor base, reduction in non-performing assets and reduction in the overall transactions costs. In particular, the recent initiatives of RBI to develop money market and debt markets should contribute to improving the transmission mechanisms of monetary policy. All the reforms in the monetary and financial sectors may not have the desired results with creditable fiscal adjustment (Reddy, 1999) <sup>(24)</sup>.

Despite the unfavorable fiscal environment, the Reserve Bank has been able, through a combination of measures, to bring down interest rates to realistic and relatively stable levels (EPW Research Foundation, 2000) <sup>(25)</sup>. For achieving, such a downward trend in interest rates, the RBI has adopted multiple strategies, the broad thrust of which is based on a refreshing change in perspectives on monetary policy. Therefore, stability or the minimization of volatility in the money market is pursued as

the allowed objective of policy. Effective checks and balances are put in place so that the market operates within a reasonable range. Such checks and balances are embedded in the strategies adopted which in turn encompass an active and stern application of all possible instruments in the RBI armory.

Development on the exchange rate front and the RBI's response to them has raised the issue of the basic approach to exchange rate management. The RBI seems to be falling between the two stools of liberalization and of fighting expectations and curbing speculation (EPW research Foundation, 2000) <sup>(26)</sup>. If the measures taken by the RBI have been able to generally curb destabilizing speculative activities to its satisfaction, then there is reason to believe that the evolving changes in the exchange rate of the rupee is based on certain fundamentals and that such changes should not be curbed by extraneous monetary policy measures. At the same time, the RBI ought to have tolerated some measured depreciation of the currency in effective trade-weighted terms as the current and prospective situation warrants it.

The article by Manohar Rao (2000) <sup>(27)</sup>, explores two main issues. First, it attempts to assess the two-way interactions between business cycles and exchange rates: initially by examining some of the main factors that influence exchange rates, and then by considering the role of exchange rates in stabilizing business cycles. Secondly, the paper provides an analytical framework which, by formalizing the nature of the relationships between key macro-economic variables, helps to forecast the exchange rate *inter alia* in the Indian context. The plausibility of all these forecasts implies that there is considerable basis for using the model not only for prediction but also for designing growth-oriented stabilization programmes as well as policy co-ordination strategies.

The relationship between budget deficits, money creation and debt financing suggests that interest rate targeting and inflation control are both monetary and fiscal policy issues. Manohar Rao (2000) <sup>(28)</sup> formalized these links within two analytical frameworks, static as well as dynamic. By highlighting the concepts of the 'high interest trap' and the 'tight money paradox', respectively, he suggests that, for any given deficit, there exist optimal levels of monetization and market borrowings. By

ensuring this optimal split between monetization and borrowings in the present, it would be possible to balance the future needs of the economy *vis-a-vis* the needs of the government and thereby avoid the high interest/inflation trap and the subsequent specter of an economic slowdown.

Drawing from recent experiences in India and abroad, Michael Debabrata Patra and Sunando Roy (2000)<sup>(29)</sup> assess the Indian approach to reinforcing financial stability. In the context of macroeconomic, macro and micro-prudential policies undertaken in India, the paper empirically evaluates the responses of various constituents of the banking system and finds differential responses.

Renu Kohli (2000)<sup>(30)</sup> analyzes the exchange rate behavior and its management in India. A scrutiny of the exchange rate management strategy of the RBI reveals a strong commitment to exchange rate stability and keeping the exchange rate aligned to one of its fundamentals, i.e., the price level. It was found a positive response of direct intervention activity, to a rise in exchange rate volatility. It was also found that intervention activity adjustments appear to be tied to the price level. The implications for intervention activity are even more significant in a situation where the capital account is liberalized. A rise in the scale of future intervention would therefore imply a significant build-up of reserves.

In the aftermath of the currency crises around the world, the role of the Central Bank's interventions in the foreign exchange market has gained an importance. It is obvious that such intervention affects the exchange rate in two ways; first, by affecting the extent of excess demand in the foreign exchange market, and thereafter through a complex interplay of the macro-economic variables. The literature has addressed this issue by estimating the so-called offset coefficients, a method that is ad hoc and that is marked by the conspicuous absence of an underlying macro-model. In this paper, Sumon Kumar Bhaumik and Hiranya Mukhopadhyay (2000)<sup>(31)</sup> build on the stylized Mundell-Fleming model, and derive an estimable reduced form of expression that allows us to link exchange rate movements with the RBI'S interventions. The model itself, the subsequent empirical results indicate that the effect on RBI's interventions in

the foreign exchange market is at best unclear. Specifically, given the time span of the data, the RBI's interventions in the market seem to have been ineffective.

The arguments for linking interest rates on small saving (SS) schemes to market rates and rationalizing the tax benefits available to them rest on removing the governments' arbitrary powers in a liberalized interest rate environment. If SS schemes become relatively unattractive as a result of the suggested measures, the government would need to borrow more from alternative sources. If total government borrowing is not kept in check, yields on government securities would go up and with it the interest rates on SS schemes would also warrant upward revision (Datar, 2001)<sup>(32)</sup>.

There have been significant financial sector reforms through 1990s. One of the major policy changes affecting the financial markets has been the reduction in government's recourse to claims on loanable funds through statutory liquidity ratio as well as high levels of cash Reserve Ratios. There is a general move towards market determined rates and flows in the financial sector. One area where administered rates are still important is the small saving instruments. If the overall balance of demand and supply of loanable funds is such that interest rates can be lower, the small saving rates do not let that emerge. Further, as interest rates decline, there would be significant gains in economic growth. Deepak Lal *et al.* (2001)<sup>(33)</sup> made an attempt to examine this viewpoint. They develop a monetarist model of the economy and assess the implications of alternative methods of financing the fiscal deficit of the government, central and states combined. The results support the view that overall interest rates would decline if the small saving rates were to be liberalized but the gains in economic growth would not be dramatic.

When the economy is in a crisis the Reserve Bank cannot sit back and say it has done enough by reducing interest rates and supplying liquidity to the market. It needs to operate on many fronts interest rates, general refinance, sector-specific refinance, directed credit norms and moral suasion to introduce dynamism into the bank's credit delivery system, commends EPW Research Foundation (2001)<sup>(34)</sup>.

In the recent past, the RBI has been using open market operations to sterilize the inflows of foreign capital so as to contain domestic monetary expansion. Due to a rise

in the income velocity of base money this has created an incentive for the government to resort more to market borrowings from banks which has raised real interest rates and which exerts a depressing impact on the growth of economic activity along with creating pressures for the inflation rate to increase. The changed environment calls for a reduction in government expenditures which, while reducing interest rates and enhancing the level of economic activity, will also help nudge the economy to a lower inflation level (Errol D'Souza, 2001)<sup>(35)</sup>.

Kangasabapathy (2001)<sup>(36)</sup> captures the historical perspective in respect of monetary policy underpinnings with particular reference to India. He also points out the limitations and constraints in pursuing monetary policy objectives and throws light on current mainstream economic thinking and perspective in the context of the changing economic environment world wide. In the recent times, due to the emergence of interest rate as an efficient variable in the transmission mechanism, the RBI has begun placing greater reliance on indirect instruments such as Repo, Bank rate, OMO etc., rather than the earlier practice of greater dependence on CRR alone. Another issue debated in the context of Central Bank autonomy is the separation of debt management and monetary management functions. At the same time, it would require a co-ordinated operation with monetary management to achieve a stable interest rate environment and market condition.

There are continuing debates on several issues connected with monetary policy. Questions have been raised on the objectives, instruments and impact of monetary policy. Monetary management in the 1980s and more particularly in the 1990s in India offers interesting insights on the role of monetary policy as an instrument of economic policy. The paper written by Rangarajan (2001)<sup>(37)</sup> draws some important lessons from this experience. Assigning to each instrument the most appropriate objective favours monetary policy as the most appropriate instrument to achieve the objective of price stability. It is this line of reasoning which has led to the single objective approach. A considerable part of the relevant research effort has been devoted to the trade-off between economic growth and price stability. According to the author, the efforts aimed at strengthening the institutional structure are a necessary part of the functions of a central bank.



Banking and stock market systems are compared, in an article ‘Macro economic Policy and asset Markets’ by Romar Correa (2001)<sup>(38)</sup> from the viewpoint of macro economic policy. The author suggests that the former has desirable properties with reference to the objective of increasing output and employment. It is indeed welcome that the interest rate has emerged as the control variable in the hands of the monetary authorities. The goal variable remains uncertain and the adherence to multiple indicators does not provide any indication of the weights in the utility function of the authorities. Since inflation is not a problem, it is suggested that credit be the sole indicator of policy and the objective be full employment.

According to Sitikantha Pattnaik and Arghya Kusum Mitra (2001)<sup>(39)</sup>, while the rationale for raising the interest rate to defend an exchange rate under speculative attack is well-grounded on economic and financial theories, empirical validation of the effectiveness of such a policy stance has generally been difficult and is shrouded with conflicting findings. Assignment of Monetary Policy to the exchange rate objective in a regime of managed flexibility may involve a temporary loss of monetary independence and some sacrifice on other objectives of monetary policy, particularly growth and stability of the banking system. However, when monetary measures succeeded in ensuring an orderly condition in the foreign exchange market, the benefits may outweigh the potential costs stemming from an interest rate defense of the exchange rate. In India, such an interest rate defense seems to have worked in stemming speculation during the times when the rupee comes under pressure.

In the pursuit of non-inflationary growth and stability and efficiency of the financial system and in the context of the recent moderation in economic activity in India, the current policy preference is towards softer interest rates while imparting greater flexibility to the interest rate structure in the medium term (Barman, 2002)<sup>(40)</sup>. Model estimated forecasts of output, inflation and liquidity comprise important elements of the information set used by the policy makers in the conduct of monetary policy. These forecasts are generated by using structural models, time series models and industrial outlook surveys. The short-term liquidity forecast is a more complex area and the appropriate approach and method for generating liquidity forecasts is being

explored in India. The paper discusses these issues and highlights the problems that often warrant methodological refinements.

Bimal Jalan (2002)<sup>(41)</sup> is of the opinion that there has been progressive intensification of financial sector reforms, and the financial sector as a whole is more sensitized than before to the need for internal strength and effective management as well as to the overall concerns for financial stability. At the same time, in view of greater disclosure and with tougher prudential norms, the weaknesses in our financial system are more apparent than before. The structure of the financial system is changing and in a fundamental sense regulators and supervisors are under the greatest pressures of change and bear the larger responsibility for the future. For both the regulators and the regulated eternal vigilance is the price of growth with financial stability.

Mere expansionary signals from the RBI through reduction of the repo rate and the Bank rate and through money market instruments will not be enough (EPW Research Foundation, 2002)<sup>(42)</sup>. The RBI will need to address structural disabilities and distorted commercial banking behavior in response to financial sector reforms.

With a series of monetary measures undertaken by the Reserve Bank of India in the recent period combined with somewhat sharp reductions of nominal interest rates on small savings, the overall structure of interest rates in the economy has attained a state of relative stability and it can also be characterized as generally well-balanced. EPW Research Foundation (2002)<sup>(43)</sup> commends that with alround downward movement of rates of all types and maturities in the past three years, near-stability in the interest rates profile has been achieved. RBI policies of low Bank rate, active management of liquidity and signaling its preference for softening of interest rates have contributed to this development.

George Macesich (2002)<sup>(44)</sup> discusses the role of money and the performance of monetary regimes within a national economy. Power and authority in monetary matters are shared between the Finance Ministry and the Central bank. The inter-linkage between political power structures and policy introduces an element of discretion in monetary policy. The exercise of such discretion, according to the author, affects the

conduct of monetary policy. The efficacy of monetary policy can be substantially enhanced through imposition of constraints on the use of discretionary authority in monetary affairs by bureaucracy and political elites. The author also provides interesting historical accounts of the rules versus discretion debate.

Nachane *et al.* (2002) <sup>(45)</sup> examine whether monetary policy has similar effects across major states in the Indian Polity. Impulse response functions from an estimated Structural Vector Auto Regression (SVAR) reveal two sets of states: a core of states that respond to monetary policy in a significant fashion vis-à-vis others whose response is less significant. The authors attempt to trace the reasons for the differential response of these two sets of states in terms of financial deepening and differential industry mix. Further investigation is, of course, necessary to confirm the presence and extent of such asymmetries as well as examine in detail their sources. While it may be premature to speculate on the nature of the required changes, there is no gainsaying that in view of severe resource constraints faced by several Indian states, monetary policy would need to take regional perspective into account.

The process of financial change 1991 exerts significant influences on the empirical definition of money, the money supply process and its transmission and on the demand for money. This not only raises issues about the instability of the relationship between monetary aggregates and the aspects of the macro-economy but also brings into question the potency of monetary policy. If financial change is indeed invoking fundamental alterations along these lines, then they would be manifested in at least certain quantifiable dimensions. Nachane and Lakshmi (2002) <sup>(46)</sup>, identifies two such dimensions, viz., monetary policy lag and the causal associations of money with important macro economic magnitudes (specifically output and prices).

The financial markets and systems in India have become more dynamic and ever changing/ expanding (Prabhakara Rao, 2002) <sup>(47)</sup>. According to him, it is really challenging to update ourselves in the dynamic financial environment and to visualize the future.

Even as banks have come to possess a growing share of the community's financial resources, it is the absence of dynamism shown by them in expanding their

credit base regionally, functionally and by the size of borrowers, that continues to hurt the process of domestic investment and growth (Prasanth and Shetty, 2002)<sup>(48)</sup>. It is necessary for them in a competitive environment to introduce more dynamic instruments of lending and enhance organizational capabilities to shoulder more nuanced lending practices, both of which are missing in the current banking scenario. The RBI has bestowed vast attention on strengthening money market activities of banks but has done precious little in monitoring the performance of banks in the above areas.

Raghbendra Jha (2002)<sup>(49)</sup> tries to assess why lowering interest rates is proving to be hard in India. He highlights the role of three factors, namely, high public debt and its structure, the overhang of non-performing assets and the policy being pursued with respect to accumulation of foreign exchange reserves. These three factors are causally linked to each other and should not be looked upon as mutually exclusive contributors. While it is good to have the benefits of the policy of high foreign exchange reserves, this is levying a cost on the economy in terms of interest rates and debt service payments that are higher than they need be and lead to partial loss of control over money supply. However, as the Thai experience in 1977 vividly illustrates, high foreign exchange reserves alone cannot provide security against macro-economic downturns and it is important to design an appropriate foreign exchange reserve policy.

Reddy (2002)<sup>(50)</sup> opines that central bank has a developmental role but it is a different type of role, namely, not directly financing development but help to develop systems, institutions and procedures to enable a paradigm shift in public policy and the process enhance corporate governance also in PSBS, in particular.

Reddy (2002)<sup>(51)</sup> remarks that in order to gain greater effectiveness in money market operations of the Reserve Bank through Liquidity Adjustment Facility, the automatic access of refinance facility from the RBI to banks also have to be reassessed. Thus, as CRR gets lowered and repo market develops, the refinance facilities may be lowered or altogether removed and the access to the non-collateralized call money market restricted with the objective of imparting greater efficacy to the conduct of monetary policy.

Monetary policy is increasingly focused on efficient discharge of its objective including price stability and this, no doubt, will lead to poverty alleviation, indirectly; while the more direct attack on poverty alleviation would rightfully be the preserve of fiscal policy. Monetary and financial sector policies in India should perhaps be focusing increasingly on what Dreze and Sen Call “growth mediated security” (Reddy, 2002)<sup>(52)</sup>.

According to Shankar Acharya (2002)<sup>(53)</sup>, conceptualization and practice of monetary policy has clearly undergone a sea change during the nineties. According to him, monetary policy at the end of the decade was a far more sophisticated operation than at its beginning. However, some of the old problems and dilemmas remain. In particular, the efficacy of monetary policy continued to be constrained by an excessively loose fiscal policy as well as an insufficiently responsive financial system.

The paper, ‘Evolving Monetary Policy in India’ (Vasudevan, 2002)<sup>(54)</sup>, reviews the process of monetary policy formulation, with some stylized facts that monetary policy pursued. The author discusses the issues concerning the objectives and conduct with reference to targets and the indicators. The RBI has been cautiously adopting a ‘Just do it’ approach and not any rule-based regime. This is not because of any given policy strategy but because of indefiniteness about the market behaviour and market developments in the context of financial development and the related uncertainties. In general, the bank has signaled its intention, towards the end of the twentieth century, to move away from monetary targeting. Although not clearly specified, the policies pursued so far indicate their focus on interest and exchange rates with a view to achieve a better allocative efficiency of resources over the medium term.

In India, along with other apex organizations, the RBI has also initiated various measures to identify, implement and supervise good corporate governance practices in the financial sector. Implementation of international best practices in the financial sector is being increasingly viewed as an important corner-stone for protection of the interests of the stockholder of financial companies. And, in a broader sense, it is one of the important preconditions for the maintenance of financial stability (Vepa Kamesam, 2002)<sup>(55)</sup>.

The modern central banker needs to be open to the reality of the ongoing structural changes around him and to keep an open mind as to how monetary policy might best be used to enhance the welfare of the citizens for whom he is responsible (William, 2002)<sup>(56)</sup>. According to him, a longer-term commitment to price stability, supplemented by concerns as to how financial instability might impede the pursuit of this objective, should be the principal objective for monetary policy today.

Some commentators have recently argued that an exclusive focus of monetary policy on achieving price stability is inappropriate in a world where asset price misalignments and financial imbalances are increasingly prevalent. Bank for International Settlements (2003)<sup>(57)</sup> reviews the argument that monetary policy should react to asset price movements and/or financial imbalances over and above their impact on the inflation outlook. It concludes that, while monetary policy makers probably should take note of such developments, the macroeconomic implications can be adequately embraced within an appropriately flexible and forward-looking concept of inflation targets. In a simple New Keynesian model, modified to allow for capital and debt accumulation, the author then shows that the possibility of credit crunches may affect the design of the optimal policy in subtle and unexpected ways.

The RBI has been using open market operations to sterilize the inflows of foreign capital so as to contain domestic monetary expansion. At the same time, it is intervening in foreign exchange markets. With downward price rigidity and shocks such as declining foreign interest rates and declining import tariffs as the economy integrates into the world economy, it is imperative to revise the money supply target so as to enable the economy to adjust to these shocks better (Errol D'Souza, 2003)<sup>(58)</sup>. The current policy of sterilization and containment of the money supply restricts the process of income generation and macroeconomic adjustment in the force of these shocks.

The management of liquidity poses a major challenge to the conduct of monetary policy in an environment of financial liberalization. Indranil Sen Gupta *et al.* (2003)<sup>(59)</sup> has attempted to assess liquidity conditions in the market for bank reserves in terms of central bank balance sheet flows. They construct the concepts of autonomous liquidity (AL) and discretionary liquidity (DL) in the Indian context and finds that there

is a systematic response in the Reserve Bank's discretionary operations to offset 'autonomous' shocks to the market for bank reserves.

Kannan *et al.* (2003)<sup>(60)</sup>, in an article 'Liquidity Measures as Monetary Policy Instruments,' attempts to build a frame work to quantify the developments in the money markets in quantum terms through autonomous and discretionary liquidity measures. The concepts of discretionary and autonomous liquidity measures make LAF a powerful instrument of monetary policy and the development of the money market is necessary for its efficient management. He also points out that, an active open market operation was pursued by the RBI as an indirect instrument of Monetary Policy in the last three-four years.

Manohar Rao (2003)<sup>(61)</sup> exposits the problems of monetary policy design within the limits of an empirical framework for the Indian Economy by examining four main issues. The paper first looks at the main features of business cycles in the Indian economy over the past 50 years. Second, it empirically measures the threshold rate of inflation within the framework of growth-inflation trade-offs and derives the optimal rate of monetary expansion needed to smooth out fluctuations and stabilize the inflation rate at its threshold level. Third, it specifies a theoretical model (linking growth, inflation, interest rates and money supply) capable of deriving an optimal fiscal deficit which maximizes the real growth rate; and applies it within the Indian context to measure the desired amount of fiscal consolidation. Finally, it provides estimates of a comprehensive macroeconomic conditions index which can very effectively be incorporated into a simple Taylor-type interest rate rule (reaction function) for monetary policy. Ever since liberalization, there has been an upsurge of interest in streamlining the operational framework of monetary policy. According to the author, monetary policy can be directed also towards revitalizing output growth in the short-run.

The objective of the study, 'Exchange Rate Policy and Management-The Indian Experience' written by Pattnaik *et al.* (2003)<sup>(62)</sup>, is to present the Indian experience of exchange rate management against the backdrop of international developments both at the theoretical and empirical levels. Monetary policy has been successful in ensuring

orderly conditions in the foreign exchange market and containing the impact of exchange rate pass-through effect on domestic inflation. Real shocks are predominantly responsible for movements in real as well as nominal exchange rate, monetary policy shocks have been relatively unimportant. A policy of benign neglect of the exchange rate is impractical and unrealistic since movements in exchange rate influence the monetary transmission. Overall, the analysis indicates that exchange rate management in India has been consistent with macroeconomic stability.

Philip Arestis and Malcolm Sawyer, (2003)<sup>(63)</sup> in their paper discuss the following: When the level of aggregate demand is stable and only effected by random shocks and the rate of interest, then monetary policy (in the form of varying the rate of interest) may be an effective way of offsetting those shocks. This, however, is predicated on the rate of interest that would equate aggregate demand with supply-side equilibrium, being achievable (that is positive and consistent with exchange rate requirements). But the power of monetary policy needs to be compared with the power of fiscal policy. In this paper, it is argued that shifts in the level of aggregate demand (arising from shifts in confidence and world demand) cannot be readily offset by monetary policy. Further, fiscal policy remains a potent tool for offsetting major changes in the level of aggregate demand.

Robert Nobay and David Peel (2003)<sup>(64)</sup> consider optimal monetary policy in the context of the central bank adopting an asymmetric objective function. The results show that under asymmetric preferences, many of the extent results on the time consistency problem need no longer hold. In this paper, they have investigated the implications for optimal discretionary policy of assuming that the central bank has an asymmetric loss function. The results presented in this paper underline the fact that even limited realism beyond the conventional approach to modeling the authorities' preferences can deliver results that are substantively at variance with the results obtained under quadratic preferences.

The working paper published by The Levy Economics Institute of Bard College (2003)<sup>(65)</sup> considers the nature and role of monetary policy when money is envisaged as credit money endogenously created within the private sector, i.e., by the



banking system. Monetary policy is now based in many countries on the setting or targeting of a key interest rate, such as the Central Bank discount rate. The amount of money in existence then arises from the interaction of the private sector and the banks, based on the demand to hold money and the willingness of banks to provide loans. Monetary policy has become closely linked with the targeting of the rate of inflation. This paper considers whether monetary policy is well-equipped to act as a counter-inflation policy and discuss the more general role of monetary policy in the context of the treatment of money as endogenous. Currently, two schools of thought view money as endogenous. One school has been labeled the "new consensus" and the other the Keynesian endogenous (bank) money approach. Significant differences exist between the two approaches; the most important of these, is in the way in which the endogeneity of money is viewed. Although monetary policy is essentially interest rate policy and it appears to be the same in both schools of thought, it is not. This paper investigates the differing roles of monetary policy as per these two schools.

A central tenet of the so-called new consensus view in macroeconomics is that there is no long-run trade-off between inflation and unemployment. The main policy implication of this principle is that all monetary policy can aim for is modest, short-run output stabilization and long-run price stability, i.e., monetary policy is neutral with respect to output and employment in the long run. However, some research on this suggests that persistent but nevertheless transitory changes in aggregate demand may have a permanent effect on output and employment. If this is the case, then, the monetary policy have long-run effects on real variables. Giuseppe Fontana and Alfonso Palacio-Vera (2005) <sup>(66)</sup> provides an overview of this research and explore how monetary policy should be implemented once these long-run effects are acknowledged.

Kannan *et al.* (2006)<sup>(67)</sup> attempt to construct a monetary conditions index (MCI) for India in order to take both interest rate and exchange rate channels simultaneously into consideration, while evaluating the stance of monetary policy and evolving monetary conditions. A "broad" MCI has also been constructed which incorporates credit growth as an additional indicator of monetary conditions. Their results reveal interest rate to be more important than exchange rate in influencing monetary conditions in India. In the Indian context, MCI has been effective to put together more

than one indicator in order to provide a better assessment of the stance of monetary policy and reveals its role as a leading indicator of economic activity and inflation. Accordingly, the findings underscore the potential of MCI as a valuable indicator of monetary policy in India supplementing the existing set of multiple indicators adopted by the monetary authority.

Deepak Mohanty (2010) <sup>(68)</sup> discusses the global financial crisis and monetary policy response in India. At present, the focus around the world and also in India has shifted from managing the crisis to managing the recovery. The key challenge relates to the exit strategy that needs to be designed, considering that the recovery is as yet fragile but there is an uptake in inflation, though largely from the supply side, which could engender inflationary expectations. Now, the RBI's measures should help anchor inflationary expectations, he opines, by reducing the overhang of liquidity without jeopardizing the growth process as market liquidity remains comfortable.

Santosh Mehrotra (2010) <sup>(69)</sup> discusses the role of policy makers in ensuring sustained economic growth, especially in an atmosphere of global economic crisis. The global economic crisis hit the Indian economy at a time when it was riding a wave of unprecedented high growth. He argues that while the global crisis has particularly impacted exports, and hence growth, and worsened the fiscal balance, India is already returning to an 8 per cent per annual growth. This limited impact, has been driven by the fact that both savings and investments have risen sharply in the first decade of the millennium, and are likely to remain high. It is domestic savings/investment as well as domestic markets that are driving the growth. The paper also highlights a series of long-term challenges that policy-makers must address if rapid growth is to be sustained, and poverty be reduced sharply.

## **References**

1. Reserve Bank of India: *Annual Report for 2009-10*, Mumbai.
2. India and the Global Economic Crisis, PDF File, [www.iamrindia.gov.in](http://www.iamrindia.gov.in)
3. Reserve Bank of India: *Annual Report for 2008-09*, Mumbai.
4. India Economic Reform, Business Maps of India, [business.mapsofindia.com](http://business.mapsofindia.com)
5. Asia Leading the Way, *Finance and Development, A Quarterly Publication of the International Monetary Fund*, June, 2010, Vol.47, No.2, pp.4-7.
6. Gupta, S.P. and Srinivasan, T.G. 1984. 'Inflation and the Role of Administered Prices' *Economic and Political Weekly*. Sep.8, p.1579.
7. Paulson M. Chunkapura, 1989. *Monetary Policy*, Reliance Publishing House, New Delhi, p.323.
8. Tarapore, S.S., 1993. 'Inflation, Monetary Policy, and Financial Sector Reform'. *Southern Economist* 32(1), May, p.41-42.
9. Arun Ghosh, 1994. 'Adjustment Programs and Interest Rate Policy'. *Economic and Political Weekly*, 29(25) June 18, p.1501-1505.
10. Garry Schinasi, J. 1995. 'Asset prices, Monetary policy, and the Business Cycle'. *Southern Economist*, 34(4), June 15, p.18-21.
11. Nuran Gokbudak, 1995. 'Money Multiplier and Monetary Control', The Central Bank of the Republic of Turkey, *Quarterly Bulletin*, Ankara, October. pp.107-133
12. Sinha, S.L.N. 1995. 'Some Thoughts on Monetary and Credit Policy'. *Southern Economist*, 34(1), May 1, p.1-3.
13. Rangarajan, C. 1996. 'Some Issues in Monetary Policy.', ASCI Foundation Lecture, Dec.6, p.1-3 of 3.
14. EPW Research Foundation, 1997. 'Chasing a monetarist. Will-'o'-the-Wisp' *Economic and Political Weekly*, March 22, p.576-580.
15. Frank Smets, 1997. 'Financial-asset Prices and Monetary Policy: Theory and Evidence', BIS Working Paper No. 47. Basel, Switzerland, December, 41(1), pp.1-56.

16. Rangarajan, C. 1997. 'Monetary Policy and Price Stability'. *Southern Economist*, 36(8), August 15, p.34-36.
17. Rangarajan, C. 1997. 'Role of Monetary Policy'. *Economic and Political Weekly*, 32(52), December 27, p.3325-3328.
18. Partha Ray, Itimanshu Joshi and Mridul Sagar, 1998. 'New Monetary Transmission channels-Role of Interest Rates and Exchange Rate in conduct of Indian Monetary Policy'. *Economic and Political Weekly*, 33(44), October 31, p.2787-2784.
19. Rajanendra Narayan Nag and Mallinath Mukhopadhyay, 1998. 'Macro-Economic Effects of stabilization under Financial Repression'. *Indian Economic Review*, 38 (1), January-June, p.1-17.
20. Reddy, Y.V. 1988. 'Money and Finance through the Looking Glass', (Review Article of *Indian Economy : Essays on Money and Finance*, by C. Rangarajan, UBS Publishers' Distribution, New Delhi), [www.rbi.org.in](http://www.rbi.org.in)
21. EPW Research Foundation, 1999. 'Monetary Policy: Promise of New Perspective Belied'. *Economic and Political Weekly*, November 20, p.3254-3260.
22. Manohar Rao, M.J. 1999. 'Financial Programming and stabilization Policy options for Macro-Economic Adjustment'. *Economic and Political Weekly*, 34(3-4), January 16, p.99-114.
23. Rajwade, A.V., 1999. 'Perspectives of Monetary Policy', *Economic and Political Weekly*, 34(48), November 27, p.3339-3340.
24. Reddy, Y.V. 1999. 'Monetary Policy in India', A speech delivered on Fourth Securities Industry Summit, in Mumbai, on 26 May 1999, 53(7), p.945-950.
25. EPW Research Foundation, 2000. 'Success on Interest Rates Front'. *Economic and Political Weekly*, 35(3), January 15, p.82-88.
26. EPW Research Foundation, 2000. 'Exchange Rate Management'. *Economic and Political Weekly*, August 12, p.2891-2897
27. Manohar Rao, M.J. 2000. 'On predicting exchange Rates'. *Economic and Political Weekly*, January 29, p.377-386.

28. Manohar Rao, 2000. 'Fiscal Deficits, Interest Rates and Inflation-Assessment of Monetization strategy'. *Economic and Political Weekly*, July 22, p.2637-2645.
29. Michael Debabrata Patra and Sunando Roy, 2000. 'Financial Stability: A Survey of the Indian Experience', *RBI Occasional Papers, Summer*, Vol. 21(1), [www.rbi.org.in](http://www.rbi.org.in)
30. Renu Kohli, 2000. 'Aspects of Exchange Rate Behaviour and Management in India 1993-98', *Economic and Political Weekly*, January 29, p.365-372.
31. Suman Kumar Bhaumik and Hiranya Mukhopadhyay, 2000. 'RBI's Intervention in Foreign exchange Market-An Econometric Analysis'. *Economic and Political Weekly*, January 29, p.373-376.
32. Datar, M.K., 2001. 'Interest Rates, on small savings and PF Schemes', *Economic and Political Weekly*, December 1, pp.4450-4451
33. Deepak Lal, Shashanka Bhide, and Deepa Vasudevan, 2001. 'Financial Exuberance – Savings Deposits, Fiscal Deficits and Interest Rates in India'. *Economic and Political Weekly*, November 3, pp.4196-4203.
34. EPW Research Foundation, 2001. 'Imparting Dynamism to credit Delivery'. *Economic and Political Weekly*, October 20, pp.3963-3967.
35. Errol D'Souza, 2001. 'The Changing Monetary Environment'. *Economic and Political Weekly*, January 27, pp.299-301.
36. Kangasabapathy, R. 2001. 'Monetary Policy Underpinnings – A perspective'. *Economic and Political Weekly*, January 27, pp.303-310.
37. Rangarajan, C. 2001. 'Some critical Issues in Monetary Policy'. *Economic and Political Weekly*, June 16, pp.2139-2146.
38. Romar Correa, 2001. 'Macro economic Policy and asset Markets'. *Economic and Political Weekly*, January 27, pp.347-349.
39. Sitikantha Pattnaik and Arghya Kusum Mitra, 2001. 'Interest Rate Defense of Exchange Rate – Tale of the Indian Rupee'. *Economic and Political Weekly*, November 24, pp.4418-4427.

40. Barman R.B. 2002. "Forecasts of economic indicators for monetary policy in India: an assessment", *IFC Bulletin*, 13, pp.80-93.
41. Bimal Jalan, 2002. 'Indian Banking and Finance: Managing New Challenges', *RBI Bulletin*, February. pp.71-86.
42. EPW Research Foundation, 2002. 'Stable Interest Rates Profile'. *Economic and Political Weekly*, January 19, pp.182-188.
43. EPW Research Foundation, 2002. 'Credit Policy: Beyond Expansionary Signals'. *Economic and Political Weekly*, March 16-22, Vol.37(11), p.992
44. George Macesich, 2002. '*Money and Monetary Regimes: Struggle for Monetary Supremacy*'. Greenwood Publishers, CT, U.S.A. p.332
45. Nachane, D.M., Partha Ray and Saibal Ghosh, 2002. 'Does Monetary Policy Have Differential State-level Effects? – An Empirical Evaluation'. *Economic and Political Weekly*, 37(47), November 23, pp.4723-4728.
46. Nachane, D.M. and Lakshmi, R. 2002. 'Changing Monetary Policy lags and Liberalization in India'. *The Indian Economic Journal*, Vol.50(1), July-Sep., ([www.indianeconomics.org](http://www.indianeconomics.org))
47. Prabhakara Rao, C.H. 2002. 'Money Market Developments: A Review'. ICFAI Press Research Centre, *Business standard*, December 24. [www.business-standard.com](http://www.business-standard.com)
48. Prasanth, V.P. and Shetty, S.A., 2002. 'Banking: Missing Dynamism'. *Economic and Political Weekly*, February 16, p.598-604.
49. Raghendra Jha, 2002. 'Downward Rigidity of Indian Interest Rates'. *Economic and Political Weekly*, February 2, p.469-474.
50. Reddy, Y.V. 2002. 'Indian Banking: Paradigm shift in Public Policy'. *RBI Bulletin*, February. [www.rbi.org.in](http://www.rbi.org.in)
51. Reddy, Y.V. 2002. 'Monetary and Financial Sector Reforms in India; A practitioners' Perspective'. *RBI Bulletin*, May. [www.rbi.org.in](http://www.rbi.org.in)
52. Reddy, Y.V. 2002. 'Public sector Banks and the governance challenge: Indian Experience'. *RBI Bulletin*, May. Pp 337-356.

53. Shankar Acharya, 2002. 'Macro Economic Management in the Nineties'. *Economic and Political Weekly*, April 20, p.1515-1538.
54. Vasudevan, A. 2002. 'Evolving Monetary Policy in India: Some Perspective'. *Economic and Political Weekly*, 37(11), March 16, p.1055-61.
55. Vepa Kamesam, 2002. 'Indian Economy – Financial Sector Reforms and Role of RBI'. *RBI Bulletin*, May. [www.rbi.org.in](http://www.rbi.org.in)
56. William, R., 2002. 'Changing views on how best to conduct Monetary policy: The last fifty years'. *RBI Bulletin*, January, pp.9-19. [www.rbi.org.in](http://www.rbi.org.in)
57. Charlse Bean, 2003. 'Asset Prices, Financial Imbalances and Monetary Policy:Are Inflation Targets Enough?', Bank for International Settlements, Basel, 29 March 2003. pp.48-76
58. Errol D'Souza, 2003. 'What is Monetary Policy Doing?'. *Economic and Political Weekly*, February 22, pp.821-823.
59. Indranil Sen Gupta, Indranil Bhattacharyya, Satyananda Sahoo and Siddhartha Sanyal. 2003, 'Anatomy of Liquidity Management'. *Journal of Economics and Business*, Vol.55(4), pp.353-370.
60. Kannan, R., Indranil Sen Gupta and Sidharathan Sanyal, 2003. 'Liquidity Measures as Monetary Policy Instruments'. *Economic and Political Weekly*, October 4, p. 4251-4259.
61. Manohar Rao, 2003. 'Science of Monetary Policy –Some perspectives on the Indian Economy'. *Economic and Political Weekly*, February 22, p.809-820.
62. Pattnaik, R.K., Nuneesh Kapur and Dhal, S.C. 2003. 'Exchange Rate Policy and Management-The Indian Experience'. *Economic and Political Weekly*, May 31, p.2139-2153.
63. Philip Arestis and Malcolm Sawyer, 2003. 'On the Effectiveness of Monetary Policy and Fiscal Policy'. Working Paper No. 369, Levy Economics Institute of Bard College, New York, January. [www.levyinstitute.org](http://www.levyinstitute.org)

64. Robert Nobay, A. and David A Peel, 2003. 'Optional Discretionary Monetary Policy in a model of Asymmetric Central Bank Preferences'. *The Economic Journal*, July, pp.657-665.
65. The Levy Economics Institute of Bard College, 2003. 'The Nature and Role of Monetary Policy When Money is Endogenous'. Working Paper, New York, March. No. 358, [www.levyinstitute.org](http://www.levyinstitute.org)
66. Giuseppe Fontana and Alfonso Palacio-Vera, 2005. 'Are Long-run Price Stability and Short-run Output Stabilization All that Monetary Policy Can Aim For?', In the Working Paper No. 430 November, [www.levyinstitute.org](http://www.levyinstitute.org)
67. Kannan, R., Siddhartha Sanyal and Binod Bihari Bhoi, 2006. 'Monetary Conditions Index for India', *Reserve Bank of India Occasional papers*, Vol.27(3), Winter, pp.57-86.
68. Deepak Mohanty 2010. 'Implementation of Monetary Policy in India'. Speech Delivered at the Banker's Club, Bhubaneswar on 15<sup>th</sup> March, [www.rbi.org.in](http://www.rbi.org.in)
69. Mehrotra, Santosh, 2010, India and the Global Economic Crisis, (*This paper was presented at UK Development Studies Association Conference, U.K*), [www.iamrindia.gov.in](http://www.iamrindia.gov.in)



**CHAPTER -II**

**MONETARY THEORY AND POLICY**

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### **MONETARY THEORY AND POLICY**

This chapter is intended to provide the theoretical background of the study. It covers areas such as, role of money, monetary theories, definition, objectives, targets and indicators of monetary policy, and a brief overview on the importance of monetary policy in economic activity.

#### **2.1. ROLE OF MONEY IN ECONOMIC ACTIVITY**

Role of money in its static form refers to the functions of money. In the dynamic form, money's role explains the contributions it can make. To the economic agents like consumer, producer and distributor, money is the basic concept on which they play their role. The role of money is of extra-importance in the way of economic progress of a country.

##### **2.1.1. The Narrow and Broad Definitions of Money**

There has been lot of controversy and confusion over the meaning and nature of money. As pointed out by Scitovsky, "Money is a difficult concept to define, partly because it fulfils not one but three functions, each of them providing a criterion of moneyness...those of unit of account, a medium of exchange, and a store of value".<sup>(1)</sup> Moneyness means liquidity. All things which possess liquidity have moneyness.

Sir John Hicks functionally defines money as "money is what money does".<sup>(2)</sup>

Some economists define money in legal terms saying that "anything which the state declares as money is money." A proper definition of money is one which signifies the various functions performed by it. From this point of view Crowther's definition seems to be proper. He says, "For most purposes money can be defined as anything that is generally acceptable as a means of exchange (i.e. as a means of settling debts) and at the same time acts as a measure and as a store of value".<sup>(3)</sup>

Johnson (1969) distinguishes few main schools of thought over the definition of money.<sup>(4)</sup>

### **The Traditional Definition of Money**

According to the traditional view (currency school), money is defined as currency and demand deposits, and its most important function is to act as a medium of exchange. Keynes in his general theory followed the traditional view. Hicks (1946) pointed out a threefold traditional classification of the nature of money: “to act as a unit of account (or measure of value as Wicksell put it), as a means of payment, and as a store of value”.<sup>(5)</sup>

The Keynesians place greater emphasis on the interest elasticity of the demand function for money<sup>(6)</sup>. Empirically, they forged a link between the stock of money and output via the rate of interest. The Banking School criticized the traditional definition of money as arbitrary and narrow.

### **Friedman’s Definition of Money**

The monetarist (or Chicago) view is associated with Prof. Friedman and his followers at the University of Chicago. By money Friedman means “literally the number of dollars people are carrying around their pockets, the number of dollars they have to their credit at banks in the form of demand deposits and commercial bank time deposits”.<sup>(7)</sup> Thus he defines money as “the sum of currency plus all adjusted deposits in commercial banks”.<sup>(8)</sup>

This was a narrow definition of money. Friedman gives two types of definitions of money, one on the theoretical basis and the other on empirical basis. He is, not rigid in his definition of money and takes a broader view which includes bank deposits, non-bank deposits and any other type of assets through which the monetary authority influences the future level of income, prices, employment or any other important macro variable.

### **The Radcliffe Committee's Definition**

The Radcliffe committee defined money as “note plus bank deposits”<sup>(9)</sup>. It includes as money only those assets which are commonly used as media of exchange. Assets refer to liquid assets. This is interpreted widely to include credit. Thus the whole liquidity position is relevant to spending decisions. Spending is not limited to cash or money in the bank but the amount of money people think they can get hold of either by selling an asset or by borrowing or by receipts of income from say, sales.

### **The Gurley-Shaw Definition**

Gurley and Shaw regard a substantiate volume of liquid assets held by financial intermediaries and the liabilities of non-bank intermediaries as close substitutes for money. Intermediaries provide substitutes for money as a store of value. Money which is defined as currency plus demand deposits is only one liquid asset. They have thus formulated a wider definition of money based upon liquidity which includes bonds, insurance reserves, pension funds, savings and loan shares. They believe in the velocity of the money stock which is influenced by non-bank intermediaries. Their view on the definition of money are based on their own and Goldsmith's empirical findings.<sup>(10)</sup>

### **The Pesek and Saving Definition**

According to Pesek and saving, money should include demand deposits of banks as well as money issued by Government.<sup>(11)</sup> They exclude time and saving deposits from bank money. They regard total money which includes demand deposits as net wealth of society. They contrast money with debt. Money does not pay interest but debt yields interest. Debt itself is not wealth because those who hold bank money consider it as an asset while banks consider it as an effective liability. Thus, Pesek-Saving follows a usable definition of money which consists of three conditions. First, they regard commodity money and fiat money as assets to their holders and liabilities to no one. Second, the Government grants monopoly rights to commercial banks to produce money who, in turn, exercise it by selling bank money for the private debts of individuals. Third, if it is costless to produce bank money and no interest payments are made on deposits, the net wealth of the bank remains unchanged because both assets

and liabilities increase by the same amount. This shows that the bank has zero net wealth.

Patinkin <sup>(12)</sup> finds some confusion in Pesek-saving analysis when they exclude time and saving deposits from bank money. Pesek-Saving has also been criticized for double counting bank money in defining social wealth. Despite these criticisms, the views of Pesek and saving on money are important because they study net wealth which accrues to commercial banks. <sup>(13)</sup>

### **2.1.2. Functions of Money**

Money performs a number of primary, secondary, contingent and other functions which not only remove the difficulties of barter but oils the wheels of trade and industry in the present day world.

#### **A. Primary Functions**

##### **1. Money as a medium of exchange**

This is the primary function of money because it is out of this function that its other functions developed. When money acts as a medium of exchange, money acts as an intermediary and it means that it is generally acceptable.

##### **2. Money as Unit of Value**

The second primary function of money is to act as a unit of value. Money is the standard for measuring value just as the yard or meter is the standard for measuring length. The monetary unit measures and expresses the values of all goods and services. In fact, the monetary unit expresses the value of each good or service in terms of price and money as a unit of value also facilitates accounting.

#### **B. Secondary Functions**

##### **1. Money as a Standard of Deferred Payments**

The third function of money is that it acts as a standard of deferred or postponed payments. All debts are taken in money. Money links the present values with

those of the future. It simplifies credit transactions. Money helps in capital formation and thus helps in the growth of the economy.

## **2. Money as a Store of Value**

Another important function of money is that it acts as a store of value. Money is a bridge from the present to the future. It is a form in which wealth can be kept intact from one year to the next. Money as a store of value is meant to meet unforeseen emergencies and to pay debts. Newlyn calls this the asset function of money. Keynes placed much emphasis on this function of money.

## **3. Money as a Transfer of Value**

Since money is a generally acceptable means of payment and acts as a store of value, it keeps on transferring values from person to person and from place to place. A person who holds money in cash or assets can transfer that to any other person at any time.

### **C. Contingent Functions**

Money also performs certain contingent or incidental functions.

#### **1. Money as the most Liquid of all liquid Assets**

People hold wealth in currency, demand deposits, time deposits, savings, bonds, treasury bills, short-term government securities, long-term government securities, debentures, preference shares, ordinary shares, stock of consumer goods and productive equipment. All these are liquid forms of wealth which can be converted into money and vice-versa.

#### **2. Basis of the Credit System**

Money is the basis of the credit system. Business transactions are either in cash or in credit. Credit economizes the use of money. But money is at the back of all credit.

#### **3. Equalizer of Marginal Utilities and Productivities**

Money acts as an equalizer of marginal utilities for the consumer. Since prices of consumer goods indicates their marginal utilities and are expressed in money,

money helps in equalizing the marginal utilities of various goods. This happens when the ratios of the marginal utilities and prices of various goods are equal. The main aim of the producer is to maximize his profits. For this, he equalizes the marginal productivity of each factor with its price. The price of each factor is nothing but the money it receives for its work.

#### **4. Measurement of National Income**

Money helps in measuring national income.

#### **5. Distribution of National Income**

Rewards of factors of production in the form of wages, rent, interest and profit are determined and paid in terms of money.

### **D. Other Functions**

#### **1. Helpful in making decisions**

#### **2. Money as a Basis of Adjustment**

The adjustments between money market and capital market, adjustments in foreign exchange and international payments etc... are done through money.

It is on the basis of these functions that money guarantees the solvency of the payer and provides options to the holder of money to use it any way, he likes.

### **2.1.3. Social Significance of Money**

Money is of vital importance to an economy due to its static and dynamic roles. Its static role emerges from its static or traditional functions. In its dynamic role, money plays an important part in the life of every citizen and in the economic system as a whole.

#### **A. Static Role of Money**

In its static role, the importance of money lies in removing the difficulties of barter in the following ways.

1. By serving as a medium of exchange, money removes the need for double coincidence of wants and the inconveniences and difficulties associated with barter.
2. By acting as a unit of account, money becomes a common measure of value.
3. Money acts as a standard of deferred payments. Money has simplified both taking and repayment of loans because the unit of account is durable. It also overcomes the difficulty of indivisibility of commodities.
4. By acting as a store of value, money removes the problem of storing of commodities under barter.
5. Under barter, it was difficult to transfer value. Money removes this difficulty of barter. A person can transfer his money through draft, bill of exchange etc.

## **B. Dynamic role of Money**

In its dynamic role, money plays an important part in the daily life of a person whether he is a consumer, a producer, a businessman or an administrator. Besides, it influences the economy in a number of ways.

### **1. To the Consumer**

Money possesses much significance for the consumer. It enables a consumer to make a rational distribution of his income on various commodities of his choice.

### **2. To the Producer**

Money is of equal importance to the producer. He keeps his accounts of the values of inputs and outputs in money.

### **3. In Specialization and Division of Labor**

Money plays an important role in large scale specialization and division of labor in modern production.

### **4. As the Basis of Credit**

The entire modern business is based on credit and credit is based on money.



**5. As a means to capital formation**

By transforming savings into investment, money acts as a means to capital formation.

**6. As an index of Economic Growth**

Money is also an index of economic growth. The various indicators of growth are national income, per capita income and economic welfare.

**7. In the distribution and Calculation of income**

**8. In National and International Trade**

**9. In solving the Central Problems of an Economy**

**10. To the Government, money is of immense importance**

**11. To the Society**

Money confers many social advantages.

Thus money is the pivot round which the whole science of economics clusters.

**2.1.4. Near Money**

Money consists of currency and bank deposits. Coins and currency notes issued by the central bank of a country and cheques of commercial banks are liquid assets. In fact, cheques and bank drafts are almost perfect substitutes for money. This is because they perform the medium of exchange function of money. But cheques and drafts can be issued at a short notice only in the case of demand deposits. This is not the case with time deposits. Thus, time deposits are not 'real' money and for them to become money they must be converted into cash or demand deposits. However, they are near money for they can be converted into real money in a short period without any loss. Thus, near money assets serve the store of value function of money temporarily and are convertible into a medium of exchange in a short time without loss in their face value.

Besides time deposits, other near money assets are bonds, securities, debentures, bills of exchange, treasury bills, insurance policies etc. All these types of assets have a

market and are negotiable so that they can be converted into real money within a short time.

Money and near money can now be distinguished. Money is a legal-tender and gives the possessor liquidity in hand. It performs the medium of exchange function. On the other hand, near money assets do not have any legal status. They possess moneyness or liquidity but not ready liquidity like money. They are almost perfect substitutes for money as a store of value. They are superior to money because they yield income. They also economize the use of money properly and tend to reduce the quantity of money used by the people as a medium of exchange, as a medium of deferred payments and as a store of value.

Despite the fact that near money assets do not possess ready liquidity, they are preferred by individuals. According to Prof. A.G. Hart, near money is preferred to cash by individuals because it serves as a margin of safety motive.<sup>(14)</sup> Prof. Dean points out that 80 percent of near money in the USA is held by individuals.

According to the Radcliffe Committee Report, “spending ...is related to the amount of money people think they can get hold of whether by receipt of income, ...by disposal of capital assets or by borrowing.”<sup>(15)</sup>

The first Committee to Review the Working of the Monetary System under the chairmanship of Sukhamoy Chakrabarty made several recommendations in 1985, for the development of the money market. As a follow-up, RBI initiated a number of measures in 1980s to widen and deepen the money market. The main initiatives were:

1. In order to impart liquidity to money market instruments and help the development of the secondary market in such instruments, the Discount and Finance House of India (DFHI) was set up in 1988 as a money market institution.
2. To increase the range of money market instruments, commercial paper (CP), certificates of deposit (CDs), and inter-bank participation certificates were introduced in 1988-89.

3. Interest rate ceiling was freed in 1988 and was completely withdrawn in 1989.<sup>(16)</sup>

### **2.1.5. Importance of Money**

Money is of vital importance in an economy due to its static and dynamic roles. Its static role emerges from its static or traditional functions. In its dynamic role, money plays an important part in the life of every citizen and in the economic system as a whole.

#### **A. Role of Money in a Capitalist economy**

A capitalist economy is one in which each individual in his capacity as a consumer; producer and resource owner is engaged in economic activity with a large measure of economic freedom. Such an economy is essentially a money economy where money plays an important role in its functioning. In fact, there is a circular flow of money in such an economy.<sup>(17)</sup>

The most significant role of money lies in the functioning of the price mechanism. The price system functions through prices of goods and services. Since prices are expressed in money, the price mechanism under capitalism cannot function without money.

The central problems of a capitalist economy such as what, how much, how and for whom to produce, are solved through the price mechanism. The price mechanism operates automatically without any direction and control by the Government.

Under Capitalism, the consumer is the king who buys only those commodities which give him the maximum satisfaction with a given money income. Money is equally important for the producer who buys and sells inputs and outputs with money. It is in fact, competition between consumers and producers which equalizes the demand for and supply of both goods and services in a capitalist economy.

In fact, money is the very basis of the capitalist production. By facilitating the purchase of inputs and by increasing specialization and division of labor, money helps

in the growth of research in a capitalist economy. The entire capitalist system of production is based on credit. The amount of credit is determined by the interest rate which is expressed in terms of money. The very basis of capitalism is the capital and money is the most liquid form of capital.

Money establishes a link between the present and future through the freedom of enterprise and freedom of consumption under capitalism. Besides these apparent merits of money in a capitalist economy, it has one serious defect in that an excess of money leads to inflation and its shortage leads to deflation. In fact, money plays a crucial role in the functioning of a capitalist economy.

## **B. Role of money in a Socialist Economy**

In a socialist economy, the central authority owns and controls the means of production and distribution. Therefore, the pricing process in a socialist economy does not operate freely but works under the control and regulation of the central planning authority.

Marx believed that money had no role to play in a socialist economy because it led to the exploitation of labor at the hands of capitalists.<sup>(18)</sup> Theoretically, the role of money in a socialist economy is different from that in a capitalist economy.

The price mechanism has little relevance in a socialist economy because it is regarded as a distinguishing feature of a free market economy. In a socialist state, it is the central planning authority that performs the functions of the market. The prices of commodities and the problem of how to produce are also decided by the planning authority.

Besides, capital accumulation is possible through money. It is money that provides liquidity and mobility required for capital accumulation. In a socialist economy the sources of investment funds are basically the same as under a capitalist economy. The turn over tax, planned profits of public enterprises and taxation are all expressed in money and help in capital accumulation. Besides, being members of the World Bank and IMF, they make payments in monetary terms in their international trade relations. There is also circular flow of money in a socialist economy.

To conclude, the role of money in a socialist economy may be less important as compared to a capitalist economy due to state regulation and control. Nevertheless, it helps in fixing prices, wages, incomes and profits. It guides a socialist economy in determining the allocation of its resources equitably, in capital accumulation and flow of resources within and outside the economy.

### **2.1.6. Changes in Money and Income**

Money, in the sense of means of payment has two components, demand deposits and currency. These two components are not, however, perfect substitutes—they are held, by and large, by different kinds of spending units; demand for them responds in different ways to different stimuli; and, because they are subject to markedly different reserves requirements, shifts between them alter the total amount of credit that can be supplied by the financial system. They are best regarded as two different financial assets and treated as such.

The quantities of currency and demand deposits held by the public are generally agreed to be endogenous variables determined in a general equilibrium setting along with the prices and quantities of other financial and real assets.

In a highly sophisticated financial system such as ours, in which new financial instruments and practices are constantly being introduced it seems highly improbable that the demand for monetary assets are simple and stable functions of a few unchanging variables. The reasons are many:

First, an expansionary monetary policy that stimulated increased spending and income through port folio effects, wealth effects and credit availability effects would bring in its wake an increase in supplies of demand deposits and currency.

Second, a rise in income caused by fiscal policy or by an autonomous shift of private demand, with the monetary dials unchanged, would react back on the money supply in three different ways:

1. The rise in interest rates caused by the rise in income would cause the banks to increase their borrowings from the central bank and perhaps to economize on excess reserves.
2. The rise in market interest rates would cause investors to shift funds from time deposits and similar claims into securities if, as is likely, the interest rates on these claims did not rise fully in pace with market rates.
3. If banks and related institutions raised rates on time- deposit type claims, some holders of non interest bearing demand deposits would be induced to shift funds to time accounts.

To the extent that issuers of these claims held cash reserves against them, the amount of reserves available to support demand deposits would be reduced, requiring a contraction in these deposits.

Effects (1) and (2) would cause money supply to increase while effect (3) would cause it to fall. It seems likely that (1) and (2) would out weigh (3) leading to an increase in the supply of monetary assets.

Third, under the rubric of “meeting the needs of trade” or “ leaning against the wind”, the central bank has, at times adjusted the supply of reserves to accommodate or partially accommodate, changes in the demand for money brought about by changes in income there by creating a third chain of causation running from income to money supply.

A response to the criticisms of existing monetary policy methods was naturally to be expected and is welcomed.

Some economists reject the monetarist thesis that monetary impulses are the chief factor determining variations in economic activity, and they contend that cyclical fluctuations of monetary growth cannot be attributed to the behavior of the authorities. These fluctuations are claimed to result priority from the behavior of commercial banks and the public.

### **2.1.7. Money Market in India**

The money market is a market for short-term funds, i.e. up to one-year maturity, and covers money and financial assets that are close substitutes for money.

The functions of the money market are the following:

1. Equilibrates demand for and supply of short-term funds.
2. Provides the central bank intervention adequate facility for influencing liquidity and the general level of interest rates in the economy and
3. Satisfies borrowing and investment needs in the economy at an efficient market clearing price.

The RBI is the most important constituent of the money market. The money market comes within the direct purview of RBI regulation. The primary aim of the RBI's operations in the money market is to ensure that the liquidity and short-term interest rates are maintained at levels consistent with the monetary policy objectives of maintaining price stability, ensuring exchange rate stability and supplying adequate credit in the economy.

The RBI influences liquidity and interest rates through a number of operating instruments, viz, cash reserve requirements of banks, operation of refinance schemes, conduct of open market operations, repo transactions, changes in the bank rate and at times through foreign exchange swap operations.

In line with the deregulation and liberalization policies of the 1990s, financial sector reforms were undertaken in our country early in the reform cycle. Naturally, reform in the money market has formed part of the reform process.

#### ***A. The call money market***

The call money market was predominantly an inter bank market until 1990.

The RBI's policy relating to entry into the call money market was gradually liberalized to widen and provide more liquidity, although the Vaghul Committee had recommended that the call and notice money market should be restricted to banks. <sup>(19)</sup>

### ***B. The term money market***

The term money market in India until recently has been some what dormant. While there has been some activity in the term money market in the recent period, after the foregoing reforms, the volumes have not yet become significant.

### **Commercial Paper (CP)**

CP is a money market instrument, issued in the form of a promissory note, by highly rated corporate for a fixed maturity in a discounted form. CP was introduced in India in 1990 to enable highly rated corporate borrowers to diversify their sources of short-term borrowing and also to provide an additional instrument to investors. The terms and conditions for issuing CP such as eligibility modes of issue, maturity periods are stipulated by the Reserve Bank. There are no interest rate restrictions on CP. It is significant to note that there is no lock-in period for CP. The issuance of CP has been generally observed to be related inversely to the money market rates.

### **Certificate of Deposit (CD)**

While deposits kept with banks are not ordinarily tradable, CDs essentially represent securitized and tradable term deposits. In India, CDs were first introduced in 1989. Due to its high cost liability, banks resort to this source generally when the deposit growth is sluggish but credit demand is high. The terms and conditions for issuing CDs are stipulated by the Reserve Bank.

### **Treasury Bills**

Treasury bills are instruments of short-term borrowing of the Government and play a vital role in cash management of the Government. The Treasury bill market has been the most preferred by central banks for market interventions to influence liquidity and short-term interest rates, generally combined with repos/ reverse repos. Hence, development of this market is very crucial for effective open market operations.



The 182-day Treasury bill was replaced by the introduction of 364-day Bills on a fortnightly auction since April 1992 as part of reform measures. Subsequently, 91-day Bills were introduced on auction in January 1993. The parallel existence of 91-day Top Treasury Bills and Ad hoc Treasury Bills continued till March 1997. To enable final cash management of the Government and to provide an alternative avenue for state Government and some foreign central banks to invest surplus funds, 14-day intermediate Treasury bills were introduced in April 1997.

The Treasury bill issues now consist of weekly 14-day and 91-day bill auctions and 364-day Bill auctions on a fortnightly basis combined with 14-day intermediate Bills available for state Governments and foreign central banks. There have been recently, very significant initiatives by the RBI in this area. A uniform price auction for 91-day Bills has been introduced as an experimental measure. In brief, development of the Treasury bill market is at the heart of money market development and hence the Reserve Bank has been paying special attention and continuously reviewing the development of the Treasury bill market.

As in the case of other instruments, the demand for Treasury bill is also inversely related to call money market rates. The supply is adjusted taking into account the demand conditions as also the short-term needs of the central Government. In 1998-99, the availability of fixed rate repos at 8 per cent (since August 1998) caused some disinterest in Treasury Bills, with the auction rates more aligned with the market recently, the interest in Treasury Bills has been significantly revived.

### **Money Market Mutual Funds (MMMFs)**

Money market mutual Funds were introduced in India in April 1991 to provide an additional short-term avenue to investors and to bring money market instruments within the reach of individuals.

The portfolio MMMFs consist of short-term money market instruments. Investment in such funds provides an opportunity to investors to obtain a yield close to short-term money market rates coupled with adequate liquidity.

The RBI has been making several modifications to the scheme to make it more flexible and attractive to banks and financial institutions. It appears that growth in MMMFs can really occur when the money market grows in volume and acquires depth- for which a number of initiatives will have to be taken.

### **2.1.8. The Narasimham Committee Report**

The Narasimham committee on Banking Sector Reform (1998) has provided a framework for reform in the money market also.<sup>(20)</sup> The RBI has already acted on many of them, like the minimum maturity for term deposits, minimum lock-in-period for CDs and units of MMMFs etc...

#### **Suggestions of Narasimham Committee (1998)**

1. Restriction of the call money market to banks and PDs.
2. Imposing prudential limits for individual bank's reliance on call money borrowings.
3. Introduction of one-day repos by the RBI.
4. Withdrawal of the RBI from the primary market in 91-day T-bills.
5. Access to foreign institutional investors in the T-bills market.
6. RBI support to the market through the liquidity adjustment facility (LAF)
7. Free access to bill rediscounts, CP, CDs and MMMFs to non-bank parties.
8. Reduction in the minimum period of fixed deposits to 15 days as also a similar minimum lock-in-period for money market instruments.

The other recommendations of the Narasimham Committee, especially those relating to the call money market, LAF etc, have considerable implications for the market and the participants and the conduct of monetary policy and will have to be implemented gradually. Most importantly, implementation will have to be designed and

phased in such a manner that existing players will have the flexibility to adjust their asset-liability structures.

To advise us on the development of the money market, a standing committee on the money market was setup by the RBI in 1997. The committee's membership includes representation from financial institutions, Indian and foreign banks, public and private sector mutual funds and economists, apart from RBI officials. All major issues were discussed in the meetings of the standing committee.

The call or notice money market is an inter-bank market the world over and the Narasimham Committee recommended that we adopt the same. The standing committee on the money market was also of the same view.

It was announced in the October 1998 review of monetary policy, that the call, notice and term money market should purely be an inter-bank market with additional access only to PDs. Of course, the RBI has to ensure that the exposure of banks and PDs in the call money market is within prudential limits.

Non-bank players have to be encouraged to deploy their short-term surpluses in other money market instruments. For instance, they can be permitted to borrow and lend freely through repos in both Government and non-Government securities before they are phased out of the call/ term money markets.

Compared to the earlier period, there are more instruments now in the money market. The inter-bank repo market in Government securities has also been picking up.

In brief phasing out of non-bank participants from the call/term money market should go hand-in-hand with the development of the repo market as also the market for other money market instruments.

### **Liquidity Adjustment Facility**

The Narasimham Committee has observed that the RBI support to the market should be through a liquidity adjustment facility (LAF) under which the RBI would periodically, if necessary daily reset its repo and reverse repo rates which would in a sense, provide a reasonable corridor for market play.

## **Inter- Bank Term Money Market**

There is a continuous demand that a prerequisite for the development of a healthy and vibrant term money market in India is the removal of the minimum statutory reserve requirements on inter-bank borrowings. There is a convincing view that the inhibiting factor is not merely the reserve requirements. Currently, inter-bank borrowings are exempt from CRR and SLR, subject to maintenance of the statutory minimum on the total net demand and time liabilities.

It is widely accepted that the banking sector needs a deep and liquid term money market for managing its liquidity and asset-liability mismatches. There is no clearly defined inter-bank term money yield structure in India beyond the overnight rates.

In fact, at times, long-term investment decisions are based on the call money rates. Hence, as recommended by the Narasimham Committee, it is essential to place clearly defined prudential limits for bank's reliance on the call money market. With the introduction of good asset-liability guidelines already circulated to banks, prudential limits on exposure to the call market and online connectivity between major branches of public sector banks, the stage is expected to be set for the emergence of an inter-bank term money market.

## **Repo Market**

Repo refers to a transaction in which a participant acquires funds immediately by selling securities and simultaneously agreeing to a repurchase of the same or similar securities after a specified time at a given price. It is collateral based lending. The terms of contract are in terms of 'repo rate' representing the money market borrowing/lending rate. As in the case of other instruments, repos also help equilibrating between demand and supply of short-term funds.

Just as we have a standing committee on the money market, we also have a Technical Advisory Committee on the Government securities Market. An internal subgroup of this committee is looking into various aspects of expansion of the repo

market, including issues comprising legal status, regulatory frame work and standardization of accounting practices.

Further, repos among eligible participants are currently permitted only in Mumbai and the RBI also conducts repo operations only in that city. Eventually, it is proposed to extend this to other centers also, which is dependent on the establishment of VSAT network and connectivity of all public debt offices of the RBI.

### **Suggestions for Development**

A number of suggestions have been received by the RBI towards further development of the market.

1. The RBI, at present, does not permit underwriting of C.P. The CP market has been witnessing ups and downs, depending primarily on the conditions in the call money market. Suggestions have been received regarding the introduction of CP with a revolving underwriting facility (RVF) which is a popular financing facility available abroad. Thus, while CP with the RVF is a good treasury product, issues such as the mechanism for rating of underlying instruments and the number of time it revolves, have to be carefully examined before the product can be introduced.
2. There is a suggestion that floating rate CDs could be considered for introduction in our market. Currently, CD is a discount instrument. Floating rate CD would imply that CD is an interest- bearing instrument.
3. It has also been held that brokers could be permitted in the money market to improve liquidity. The authorities have to examine this in the light of the role played currently by primary dealers in the market.
4. Yet another idea was to rationalize the tenor for issue of CDs of financial institutions from three months to three years. Now it is one year to three years. Ideally, this could be examined in the light of harmonization of roles between banks and financial institutions.

## **Interest Rate Swaps**

The monetary policy of October 1998 had announced the intention to introduce interest rate swaps to further deepen the money market as also to enable market participants to hedge interest rate risks. This was, in fact, the main item of the agenda in the meeting of the standing committee on the money market, conducted in 3<sup>rd</sup> February 1999.

## **Securities Contracts (Regulation) Act**

There is a proposal to amend the securities contracts (Regulation) Act, to add an enabling provision to give powers to the Government to provide jurisdiction to the RBI also in the regulation, say, of the money and debt markets. When this amendment is approved, the respective regulatory roles of the SEBI and the RBI in the money and debt markets could be formally delineated by the Government.

## **Stamp Duty Reform**

Although the state Governments claims the right to levy stamp duty, exemption of financial instruments from such duty is advocated in the interest of the development of efficient financial markets.

This is a matter of crucial importance and exemption of the money market and debt instruments from stamp duty or alternatively, rationalization of the procedures by imposing a flat fee would go a long way increasing secondary market activity and liquidity in the money market and debt instruments.

## **Electronic Dealing Systems**

Electronic dealing systems certainly lend transparency and efficiency to market operations. Ideally, the screen could cover OTC deals in money market instruments such as call and notice money, term money, repos and also Government securities including Treasury Bills. Besides banks, PDs, financial institutions and other market participants, the RBI could use the screen in the conduct of its open market operations as also for monitoring money/ securities market activity.

### **2.1.9. The Financial Sector Reforms in India**

The objectives of the financial sector reform process in India initiated in the early 1990s were the following:

1. Removal of financial repression that existed earlier.
2. Creation of an efficient, productive and profitable financial sector industry.
3. Enabling price discovery, particularly by the market determination of interest rates that then help in efficient allocation of resources.
4. Providing operational and functional autonomy to institutions.
5. Preparing the financial system for increasing international competition.
6. Opening the external sector in a calibrated fashion and
7. Promoting the maintenance of financial stability even in the face of domestic and external shocks.

As pointed out by former RBI governor YV Reddy,<sup>(21)</sup> the approach towards financial sector reforms in India is based on 'pancha-sutra' or five principles viz,

1. Cautious and appropriate sequencing of reform measures.
2. Introduction of norms that are mutually reinforcing
3. Introduction of complementary reforms across sectors (most importantly, monetary, fiscal and external sector).
4. Development of financial institutions and
5. Development of financial markets.

The conduct of the Reserve Bank of India's monetary policy in the 1990s has shaped and in turn, been shaped by the program of financial sector reforms. The operating procedure of monetary policy had to be comprehensively recast to enable the

shift from direct to indirect monetary policy instruments in consonance with the increasing market orientation of the economy. In the wake of financial sector reforms, we find that a regime switching has taken place in the RBI's asset size as well as in the size of its surplus. Moreover, the RBI balance sheet has become more transparent in line with international accounting standards.

Since the introduction of financial sector reforms, CRR and SLR rates have been cut considerably in a sequenced manner. SLR has been reduced to the statutory minimum or 25 percent, while CRR is currently at 6 percent.

## **2.2. THEORETICAL UNDERSTANDING OF MONETARY PHENOMENA**

The literature of monetary theory overlaps virtually with every other branch of economic analysis. Money plays a critical role in actual life, but its position in accepted monetary theory is anything but transparent.

In every money economy, there are fairly precise rules, goods buy money and money buys goods- but goods do not buy goods in any organized market. An essential feature of a money economy is the existence of institutional arrangements whereby at least one commodity becomes universally acceptable in exchange for all other commodities.

Possession of money commodities is, so a passport for entry into the organized market sector of the economy. The institution of money is a valuable social resource, fully on par with the most advanced machines of modern industry or the richest of natural resource endowments. Since it has a legal value, arbitrary manipulation of these, in form or quantity, clearly cannot add significantly to the welfare of society.

We can observe that the market for money is surely the least thin of all markets, because the market for money consists of the set of all markets for other commodities. So money is the ultimate in liquidity. Secondly, money must be a store of value, because one of its functions is to enable individuals to delay transactions, hence it must serve as a temporary abode of purchasing power. But these characteristics, as



also the characteristic of being a unit of account, are incidental to its third and primary function, which is to give effect to institutional arrangements for organized trading. All exchangeable commodities are media of exchange by virtue of the fact that they serve to pay for at least one other commodity, but only money commodities are means of payment for all other commodities. Money differs from other commodities in being universally acceptable as an exchange intermediary by virtue not of individual choice but rather by virtue of social contrivance.

In all descriptive accounts of monetary exchange, it is taken for granted that money commodities play a peculiar role as media of exchange- that money commodities are, in principle, distinguishable from other commodities by virtue of this role. No such distinction is logically admissible, however, within the framework of established price theory. On the contrary, the analytical content of the most general of modern statements of value and monetary theory, namely, Don Patinkin's 'Money, Interest and prices, is logically indistinguishable from that of the most traditional theory of a barter economy.<sup>(22)</sup>

Individuals acquire money commodities not because such commodities are directly useful but because they can later be used to purchase other commodities that are desired for their own sake. By virtue of these devices, practical effect is given to the institution of money; the establishment of organized markets enables individuals to channel into productive activity, labor and other resources that would otherwise be devoted to search and bargaining activities. But money, as money, need not be intrinsically valuable, for what matters are not the particular commodities that serve as money, but rather the existence of social institutions that make monetary transactions feasible and efficient.

The unimportance of the 'stuff' of which money is made is obvious enough to people who live in a world of fiat currencies; but what is obvious today was not so clear to people whose money consisted largely of gold, silver and other intrinsically valuable materials. In those circumstances, many if not most people were easily persuaded to believe that money was wealth in the same sense as, say, a cow, a field or a piece of machinery. Therefore, we find that the earliest formal analysis of monetary phenomena

is directed at dispelling this illusion by examining the consequences of an once-over change in the quantity of money commodities.

In an essay by David Hume entitled ‘of money’, Hume provides a nicely balanced account of what has since become known as the quantity theory of money.<sup>(23)</sup> Later writers have not always stated or interpreted the theory so judiciously. It underlines what today is referred to as the naive quantity theory, the central proposition of which is that the total quantity of means of payment governs the absolute scale of money prices but does not affect real rates of exchange among other commodities. On this reckoning, the determination of real rates of exchange, and of quantities traded, is the business not of monetary but of value theory.

The dichotomy thus established between monetary and value theory ultimately produced two relatively distinct breeds of economists to which some wag later assigned the descriptive labels ‘curve tenders’ and ‘curve stretchers’. The traditional monetary theory sketches the story of this dichotomy from its origin up to very recent times. The end of the story is unfolded in the selections appearing in contemporary theory, i.e. in monetary and Keynesian Economics.

Until the appearance of John Maynard Keynes’ ‘General Theory of Employment, interest and Money’ in 1936 most professional economists took it for granted that all economic problems of any practical importance could be adequately handled using established techniques of demand-and-supply analysis, there by presupposing that money was as much a ‘veil’ in the short run as it was in long –for at no stage in pre-Keynesian economics was any serious attempt made to build peculiarly monetary assumptions into the micro-foundations of economic analysis.<sup>(24)</sup>

The closest approach to such an attempt was initiated by Leon Walras in his pioneering treatment of general equilibrium analysis, but it involved little more than a mechanical application of quantity theory ideas to a conceptual model, the analytical structure of which precluded assignment of a specialized role to money as a means of payment.<sup>(25)</sup> A less formal, but ultimately more influential attack on the same problem was later under taken by Hicks in his famous ‘suggestions for simplifying the theory of money’, the central theme of which was that money could be assigned a natural place in

established demand-and supply analysis by treating it as a special kind of asset.<sup>(26)</sup> The effect of both attempts was to strengthen the already prevalent notion that economics could do without a separate theory to describe short-run price and quantity behavior in a money economy. However, Keynes' General Theory temporarily dispelled this illusion.

As concerns monetary theory, in particular, contemporary opinion appears strongly to favor what might be described as a 'neo-Walrasian quantity theory' to the effect that money matters only slightly in the short run and not at all in the long run. No other conclusion is possible, indeed, if one adopts the conception of a money economy implicit in recent statements of the general equilibrium theory of money and prices.

Such is the stage that monetary theory had reached by 1960. What is not yet clear, however, is how the shortcomings of accepted theory can be remedied. The literature on monetary growth has considerable intellectual appeal, and it may even afford some useful insights in to the working of inflationary and deflationary processes.

### **2.2.1. Traditional Monetary theory**

The notion that there is a simple and direct relation between the quantity of money and the general level of commodity prices has intrigued thoughtful men for centuries. But the precise nature of the relation has yet to be established.<sup>(27)</sup>

There appears to be no middle ground between brute empiricism and full scale theoretical specification of dynamic interrelations between monetary magnitudes and other aspects of economic activity. What Senior had to say on the subject more than a century ago is nearly as penetrating as anything that has been written since. Indeed, the difficulty of asserting anything that is both interesting and non-obvious runs like a red thread through the whole of the literature on the quantity theory of money, becoming especially prominent in those writings that attempt to assign money an independent role as a casual factor in economic fluctuations. The essay of Professor Friedman is particularly instructive in the latter respect.<sup>(28)</sup> Marshall speaks with a firmer voice only because he carefully omits all but incidental reference to dynamic complications.<sup>(29)</sup> As

matters presently stand, the quantity theory of money is interesting more for doctrinal than for substantive reasons.

### ***1. The Demand for money***

The classical economists did not explicitly formulate demand for money theory but their views are inherent in the quantity theory of money. They emphasized the transactions demand for money in terms of the velocity of circulation of money. This is because money acts as a medium of exchange and facilitates the exchange of goods and services.

In Fisher's 'Equation of Exchange',  $MV=PT$  where M is the total quantity of money, V is its velocity of circulation, P is the price level, and T is the total amount of goods and services exchanged for money, PT represents the demand for money and MV represents the supply of money.<sup>(30)</sup>

The transactions demand for money, is determined by the level of full employment income. This is because the classical economists believed in Say's Law Whereby supply created its own demand, assuming the full employment level of income.

Thus, the demand for money in Fisher's approach is a constant proportion of the level of transactions, which in turn, bears a constant relationship to the level of national income. Further, the demand for money is linked to the volume of trade going on in an economy at any time. The most important thing about money in Fisher's theory is that it is transferable. But it does not explain fully why people hold money.

### ***2. Value of Money***

By value of money we mean the purchasing power of money. What a rupee can buy in India represents the value of the rupee. The relation between the value of money and price level is an inverse one. If V presents the value of money and P the price level, then  $V=1/p$ . when the price level rises, the value of money falls and vice versa. Thus in order to measure the value of money, we have to find out the general price level.

The value of money is of two types: The internal value of money and external value of money. The internal value of money refers to the purchasing power of money over domestic goods and services. The external value of money refers to the purchasing power of money over foreign goods and services.

It was the Cambridge Cash Balance Approach which raised a further question: why do people actually want to hold their assets in the form of money?

With larger incomes people want to make larger volumes of transactions and so larger cash balances will be demanded. The Cambridge demand equation for money is  $M_d = kpy$ , where  $M_d$  is the demand for money which must equal the supply of money ( $M_d = M_s$ ) in equilibrium in the economy,  $k$  is the fraction of the real money income ( $Py$ ) which people wish to hold in cash and demand deposits.

This approach includes time and saving deposits and other convertible funds in the demand for money. It also stresses the importance of factors that make money more or less useful, such as the costs of holding it, uncertainty about the future and so on. One of its major criticisms arises from the neglect of store of value function of money. Thus the neglect of the asset function of money was the major weakness of classical approach to the demand for money which Keynes remedied.<sup>(31)</sup>

N.W. Senior, in his Lecture, 'on the quantity and value of money', has mentioned the following: "The general doctrine is, that the value of money depends partly on its quantity, and partly on the rapidity of its circulation".<sup>(32)</sup>

According to J.S. Mill, it is not difficult to perceive that it is the total amount of the money in any country which determines what portion of that quantity shall exchange for a certain portion of the goods or commodities of that country.<sup>(33)</sup>

As each piece of the money is equal in value to that which it exchanges for, if each performs ten different exchanges to effect one exchange of all the goods, the value of all the goods in the country is equal to ten times the value of all the money.

This, it is evident, is a proposition universally true. Whenever the value of money has either risen or fallen, (the quantity of goods against which it is exchanged,

and the rapidity of circulation, remaining the same) the change must be owing to a corresponding diminution or increase of the quantity, and can be owing to nothing else. If the quantity of goods diminishes while the quantity of money remains the same, it is the same thing as if the quantity of money had been increased; and if the quantity of goods be increased while the quantity of money remains unaltered, it is the same thing as if the quantity of money had been diminished. Similar changes are produced by any alteration in the rapidity of circulation. By rapidity of circulation is meant, of course, the number of time the money must change hands to effect one sale of all the commodities.

### ***3. Supply of Money***

Money is the medium of exchange ordinarily used in transactions. In addition, money serves as a unit of value, a standard of deferred payment, and a store of value. Inflation complicates the use of money as a standard of deferred payment and as a store of value. When inflation is foreseen, people may be able to protect money's role in these two functions.

Money supply consists of commodity money, fiat money, and bank money. Commodity money's value as a commodity is as great as its value as money. Fiat money's value as a commodity is less than its value as money. Bank money consists of checking deposits.

People demand money for transactions purposes, for precautionary motives, and for speculative motives. Interest rates measure the opportunity costs of holding money. Statistical demand for money studies are example of 'individual experiments', as distinguished from 'market experiments'.

Supply and demand analysis suggests that when money supply increases more rapidly than money demand, the value of money should fall. When money supply growth exceeds the growth of money demand, excess monetary growth occurs. The value of money falls when prices rise. A rise in the overall price level is inflation.

The quantity theory of money is the simplest theory of macro economics. The classical quantity theory of money suggests that changes in money supply and price

level will be strictly proportional. This conclusion follows from the equation of exchange ( $MV=PQ$ ) and from the assumptions that velocity and output are fixed. When inflation is steady, the conditions of the classical quantity theory are most likely to be met.

Modern theorists argue that unanticipated inflation can affect real output and employment, but more so in the short run than in the long run. The major effects of money on employment and output occur when people have not correctly anticipated inflation.

Supply of money is a stock at a particular point of time, though it conveys the idea of a flow over time. The term 'the supply of money' is synonymous with such terms as 'money stock', 'quantity of money' and 'money supply'. The supply of money at any moment is the total amount of money in the economy.

According to the Keynesian view, money supply is defined as currency with the public and demand deposits with commercial banks. Demand deposits with commercial banks plus currency with the public are together denoted as M1, the money supply<sup>(34)</sup>.

The second definition is broader and is associated with modern quantity theorists headed by Friedman. His definition includes M1 plus time deposits of commercial banks in the supply of money. This wider definition is characterized as M2 in America and M3 in Britain and India. It stresses the store of value function of money or what Friedman says as 'temporary purchasing power'.<sup>(35)</sup>

The third definition is the broadest and is associated with Gurley and Shaw.<sup>(36)</sup> They include in the supply of money, M2, deposits of savings banks, building societies loan associations and deposits of other credit and financial institutions. The first definition of money supply may be analytically better because M1 is a sure medium of exchange.

### **Determinants of Money Supply**

There are two theories of the determination of the money supply. According to the first view, money supply is determined exogenously by the central bank. The

second view holds that money supply is determined endogenously by changes in the economic activity which affects people's desire to hold currency relative to deposits, the rate of interest etc...

Thus, the determinants of money supply are both exogenous and endogenous which can be described broadly as: the minimum cash reserve ratio, the level of bank reserves and the desire of the people to hold currency relative to deposits. The last two determinants together are called the monetary base or the high powered money.

#### ***A. The Required Reserve Ratio***

The required reserve ratio (or the minimum cash reserve ratio or the reserve deposit ratio) is an important determinant of the money supply. An increase in the required reserve ratio reduces the supply of money with commercial banks and a decrease in required reserve ratio increases the money supply. The RR1 is the ratio of cash to current and time deposit liabilities which is determined by law. Every commercial bank is required to keep a certain percentage of these liabilities in the form of deposits with the central bank of the country. But notes or cash held by commercial banks in their bills are not included in the minimum required reserve ratio.

In India, the statutory liquidity ratio (SLR) has been fixed by law as an additional measure to determine the money supply. The SLR is called secondary reserve ratio in other countries while the required reserve ratio is referred to as the primary ratio. The raising of the SLR has the effect of reducing the money supply with commercial banks for lending purposes and vice versa.

#### ***B. The Level of Bank Reserves***

The level of bank reserves is another determinant of the money supply. Commercial bank reserves consist of reserves on deposits with the central bank and currency in their bills or vaults. It is the central bank of the country that influences the reserves of commercial banks in order to determine the supply of money. The central bank requires all commercial banks to hold reserves equal to a fixed percentage of both time and demand deposits. These are legal minimum or required reserves. Required reserves (RR) are determined by the required reserve ratio (RRr) and the level of



deposits (D) of a commercial bank:  $RR = RR_r \times D$ . If deposit amount is Rs. 80 lakhs and required reserve ratio is 20%, then the required reserves will be  $20\% \times 80 = \text{Rs.}16$  lakhs. Thus the higher the reserve ratio, the higher the required reserves to be kept by a bank, and vice versa. But it is the excess reserves (ER) which are important for the determination of the money supply. Excess reserves are the difference between total reserves (TR) and required reserves (RR):  $ER = TR - RR$ . In our example, it is  $\text{Rs. } 80 - 16 \text{ lakhs} = \text{Rs.}64$  lakhs.

It is the excess reserves of a commercial bank which influences the size of its deposit liabilities. A commercial bank advances loans equal to its excess reserves which are an important component of the money supply. To determine the supply of money with a commercial bank, the central bank influences its reserves by adopting open market operations and discount rate policy.

Open market operations refer to the purchase and sale of Government securities and other types of assets like bills, securities, bonds, etc, both government and private in the open market. When the central bank buys or sells securities in the open market, the level of bank reserves expands or contracts.

The discount rate policy affects the money supply by influencing the cost and supply of bank credit to commercial banks. The discount rate, known as the bank rate in India, is the interest rate at which commercial banks borrow from the central bank. A high discount rate means that commercial banks get fewer amounts by selling securities to the central bank. The commercial banks in turn raise their lending rates to the public and there will be contraction of credit.

It should be noted that commercial bank reserves are affected significantly only when open market operations and discount rate policy supplement each other. Otherwise, their effectiveness as determinants of bank reserves and consequently of money supply is limited.

### ***C. Public's Desire to Hold Currency and Deposits***

People's desire to hold currency (or cash) relative to deposits in commercial banks also determines the money supply. If people are in the habit of keeping less in

cash and more in deposits with the commercial banks, the money supply will be large and vice versa.

High-powered money is the sum of commercial bank reserves and currency (notes and coins) held by the public. High powered money is the base for the money supply. The supply of money varies directly with changes in the monetary base, and inversely with the currency and reserve ratios.

#### ***D. Other Factors***

The money supply is a function not only of the high-powered money determined by the monetary authorities, but of interest rates, income and other factors. The latter factors change the proportion of money balances that the public holds as cash. Changes in business activity can change the behavior of banks and the public and thus affect the money supply. Hence, the money supply is not only an exogenously controllable item but also an endogenously determined item.

We have discussed above the factors which determine money supply through the creation of bank credit. But money supply and bank credit are indirectly related to each other. When money supply increases, a part of it is saved in banks depending upon the depositor's propensity to save. These savings become deposits of commercial banks who, in turn, lend after meeting the statutory reserve requirements. Thus with every increase in the money supply, the bank credit goes up. But it may not happen in exactly the same proportion due to the following factors.

- a) The marginal propensity to save does not remain constant. It varies from time to time depending on changes in income levels, prices, and subjective factors.
- b) Banks may also create more or less credit due to the operation of leakages in the credit creation process.
- c) The velocity of circulation of money also affects the money supply. If the velocity of money circulation increases, the bank credit may not fall even after a decrease in the money supply. The central bank has little control over the velocity of money which may adversely affect bank credit.

The money supply (M) consists of deposits of commercial banks (D) and currency (C) held by the public. Thus supply of money  $M = D + C$ . High powered money (H) (or monetary base) consists of currency held by the public (C) plus required reserves (RR) and excess reserves of commercial banks. Thus high-powered money  $H = C + RR + ER$ . The relation between M and H can be expressed as the ratio of M to H, i.e., by dividing the equation M by H, i.e.,  $M/H$ .

#### ***4. Transmission Mechanism***

The transmission mechanism refers to the channels through which changes in money supply affect aggregate expenditure (or aggregate demand), prices, income and other real variables of the economy.

In the classical monetary transmission mechanism, a change in the money supply does not affect the real variables like output, employment and income. Money is neutral in its effects on the economy. This analysis is based on a direct and mechanical relationship between money and prices. If the quantity of money is raised, the price level will also rise in the same proportion, and vice versa. Such a relationship is based on the Quantity Theory Equation.<sup>(37)</sup>

$$MV = PT \text{ or } M/P = VT$$

where M is the total quantity of money, P is the price level of commodities traded, V is the velocity of circulation of M, and T is the volume of transactions of goods. The equation shows that the supply of real cash balances (M/P) must equal the demand for real cash balances (VT). The classical economists specified two channels through which monetary changes are transmitted to the real sector of the economy. They are the direct mechanism and the indirect mechanism which are discussed below.

##### **The Direct Mechanism**

The direct mechanism is based on the long run equilibrium of the demand for and supply of money. Suppose the money supply is increased. This leads to the increase in the supply of actual money balances (M/P) of the public which now exceed the demand for them. Now the actual money holdings are more than those desired by the

people relative to their expenditure and wealth. These, in turn, increase the demand for goods and services. As a result, the price level rises which reduces the supply of real cash balances ( $M/P$ ) until the actual money balances are equal to those people desire to hold. In this way, the equilibrium is restored in the money market.

### **Indirect Mechanism**

The indirect mechanism operates through the money rate of interest and involves the commercial banking system. Suppose the central bank makes open market purchases of government securities which increase the reserves, of commercial banks with excess reserves, the banks lend more which lowers the money rate of interest.

### **Criticisms**

The classical monetary transmission mechanism shows that money is neutral in equilibrium and it does not affect real aggregate demand, output, employment and income. But it is non- neutral in the transition period when it affects the real magnitudes. In the long, run only nominal magnitudes are affected when the money supply changes and money is neutral.

Patinkin has criticized the classical transmission mechanism for its failure to analyze the stability of equilibrium in both the goods and money markets through the operation of the real balance effect. This has resulted in the classical dichotomy between the real sector and monetary sector.<sup>(38)</sup>

Classical dichotomy means the separate and independent determination of relative and absolute prices in classical and neo- classical economics. Besides removing the classical dichotomy and integrating the monetary and value theory through the real balance effect, Patinkin also validates the quantity theory conclusion. According to Patinkin, the real balance implies that people do not suffer from ‘money illusion’.

### ***5. Neutrality of Money***

Neutrality of money means that money is neutral in its effect on the economy. A change in the money stock can have no long -run influences on the level of real output,

employment, rate of interest, or the composition of the final output. The only lasting impact of a change in the money stock is to alter the general price level.

Patinkin explains the neutrality of money as a situation when “a uniformly introduced increase in the quantity of money causes a proportionate increase in the equilibrium price of commodities and leaves the equilibrium rate of interest unaffected”, provided there is absence of money illusion and distribution effects. According to Gurley and Shaw, money is neutral if money is either entirely of the ‘outside’ variety, or entirely of the ‘inside’ variety. They define neutrality of money as the “inability of changes in the nominal stock of money to affect the rate of interest, output and wealth, and other variables.”<sup>(39)</sup>

In other words, money is neutral if it does not affect relative prices and leaves the interest rate unaffected. All prices move equi-proportionally. If there is a time lag, there is long -run neutrality. The quantity of money determines only absolute prices and their level does not affect the level of income, interest, rate of capital formation and employment. It is in this sense that money is neutral in its effects on the working of the economy.

In the classical system, money is neutral in its effect on the economy. It plays no role in the determination of employment, income and output. Rather, they are determined by labor, capital stock, state of technology, availability of natural resources, saving habits of the people, and so on. In the classical system, the main function of money is to act as a medium of exchange. It is to determine the general level of prices at which goods and services will be exchanged. The quantity theory of money states that price level is a function of the supply of money. Algebraically,  $MV = PT$ . The equation tells that the total money supply,  $MV$ , equals the total value of output,  $PT$ , in the economy. The result of an increase in money is to raise money wages and prices in equal proportion, leaving output, employment and the real wage rate unaffected. It is in this sense that money is neutral in the long run in the classical system.

Conditions or assumptions which must be met to establish the neutrality of money are:

- 1) There must be wage and price flexibility
- 2) Absence of Money Illusion
- 3) Absence of Distribution effects
- 4) Static(inelastic) expectations
- 5) Absence of Government Debt or Open Market Operations
- 6) Absence of a combination of inside and outside Money and
- 7) Perfect information.

### ***6. Milton Friedman's Quantity Theory***

Following the publication of Keynes' 'the General theory of Employment, Interest and money' in 1936; economists discarded the traditional quantity theory of money. At Chicago, Milton Friedman, Henry Simons, Lloyd Mints, Frank Knight and Jacob Viner taught and developed 'a more subtle and relevant version' of the quantity theory of money in its theoretical form "in which the quantity theory was connected and integrated with general price theory." The foremost exponent of the Chicago version of the quantity theory of money who led to the so- called 'monetarist Revolution' is Professor Friedman. He, in his essay 'The quantity Theory of money –A Restatement', published in 1956, set down a particular model of quantity theory of money.<sup>(40)</sup>

In his reformulation of the quantity theory, Friedman asserts that "the quantity theory is in the first instance a theory of the demand for money. It is not a theory of output, or of money income, or of price level." Thus, money is an asset or capital good. Hence, the demand for money forms part of capital or wealth theory.

For ultimately wealth holders, the demand for money, in real terms, may be expected to be a function primarily of the following variables:

### **A. Total Wealth**

The total wealth is the analogue of the budget constraint. In practice, estimates of total wealth are seldom available. Instead, income may serve as an index of wealth.

### **B. The division of wealth between Human and Non-Human Forms**

Friedman calls the ratio of non-human to human wealth or the ratio of wealth to income as wealth.

### **C. The Expected Rates of Return on Money and other Assets**

These rates of return are the counter parts of the prices of a commodity and its substitutes and complements in the theory of consumer demand.

### **D. Other Variables**

These variables such as liquidity, the tastes and preferences of wealth holders etc., also determine the demand function for money along with other forms of wealth. Such variables are noted as by Friedman.

Broadly, total wealth includes all sources of income or consumable services. It is capitalized income. By income, Friedman means 'permanent income' which is the average expected yield on wealth during its life time.

Wealth can be held in five different forms: Money, bonds, equities, physical goods and human capital. Each form of wealth has a unique characteristic of its own and a different yield.

1. Money is taken in the broadest sense to include currency, demand deposits and time deposits which yield interest on deposits. Thus, money is a luxury good.
2. Bonds are defined as claim to a time stream of payments that are fixed in nominal units.
3. Equities are defined as a claim to a time stream of payments that are fixed in real units.

4. Physical goods or non human goods are inventories of producer and consumer durables.
5. Human capital is the productive capacity of human beings.

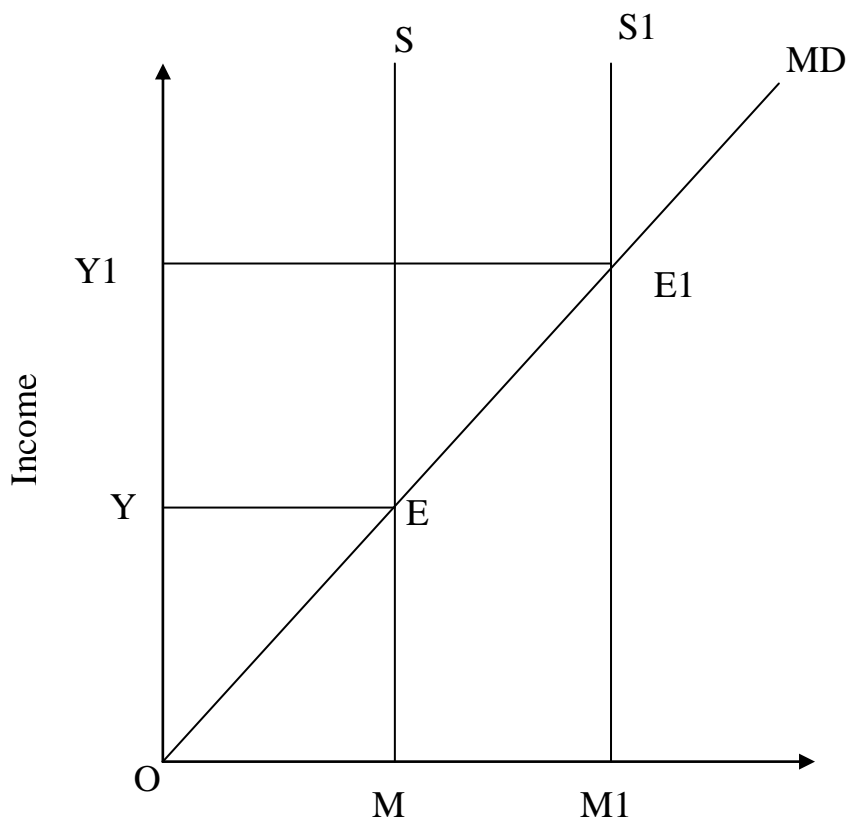
Thus, each form of wealth has a unique characteristic of its own and a different yield either explicitly in the form of interest, dividends, labor income etc., or implicitly in the form of services of money measured in terms of P and inventories. W, the current value of wealth is given as  $W = Y/r$  where, Y is the total flow of expected income from the five forms of wealth and r is the interest rate.

The individual demand function for money is given as  $M/P$  where M is the total stock of money demanded and P is the price level. The demand function for business is roughly similar. The aggregate demand function for money is the summation of individual demand functions. We get the conclusion that a rise in expected yields on different assets reduces the amount of money demanded by a wealth holder and that an increase in wealth raises the demand for money.

In Friedman's restatement of the quantity theory of money, the supply of money is independent of the demand for money. The supply of money is unstable due to the actions of monetary authorities. On the other hand, the demand for money is stable. It means that money which people want to hold in cash or bank deposits is related in a fixed way to their permanent income.

According to Friedman, a change in the supply of money causes a proportionate change in the price level or income or in both. Given the demand for money, it is possible to predict the effects of changes in the supply of money in total expenditure and income. If the economy is operating at less than full employment level, an increase in the supply of money will raise output and employment with a rise in total expenditure. But this is only possible in the short run.





**Chart II.1. Demand and Supply of Money**

Friedman's quantity theory of money is explained in terms of Chart II.1 where income ( $y$ ) is measured on the vertical axis and the demand for and the supply of money is measured on the horizontal axis. MD is the demand for money curve which varies with income.  $M_s$  is the money supply curve which is perfectly inelastic to changes in income. The two curves intersect at E and determine the equilibrium income OY. If the money supply rises, the  $M_s$  Curve shifts to the right to  $M1S1$ . As a result, the money supply is greater than the demand for money which raises total expenditure until new equilibrium is established at E1 between MD and  $M1S1$ . The income rises to OY1.

Thus, Friedman presents the quantity theory as the theory of the demand for money and the demand for money is assumed to depend on asset prices or relative returns and wealth or income. He shows how a theory of the stable demand for money becomes a theory of prices and output.

Some of the criticisms leveled against the theory are discussed as under.

1. Very Broad Definition of Money: - Friedman has been criticized for using the broad definition of money.
2. Money not a Luxury Good:-Friedman regards money as a luxury good.
3. More importance to wealth variables.
4. Money supply not Exogenous: - The supply of money is varied by the monetary authorities in an exogenous manner in Friedman's system.
5. Ignores the effect of other variables on money supply.
6. Does not consider Time Factor.
7. No positive correlation between money supply and money GNP – Money supply and Money GNP has been found to be positively correlated in Friedman's findings.

Despite these criticisms, Friedman's theory is probably the most important development in monetary theory since Keynes' General Theory. Its theoretical significance lies in the conceptual integration of wealth and income as influences on behavior.

### **The Quantity Theory of Money: A Critique**

M.L. Burstein, in his book, 'The quantity theory of money', has pointed out the following.

“The quantity theory of money can be viewed as a set of predictions of how observed prices and incomes will react over varying lengths of time to changes in monetary variables; or as a theorem on the comparative static of certain models. Unqualified earlier formulations of the quantity theory as an empirical law have not held up. Neo-quantity theorists have made more qualified predictions. Here too the verdict is negative: quantity theorists offer a trivial theorem in the context of simple models; it is incorrect in more complex models”.

“An irregular simple empirical relationship between the stock of money and nominal GNP, for example, is not necessarily adverse for monetary policy if various exogenous and predetermined variables can be controlled or predicted. But a quantity theory of money does not emerge”.<sup>(41)</sup>

### ***7. The total Currency Needed by a Country***

In his book ‘Money, Credit and Commerce’, A. Marshall discussed the following aspects.<sup>(42)</sup>

“In early times it was commonly said that the values of gold and silver are ‘artificial’. But in fact they are governed on the side of supply by cost of attainment and on the side of demand by the needs of people for ready purchasing power based on gold and silver, together with the demand for these metals for the purposes of industry and display.

The total value of a country’s currency, multiplied into the average number of times of its changing hands for business purposes in a year, is of course equal to the total amount of business transacted in that country by direct payments of currency in that year. But this identical statement does not indicate the causes that govern the rapidity of circulation of currency: to discover them we must look to the amounts of purchasing power which the people of that country elect to keep in the form of currency.

Although the purchasing power of a unit of a currency varies, other things being equal, inversely with the number of the units, yet an increased issue of inconvertible paper currency may lower its credit and therefore lessen the amount of ready purchasing power which the people care to hold. That is, it may lower the value of each of the units more than in proportion to the increase of their number.

Currency differs from other things in that an increase in its quantity exerts no direct influence on the amount of the service it renders.”

## **2.2.2. Contemporary Monetary Theory**

### ***1. Patinkin's Monetary Model***

Don Patinkin in his monumental work 'Money, Interest and Prices' criticizes the Cambridge economists for the homogeneity postulate and the dichotomization of goods and money markets and then reconciles the two markets through the real balance effect.<sup>(43)</sup>

The homogeneity postulate states that the demand and supply of goods are affected only by relative prices. It means that a doubling of money prices will have no effect on the demand and supply of goods. Patinkin criticizes this postulate for its failure to have any determinate theory of money and prices.

Another closely related assumption which Patinkin criticizes is the dichotomization of the goods and money market in the neo-classical analysis. This dichotomization means that the relative price level is determined by the demand and supply of goods, and the absolute price level is determined by the demand and supply of money. Like the homogeneity postulate, this assumption also implies that the price level has absolutely no effect on the monetary sector of the economy, and the level of monetary prices, in turn, has no effect on the real sector of the economy.

Patinkin integrates the money market and the goods market of the economy which depend not only on relative price but also on real balance. Real balance means the real purchasing power of the stock of cash holding of the people. When the price level changes, it affects the purchasing power of the people's cash holding which, in turn, affects the demand and supply of goods. This is the real balance effect. Patinkin denies the existence of the homogeneity postulate and the dichotomization assumption though this effect.

The demand for a commodity depends upon real balance as well as relative prices. Now if the price level rises, this will reduce the real balances (purchasing power) of the people who will spend less than before. This implies a fall in the demand for goods and the consequent fall in price and wages. With sufficiently large fall in wages and prices, the full employment level of output and income will be restored.

Finally, even if there is the 'liquidity trap', the expansion of the money supply will increase money balances and full employment can be restored through the operation of the real balance effect. According to Patinkin, "This is the crucial point. The dynamic grouping of the absolute price-level towards its equilibrium value will-through the real balance effect- react on the commodity markets and hence on relative prices".

Thus absolute prices play a crucial role not only in the money market but also in the real sector of the economy. Patinkin further pointed out that "once the real and monetary data of an economy with outside money are specified, the equilibrium values of relative prices, the rate of interest and the absolute price level are simultaneously determined by all the markets of the economy". In this way, Patinkin also introduces the real balance effect in the general equilibrium analysis.

Patinkin also validates the quantity theory conclusion. According to Patinkin, the real balance effect implies that people do not suffer from 'money illusion'. They are interested only in the real value of their cash holdings. In other words, they hold money for 'what it will buy'. This means that a doubling of the quantity of money will lead to a doubling of the price level, but relative prices and the real balances will remain constant and the equilibrium of the economy will not be changed.

Thus, the real balance effect demonstrates three theoretical points : first, it eliminates the classical dichotomy between value and monetary theory; second, it validates the conclusions of the quantity theory that in equilibrium, money is neutral and the interest rate is independent of the quantity of money through the real balance effect; and third, the wage-price flexibility leads to full employment in the long-run and the Keynesian under employment equilibrium is a disequilibrium situation.

Patinkin's analysis of the real balance effect has been severely criticized by Johnson, Archibald and Lipsey, Lloyd and other economists on the following grounds.

1. Not applicable in equilibrium situations
2. Conceptually inadequate.
3. Price stability without Real Balance Effect is possible.

#### 4. Failure to explain increase in monetary wealth.

Both the terms 'Pigou Effect' and 'Real balance Effect' have been coined by Patinkin. But they are not the same. Rather, they are quite different. The Pigou effect is a static analysis which consists of the effect of a wage-price deflation on consumption, given the constant stock of money or what Gurley and Shaw Call 'Outside money' which includes gold, government securities and fiat paper money. It shows that when consumption increases as a result of wage-price deflation, the IS curve shifts to the right so that it intersects a given LM function and automatic full employment is attained in the economy.

The real balance effect is a modified version of the Pigou effect given by Patinkin. It is a dynamic analysis which comprises both the Pigou effect and the Keynes effect. The operation of the Keynes effect shifts only the LM function to the right and that of the Pigou effect only the IS function to the right. But in the real balance effect both the LM and IS functions are shifted to the right till they intersect at the level of full employment. In the real balance effect, elasticities of the IS and LM functions are irrelevant. The LM curve may be perfectly elastic i.e. in the Keynesian liquidity trap region or the IS curve may be perfectly inelastic, when the level of full employment is automatically attained.

## ***2. Monetary Theory of R. W. Clower***

R.W. Clower in his article 'A reconsideration of the micro foundations of monetary theory,' shows that the conception of a money economy implicit in the work is empirically and analytically vacuous, and he proposes an alternative micro foundation for the pure theory of a money economy.

Market excess demands are defined in terms of individual demand functions for goods. Consider an economy in which all transactions but one have a violent aversion to hold money balances. Starting from any initial distribution of money balances, market trading over one or more periods will ultimately yield a situation in which the entire stock of money is held by a single individual. Changes in initial endowments of goods or in the stock of money will generate precisely the same qualitative effects in

this model as world occur in a system where all transactions were willing to hold money balances in full equilibrium; hence the model differs in no essential respect from models discussed by Patinkin and other writers. But our model is so defined that, in equilibrium money is not used in any exchange transactions. Here, goods are indistinguishable from money as sources of effective demand.

The tasks that Clower sets in his paper were: Firstly, to demonstrate that the conception of money economy implicit in modern accounts of the general equilibrium theory of money and prices is formally equivalent to the classical conception of a barter economy; secondly, to propose a reformulation of established micro economic analysis suitable as a foundation for explicit analysis of the working of a money economy. The first of these tasks has been carried through to completion. The second is obviously unfinished. A model that is immune to the specific criticism that can be leveled at established micro economic analysis- a model where, in sharp contrast with established theory, money commodities play peculiar and central role in shaping prevailing forces of excess demand, is exhibited here.<sup>(44)</sup>

The natural point of departure for a theory of monetary phenomena is a precise distinction between money and non money commodities. In this connection, it is important to observe that such a distinction is possible only if we assign a special role to certain commodities as means of payment. For any commodity may serve as a unit of account and standard of differed payment: and every asset is, by its very nature, a potential store of value. If money is to be distinguished by the functions it performs, therefore, it is to the medium of exchange function that we must address our attention. The only difficulty is to express analytically what is meant when we assert that a certain commodity serves as a medium of exchange.

A barter economy is one in which all commodities are money commodities. More precisely, we now define a money economy as a system involving at least one money commodity put a non-transitive exchange relation.

In general, the exchange relation of a money economy may contain numerous barter subsets (trade credit, blocked currencies, credit cards, demand deposits, etc.) Such non-pure money economies seriously complicate the task of defining relevant

choice alternatives for transactions. Pure money economy is one in which one and only one commodity can be traded directly for any other commodity.

A commodity is regarded as money for our purposes if and only if it can be traded directly for all other commodities in the economy. Correspondingly, a money economy is one in which not all commodities are money. The distinction between money and other commodities is thus a matter not of degree but of kind.

Money buys goods and goods buy money; but goods do not buy goods. This restriction is the central theme of the theory of a money economy. This aphorism automatically rules out standard budget constraints of neo-Walrasian equilibrium analysis.

Analytically, there is a clear separation between goods demanded for purchase (offers to sell money) and goods offered for sale (offers to buy money). This condition may be met most easily by dichotomizing the budget constraint into two branches, the first representing a constraint on money expenditure, the second representing a constraint on money income. It follows that the total value of goods demanded cannot in any circumstances exceed the amount of money held by the transactor at the outset of the period. Our definition of choice alternatives thereby captures the essential meaning of the traditional contention that demand in a money economy is effective only if it involves a combination of desire with money purchasing power.

Unlike established theory, changes in initial endowments of goods have no 'income' effect on commodities that are demanded for purchase; i.e. supply of goods does not create demand for other goods. All of these results are obvious consequences of dichotomizing budget constraints into separate expenditure and income branches.

Demand (and excess-demand) function in a money economy are thus subject to much more severe restrictions than are those of a barter economy- the latter category being interpreted to include all neo-Walrasian models of money and prices.

A full statement of the implications of Clower's micro foundations for monetary theory cannot be given here. For present purposes, it is sufficient to observe that the results given above ensure that the responds of transactions to changes in prices or



initial endowments of goods or money will differ qualitatively from findings suggested by established theory. Correspondingly, the response of market prices and quantities traded to changes in tastes, initial endowments, or in the aggregate stock of money will differ qualitatively from findings associated with established doctrines.

### **2.2.3. Keynesian Monetary Theory**

Keynes' 'General theory of Employment, Interest and Money' is a theory of the actual working of a money economy.<sup>(45)</sup> Unfortunately, Keynes expressed his ideas in language and relations that too easily lend themselves to interpretation within the formal framework of neo-classical equilibrium analysis. Partly for this reason, partly because the actual working of a monetary economy is inherently difficult to portray analytically, economic theorists are still arguing about the precise nature of the so-called Keynesian revolution, or the precise difference between money and a barter economy. There is a vast literature on this subject, most of it having some bearing on monetary theory.

#### ***1. Demand for Money***

The demand for money arises from two important functions of money. The first is that money acts as a medium of exchange and the second is that it is a store of value. Thus individuals and business wish to hold money partly in cash and partly in the form of assets.

The demand for money is directly related to the income level. The higher the income level, the greater will be the demand for money. When alternative assets like bonds become unattractive due to fall in interest rates, people prefer to keep their assets in cash and the demand for money has been split into the transactions demand, the precautionary demand and the speculative demand.

#### **Liquidity Preference**

Keynes in his General Theory used a new term 'Liquidity Preference' for the demand for money. Keynes suggested three motives which lead to the demand for money in an economy.

1. The transactions demand
2. The precautionary demand and
3. The speculative demand.

### **The Transactions Demand for Money**

The transactions demand for money arises from the medium of exchange function of money in making regular payments for goods and services. It depends upon the level of income, the interest rate, the business turn over, the normal period between the receipt and disbursement of income etc. Thus the transaction demand for money is a direct proportional and positive function of the level of income and is expressed as  $LT = KY$ , where  $Y$  is the income,  $LT$  is the transactions demand for money and  $K$  is the proportion of income which is kept for transactions purposes. If  $Y = \text{Rs. } 1200\text{cr}$  and  $k = \frac{1}{4}$  then  $LT = \text{Rs. } 300$  crores.

Regarding the rate of interest as the determinant of the transactions demand for money Keynes made the  $LT$  function interest inelastic. In recent years, two post-Keynesian economists William J Baumol<sup>(46)</sup> and James Tobin<sup>(47)</sup> have shown that the rate of interest is an important determinant of transactions demand for money. They have also pointed out that the relationship between transactions demand for money and income is not linear and proportional. Rather, changes in income lead to proportionately smaller changes in transactions demand.

The modern view is that the transactions demand for money is a function of both income and interest rates which can be expressed as  $LT=f(y, r)$ . The transactions demand for money varies directly with the level of income and inversely with the rate of interest.

### **The precautionary Demand for money**

Both individuals and businessmen keep cash in reserve to meet unexpected needs. Therefore, money held under the precautionary motive is rather like water kept in reserve in a water tank. Keynes held that the precautionary demand for money, like transactions demand, was a function of the level of income. But the post-Keynesian

economists believe that like transactions demand, it is inversely related to high interest rates. Since precautionary demand, like transaction demand is a function of income and interest rates, the demand for money for these purposes is expressed in the single equation  $LT = f(Y,r)$

### **The Speculative Demand for Money**

The speculative (or asset) demand for money is for “securing profit from knowing better than the market that what the future will bring forth”.

Bond prices and the rate of interest are inversely related to each other. Low bond prices are indicative of high interest rates, and high bond prices reflect low interest rates.

This can be worked out with the help of the equation  $V = R/r$  where  $V$  is the current market value of a bond,  $R$  is the annual return on the bond and  $r$  is the rate of return currently earned or the market rate of interest.

According to Keynes, it is expectations about changes in bond prices or in the current market rate of interest that determine the speculative demand for money. Thus the speculative demand for money is a decreasing function of the rate of interest. The higher the rate of interest, the lower the speculative demand for money and the lower the rate of interest, the higher the speculative demand for money.

### ***2. Neutrality of Money: Liquidity Trap***

In the entire Keynesian system, there are two situations in which money is neutral. The first is the situation of full employment and the second is the special case of liquidity trap.

Keynes visualized conditions in which the speculative demand for money would be highly or even totally elastic so that changes in the quantity of money would be fully absorbed into speculative balances. This is the famous Keynesian liquidity trap. In this case, changes in the quantity of money have no effects at all on prices or income. According to Keynes, this is likely to happen when the market interest rate is very low so that the yields on bond, equities, and other securities will also be low.

At a very low rate of interest, such as  $r_2$ , the LS curve becomes perfectly elastic and the speculative demand for money is infinitely elastic. This portion of the LS curve is known as the liquidity trap. At such a low rate, people prefer to keep money in cash rather than invest in bonds because purchasing bonds will mean a definite loss. Thus the lower the interest rate, the smaller the earnings from bonds and therefore, the greater the demand for cash holdings. Consequently, the LS curve will become perfectly elastic.

The phenomenon of liquidity trap possesses certain important implications. First, the monetary authority cannot influence the rate of interest even by following a cheap money policy. An increase in the quantity of money cannot lead to a further decline in the rate of interest in a liquidity- trap situation. Second, the rate of interest cannot fall to zero. Third, the policy of a general wage cut cannot be effective in the face of a perfectly elastic liquidity preference curve.

No doubt, a policy of general wage cut would lower wages and prices, and thus release money from transactions to speculative purpose, the rate of interest would remain unaffected because people would hold money due to the prevalent uncertainty in the money market. Last, if new money is created, it instantly goes into speculative balances and is put into bank vaults or cash boxes instead of being invested. Thus, monetary changes have a weak effect on economic activity under conditions of absolute liquidity preference.

### ***3. Total Demand for money***

According to Keynes, money held for transactions and precautionary purposes is primarily a function of the level of income,  $LT=f(y)$ , and the speculative demand for money is a function of the rate of interest,  $LS=f(r)$ . Thus, the total demand for money is a function of both income and the interest rate:

$$LT + L_s = f(y) + f(r) \quad \text{or}$$

$$L = f(y) + f(r) \quad \text{or}$$

$$L = f(y, r), \text{ where } L \text{ represents the total demand for money.}$$

Thus, the total demand for money can be derived by the lateral summation of the demand function for transactions and precautionary purposes and the demand function for speculative purposes.

#### ***4. The Post-Keynesian Approach***

Keynes believed that the transactions demand for money was primarily interest inelastic. Prof. Baumol has analyzed the interest elasticity of the transactions demand for money on the basis of his inventory theoretical approach. Further, in the Keynesian analysis the speculative demand for money is analyzed in relation to uncertainty in the market. Prof. Tobin has given an alternative theory which explains liquidity preference as behavior towards risk. The third important Post-Keynesian development has been Friedman's formulation that the demand for money is not merely a function of income and rate of interest, but also of the total wealth.

#### ***5. Supply of Money***

According to the Keynesian view, money supply is defined as currency with the public and demand deposits with commercial banks. Demand deposits with commercial banks plus currency with the public are together denoted as M1, the money supply.

#### ***6. Keynesian Transmission Mechanism***

The transmission mechanism in the Keynesian theory is indirect via the interest rate. It is based on the existence of unemployment equilibrium in the economy and on the assumption of short run. In the Keynesian analysis, there are three motives for holding money: precautionary, transactions and speculative motive is determined by the interest rate, while the demand for precautionary and transactions motives is determined primarily by the level of income. Given the level of national income, the demand for money is a decreasing function of the rate of interest rate, the lower the demand for money and vice versa. This negative relationship between the interest rate and the demand for money provides a link between changes in the money supply and the aggregate variables of the economy.

The Keynesians further believe that money and financial assets (bonds) are good substitutes. They are highly liquid and yield interest. So even small changes in interest rates may lead to substitution between money and financial assets. A fall in the interest rate will mean a rise in the price of bonds (or securities) which will induce people to sell bonds and hold more money for speculative purposes. Given these main elements of the Keynesian theory, its transmission mechanism is explained below.

In the Keynesian transmission mechanism, changes in the money supply affect aggregate expenditure, output, employment and income indirectly through changes in the interest rate. Suppose the central bank increases the money supply by open market purchases of Government bonds. It lowers the interest rate which, in turn, increases investment and expenditure, thereby raising the national income.

The mechanism by which changes in the money supply are transmitted into the income level is the asset effect. With income level unchanged, when the money supply is increased, it causes people to spend their excess holding of money on bonds. This means an increase in the demand for bonds and a rise in their prices. A rise in the prices of bonds brings down the money interest rate. This, in turn, increases the speculative demand for money. People prefer to keep money in cash rather than lend it at a low interest rate. This is called the liquidity effect. This is the first stage in the Keynesian transmission mechanism.

In the next stage, the fall in the interest rate and an increase in the speculative demand for money stimulate investment. Businessmen prefer to invest in capital goods rather than hold money in cash for speculative purposes.

In the final stage of the transmission mechanism, the increase in investment raises the level of income through the multiplier process. The increased income generates additional savings equal to the increase in investment and equilibrium will prevail in the commodity market. On the other hand, the rise in real income or output brings diminishing returns to labor, there by raising per unit labor cost and price level.

The Keynesian transmission mechanism consisting of three stages is called the cost of capital channel and is summarized thus: Money → Interest Rate → Investment →

Income; where with the increase in the money supply, interest rate falls and investment and income rise. The rise in price level raises nominal income that leads to an increase in the transactions and precautionary demand for money, there by bringing a ‘feedback effect’ on the economy. The increase in transactions and precautionary balances, in turn, reduces the speculative balances. The latter raise the interest rate, and bring a fall in investment and income, and lead to a further feedback effect. Friedman calls the feedback effect the income effect.

It is criticized that the velocity of money is not assumed as stable in the Keynesian theory. The transmission mechanism also does not operate smoothly by the expectations of money holders over future interest rates. Another factor which inhibits the smooth operation of the Keynesian transmission mechanism is the interest rate elasticity of investment. The less elastic is the investment curve, the less is the increase in investment as a result of a fall in the interest rate, and vice versa.

#### ***7. Neo- Keynesian Transmission Mechanism***

The Neo-Keynesians discuss the monetary transmission mechanism through the port folio adjustment process. When the supply of money changes, it sets in motion wealth effect, substitution effects, and availability effects.

#### ***8. Monetarism Vs Keynesianism***

Monetarism refers to the followers of Milton Friedman who hold that ‘only money matters’ and as such monetary policy is a more potent instrument than fiscal policy in economic stabilization. On the other hand, Keynesianism refers to the followers of Keynes who believe that ‘money does not matter’, and for economic stabilization fiscal policy is a more powerful tool than monetary policy. The adherents of monetarism are known as the monetarists and of Keynesianism as the Fiscalists. We discuss below the views of the monetarists and Fiscalists about the causes of changes in national income and the roles of monetary and fiscal policies in economic stabilization.

The monetarists emphasize the role of money in explaining short- term changes in national income. They argue that the role of money has been neglected by Keynesians, if not by Keynes himself. Friedman and Schwartz have shown that changes

in the money supply cause changes in national income. Monetarists believe that all recessions and depressions are caused by severe contraction of money and credit, and booms and inflations by excessive increases in the money supply. The Keynesians reject the monetarist's view that changes in national income are caused solely by changes in the money supply. Rather they hold that changes in national income cause changes in the supply of money. The moderate Keynesians still believe like monetarists that hyper-inflations are caused by excessive money supply. On the other hand, the extreme Keynesians hold that non-monetary factors like investment cause depressions and booms.

### **Policy Differences**

Another point of difference between the monetarists and the Keynesians is over the policy prescriptions. According to the monetarists, monetary policy has a greater influence on economic activity than fiscal policy, and fiscal policy is important only in making changes in the money supply. On the other hand, the Keynesians emphasize the importance of both fiscal and monetary policy in influencing the economy but they attach more importance to the former than to the latter. First, we study the monetarist view on monetary and fiscal policy and then the Keynesians' view.

As already analyzed above, the monetarists hold that changes in the money supply have a direct influence on aggregate expenditure and thus on income. Let us analyze an expansionary monetary policy followed by monetarists. To begin, suppose the central bank purchased securities in the open market. It raises the price of securities and lowers the rate of interest. People will therefore start selling securities and hold more money. People spend their excess money balances on financial assets and durable consumer goods. Others attracted by low interest rates borrow from banks for expenditure on houses, durable consumer goods, plants and equipments, etc. These forces tend to increase aggregate expenditure and income.

In contrast to the monetarists, the Keynesians regard monetary policy relatively less effective because of the relative interest inelasticity of aggregate expenditure. To illustrate, consider an expansionary monetary policy. Suppose, the central bank purchases securities in the open market. As a result, the price of securities rises and the



interest rate falls. People will, therefore, start selling securities in order to hold more money. As the demand for money is highly interest elastic in the Keynesian system, even a small fall in the rate of interest will induce people to sell securities and hold more money.

The above analysis about monetarism and Keynesianism reveals that both hold almost the opposite views. The monetarists argue that only money matters, and that economic recessions and expansions are caused by decreases and increases of the money supply. They therefore advocate control of the money supply to stabilize cyclical fluctuations. They emphasize that the growth rate of money is the principal determinant of the behavior of national income. This view is based on a number of historical studies carried out by Friedman and Schwartz, Friedman and Meiselman and Anderson and Jordan of the Federal Reserve Bank of St. Louis. These studies reveal that there is a very close relation between money supply and national income than between national income and any of the Keynesian variables like aggregate expenditure.

Though the monetarists have tried to enforce their position on the basis of empirical studies yet they are themselves skeptical about the success of monetary policy in contrast to fiscal policy. They agree that as economic stabilizer, monetary policy may do more harm than good because of the operation lag. The operation lag refers to the time elapsing between the taking of action and the effective impact of that action on the economic situation. On the average, it takes a long time for a change in the money supply to affect national income, so the operation lag is long. Friedman himself admits that the time lag involved is so large that contra-cyclical monetary policy might actually have a destabilizing effect on the economy. The monetarists, therefore, hold that the economy is basically stable and when disturbed by some change in basic conditions, will quickly revert to its long-run growth path. That is why; they advocate an annual fixed percentage growth in the money supply and an end to discretion in monetary policy. Friedman, therefore, believes that fiscal policy does not have any potent influence on the economy except that it affects the behavior of money.

On the other hand, the Keynesians are not diehards like the monetarists. They take a more realistic view of monetary and fiscal policy in contrast to the latter. They do not regard the two as competitive but complimentary to each other. They do not deny that money does matter, for they believe that monetary policy does influence national income but via changes in the interest rate. But they find monetary policy ineffective in controlling severe depressions and therefore depend upon fiscal policy for this. On the other hand, they combine monetary policy with fiscal policy for controlling booms and inflations.

### ***9. Keynes' General Theory***

Keynes concludes his 'general theory of employment, interest and money' as follows: "The orthodox theory assumes that we have knowledge of the future of a kind quite different from that which we actually possess. This false realization follows the lines of the Benthamite calculus. The hypothesis of a calculable future leads to a wrong interpretation of the principles of behavior which the need for action compels us to adopt, and to an under estimation of the concealed factors of utter doubt, precariousness, hope and fear. The result has been a mistaken theory of the rate of interest. It is true that the necessity of equalizing the advantages of the choice between owning loans and assets requires that the rate of interest should be equal to the marginal efficiency of capital. But this does not tell us at what level the equality will be effective. The orthodox theory regards the marginal efficiency of capital as setting the pace. But the marginal efficiency of capital depends on the price of capital assets; and since this price determines the rate of new investment it is consistent in equilibrium with only one given level of money income. Thus the marginal efficiency of capital is not determined, unless the level of money income is given. In a system in which the level of money income is capable of fluctuating, the orthodox theory is one equation short of what is required to give a solution. Undoubtedly, the reason why the orthodox system has failed to discover this discrepancy is because it has always tacitly assumed that income is given, namely, at the level corresponding to the employment of all the available resources. In other words, it is tacitly assuming that the monetary policy is such as to maintain the rate of interest at that level which is compatible with full employment. It is therefore, incapable of dealing with the general case where

employment is liable to fluctuate. Thus, instead of the marginal efficiency of capital determining the rate of interest, it is true (though not a full statement of the case) to say that it is the rate of interest which determines the marginal efficiency of capital.

The orthodox theory would by now have discovered the above defect, if it had ignored the need for a theory of the supply and demand of output as a whole. I doubt if many modern economists really accept say's law that supply creates its own demand. But they have not been aware that they were tacitly assuming it. Thus, the psychological law underlying the multiplier has escaped notice. It has not been observed that the amount of consumption goods which it pays entrepreneurs to produce is a function of the amount of investment goods which it pays them to produce. The explanation is to be found, I suppose, in the tacit assumption that every individual spends the whole of his income either on consumption or on buying, directly or indirectly, newly produced capital goods. But here again while the older economists expressly believed this, I doubt if many contemporary economists really do believe it. They have discarded these older ideas, without becoming aware of the consequences".

In his book, 'Money, Trade and Economic Growth', H.G. Johnson <sup>(48)</sup> gives a general evaluation of the Keynesian Revolution.

"As a theory for dealing with problems of employment, inflation and economic planning, it constitutes, in my opinion, a great and pervasive advance, the essence of which is to look at the relations between aggregate demand for and availability of resources, rather than at the quantity of money. In monetary theory, its main contribution has been to emphasize the function of money as an asset, alternative to other assets and to break the quantity-theory assumption that there is a direct connection between money quantity and aggregate demand. On the other hand, the theory as Keynes presented it is misleading in many ways, and needs much adaptation to fit non-depression conditions; and the Keynesian approach does tend to play down the influence of monetary conditions, much may at times be very important".

R.W. Clower, in his paper, 'The Keynesian counter- revolution a theoretical appraisal', clarifies the formal basis of the Keynesian revolution as follows. "Keynesian economics brings current transactions into price theory whereas traditional analysis

explicitly leaves them out. Alternately, we may say that Keynesian economics is price theory without Walras' law and price theory with Walras' law is just a special case of Keynesian economics. The bearing of my argument on the Keynesian counter-revolution is correspondingly plain: contemporary general equilibrium theories can be maintained intact only if we are willing to barter Keynes for orthodoxy.

No one can deny that general equilibrium analysis as presently constituted is a useful instrument for thinking about abstract economic problems and this would hardly be so if it did not omit many realistic frills. The danger in using this instrument to think about practical problems is that, having schooled ourselves so thoroughly in the virtues of elegant simplicity, we may refuse to recognize the crucial relevance of complications that do not fit our theoretical preconceptions".<sup>(49)</sup>

#### **2.2.4. Growth and Monetary Theory**

The neutrality of money in comparative static- that is, the long-run invariance of the demand for real money balances with respect to changes in the nominal quantity of money-is a familiar characteristic of all accepted models of the monetary mechanism. It is tempting to carry this same characteristic over into models that deal with economic growth; to argue that per capita real balances will be invariant with respect to changes in the rate of increase in the nominal stock of money in an economy where factor supplies are increasing at a constant exponential rate. However, some attempts to introduce money explicitly into standard growth models suggest that money is anything but neutral in these circumstances.

Holding the quantity of money constant in Von-Neumann<sup>(50)</sup> like growth models would automatically reduce the money rate of interest to zero. In these models, constant returns prevail and the supply of labor is infinitely elastic at a given level of the real wage rate. The rate of fall of prices is equal to the rate of growth of output which is equal, in turn, to the net productivity of capital (the natural rate of interest).

Many such models are investigated in order to determine whether money is neutral. The basic result is that the greater the variety of financial assets in the community, the greater is the scope for changes in the quantity of money to vary the

ratios among financial assets in the public's portfolios and thereby permanently to influence the real variables in the economy.

H.G. Johnson, in his 'Essays in Monetary Economics' points out the role of money in a Neo-classical One-Sector Growth Model.<sup>(51)</sup>

"The main emphasis of the analysis is placed on two related problems: the neutrality of money in the context of economic growth and the possibility of using monetary policy to influence the growth of the economy. In all three models, money is by assumption 'neutral' in the comparative-static sense that a once-for-all change in the quantity of money, superimposed on a trend rate of growth of the money supply maintained by the monetary authority, would produce a once-for-all change in the price level with no real effects on the economy.

In the context of growth theory, however, the question arises whether money is 'neutral' in the more relevant sense that a difference in the rate of change of the money supply maintained by the monetary authority would make no difference to the speed with which the economy approaches its equilibrium growth path and most fundamentally that a difference in the rate of change of the money supply would make no difference to the output and consumption per head characteristic of the equilibrium growth path. If money is not neutral in the former sense, monetary policy can accelerate or retard the economy's approach to long-run equilibrium growth and if it is not neutral in the latter sense, monetary policy can influence the characteristics of equilibrium growth.

For analytical simplicity, the monetary authority is assumed, not to fix the rate of growth of the money supply, but to govern the rate of increase of the money supply so as to achieve a target rate of price inflation or deflation a higher rate of inflation or a lower rate of deflation requiring a higher rate of monetary expansion, *ceteris paribus*. This assumption implies that if the economy starts below its long-run equilibrium ratio of capital to output, the money supply is expanded at a declining rate as capital accumulates, the rate of expansion converging on the rate of growth of population plus the monetary authority's target rate of price change (which may be negative). Also the policy question of whether the monetary authority can influence the characteristics of

the equilibrium growth path is cast in terms of whether it can shift the economy towards the golden rule path. Though, or previously argued, there is no real justification for regarding such an objective as desirable, this formulation of the problem seems consistent with the spirit of growth theory.

What is basically responsible for the non-neutrality of money in the models analyzed is the assumption that money is a non-interest bearing asset (or, more generally, an asset with a return fixed in nominal terms, which return has for convenience been equated to zero in this analysis). This assumption stems in part from the current institutional arrangements for the provision of the supply of money, the wisdom of which is questioned in the preceding paragraph, but more importantly from the convenience to the classical tradition of monetary analysis of the outside money concept, so useful in demonstrating the neutrality of money under static-equilibrium conditions. For the construction of models of growth incorporating money, it might be preferable to employ an assumption about money that, instead of ensuring non-neutrality by accepting existing monetary institutional arrangements as defining money ensured neutrality by re-defining institutional arrangements for supplying money. Specifically, neutrality would be assured by assuming that monetary arrangements guarantee holders of money a rate of return on their real balances equal to the rate of return available on real investment’.

### **2.3. DEFINITION OF MONETARY POLICY**

Monetary policy may either be defined in a broad or in a narrow sense. Defined in a broader sense, monetary policy not only includes monetary measures but also non-monetary measures which have monetary effects. In this sense, monetary policy covers a wide range of policies and measures. It includes not only monetary measures which influence the cost and availability of money but also those non-monetary measures which influence monetary situations. Thus, non-monetary measures such as control of prices or wages, physical control, budgetary measures, income policy measures, etc. would be included within the scope of monetary policy defined in broader sense in so far as their primary aim is to influence the monetary situation.

But, defined in a narrow sense, monetary policy comprises only those decisions and measures of the state and of the monetary authority which affect the volume of money and the level of interest rates. Thus, monetary policy is defined as comprising of such measures which lead to influencing the cost, volume and availability of money and credit so as to achieve certain set objectives.

Monetary policy refers to the credit control measures adopted by the central bank of a country. This is a very narrow definition.

But, besides the policies of the central bank, the Government policies relating to the monetary standard and the statutory reserves for the issue of currency as also operations and policies regarding exchange rates and foreign transactions also constitute important aspects of monetary policy. Hence, monetary policy is the name given to the principles whereby the Government and the central bank of a country fulfill the general objectives of the country's economic policy. This is as it should be since all the various policies that are normally thought of viz, fiscal policy, commercial policy and monetary policy are different aspects of the same single entity called the economic policy.

Johnson defines monetary policy "as policy employing central bank's control of the supply of money as an instrument for achieving the objectives of general economic policy".<sup>(52)</sup>

According to Paul Einzig, "Monetary policy includes all monetary decisions and measures irrespective of whether their aims are monetary or non-monetary and all non-monetary decisions and measures that aim at affecting the monetary system".<sup>(53)</sup>

Obviously, Paul Einzig's definition of monetary policy is too broad as it also includes non-monetary measures and is not, therefore, very helpful for the purpose of circumscribing the scope of monetary policy.

G.K. Shaw defines it as "any conscious action undertaken by the monetary authorities to change the quantity, availability or cost of money".<sup>(54)</sup>

For Reserve Bank of India (RBI) <sup>(55)</sup> monetary policy refers to the use of instruments within the control of central bank to influence the level of aggregate demand for goods and services. Central banking instruments of control operate through varying the cost and availability of credit, those producing desired changes in the asset pattern of credit institutions primarily the commercial banks. Thus, RBI is relatively more explicit in defining the monetary policy. For it, monetary policy operates through influencing the cost, volume and availability of credit and money. It seeks to influence aggregate demand indirectly through influencing the credit position of commercial banks.

In the present study, the concept of monetary policy has been defined in the sense as has been defined by the Reserve Bank.

## **2.4. OBJECTIVES OF MONETARY POLICY**

Monetary policies have varied as a result of changing economic priorities and views about the economic stability of the Indian economy. So the issue of objectives has become important because of the need to provide clear guidance to monetary policy makers. Indeed, this aspect has assumed added significance in the context of the increasing stress on autonomy of central banks. While autonomy has to go with accountability, accountability itself requires a clear specification of goals.

In a broader framework, the objectives of monetary policy in India continue to be price stability and growth. These are pursued, by ensuring credit availability, with stability in the external value of the rupee as well as overall financial stability.

In the transitional phase, however, given the exchange market imperfections, the exchange rate objective may occasionally predominate due to emphasis on the avoidance of undue volatility. In fact, sometimes, it could be the most dominant reason for short-term monetary policy adjustments.

Thus, the main objectives or goals of monetary policy are:-

- (1) Price stability



- (2) Economic growth
- (3) Full employment and
- (4) Maintenance of balance of payments equilibrium

However, the relative emphasis on any one of the objectives is governed by the prevailing circumstances.

### **Price Stability**

One of the policy objectives of monetary authority is to stabilize the price level. Both economists and laymen favor this policy because fluctuations in prices bring about uncertainty and instability in the economy. Rising and falling prices are both bad because they bring unnecessary loss to some and undue advantage to others. Again they are associated with business cycles. So a policy of price stability keeps the value of money stable, eliminates cyclical fluctuations, brings economic stability, helps in reducing inequalities of income and wealth, secures social justice and promotes economic welfare.

However, there are certain difficulties in pursuing a policy of stable price level. The first problem relates to the type of price level to be stabilized. Should the relative or general price level be stabilized, the wholesale or retail, of consumer goods or producer goods? There is no specific criterion with regard to the choice of a price level. Second, innovations may reduce the cost of production but a policy of stable prices may bring larger profits to producers at the cost of consumers and wage earners. Again, in an open economy which imports raw materials and other intermediate products at high prices, the cost of production of domestic goods will be high.

But a policy of stable prices will reduce profits and retard further investment. Under these circumstances a policy of stable price is not only inequitable but also conflicts with economic progress.

Despite these drawbacks, the majority of economists favor a policy of stable prices. But the problem is one of defining price stability. Price stability does not mean that prices remain unchanged indefinitely. Price changes are essential for allocating

resources in the market economy. So price stability means stability of some appropriate price index in the sense that we can detect no definite upward trend in the index after making proper allowance for the upward bias inherent in all price indexes.

Price stability can be maintained by following a counter- cyclical monetary policy, that is easy monetary policy during a recession and dear monetary policy during a boom.

### **Economic Growth**

One of the most important objectives of monetary policy in recent years has been rapid economic growth of an economy. Economic growth is defined as “the process whereby the real per capita income of a country increases over a long period of time”. Economic growth is measured by the increase in the amount of goods and services produced in a country. A growing economy produces more goods and services in each successive time period. In its wider aspect, economic growth implies raising the standard of living of the people, and reducing inequalities of income distribution.

All agree that economic growth is a desirable goal for a country. But there is no agreement over ‘the magic number’, i.e. the annual growth rate which an economy should attain.

Generally, economists believe in the possibility of continual growth. However, policy makers do not take into consideration the costs of growth. Growth is not limitless because resources are scarce in every economy. All factors have opportunity cost. Moreover, rapid growth leads to urbanization and industrialization with their adverse effects on the pattern of living and environment.

The main problem is to what extent monetary policy can lead to the growth of the economy. It is difficult to say anything definite on this issue. The monetary authority may influence growth by controlling the real interest rate through its effect on the level of investment. By following an easy credit policy and lowering interest rates, the level of investment can be raised which promotes economic growth. Monetary policy may also contribute towards growth by helping to maintain stability of income and prices. By moderating economic fluctuations and avoiding deep depressions,

monetary policy helps in achieving the growth objective. Since rapid and variable rates of inflation discourage investment and adversely affect growth, monetary policy helps in controlling hyper inflation. Similarly, by a judicious monetary policy which encourages investment, growth can be promoted. For example, tight monetary policy affects small firms more than large firms and higher interest rates have a greater impact on small investments than on large industrial investments. So monetary policy should be such that encourages investment and at the same time controls hyper-inflation so as to promote growth and control economic fluctuations.

### **Full employment**

Full employment has been ranked among the foremost objectives of monetary policy. It is an important goal not only because unemployment leads to wastage of potential output, but also because of the loss of social standing and self respect. Moreover, it breeds poverty.

According to Keynes, full employment means the absence of involuntary unemployment.<sup>(56)</sup> In other words, full employment is a situation in which everybody who wants to work gets work. To achieve full employment, Keynes advocated increase in effective demand.

According to the Burnner (1961), “Full employment is a situation where all qualified persons who want jobs at current wage rate find full time jobs.”<sup>(57)</sup>

It is now agreed that full employment stands for 96 to 97 percent employment with 3 to 4 percent unemployment existing in the economy due to frictional factors. Full employment can be achieved in an economy by following an expansionary monetary policy.

### **Balance of payment's Equilibrium**

Another objective of monetary policy since the 1950s has been to maintain equilibrium in the balance of payments. The achievement of this goal has been necessitated by the phenomenal growth in the world trade as against the growth of international liquidity. It is also recognized that deficit in the balance of payments will

retard the attainment of other objectives. This is because a deficit in the balance of payments leads to a sizeable outflow of gold. But it is not clear what constitutes a satisfactory balance of payments position.

Again, what is the balance of payment target of a country? It is where imports equal exports. So the attainment of a balance of payment equilibrium becomes an imperative goal of monetary policy in a country. How can monetary policy achieve it?

A balance of payments deficit reflects excessive money supply in the economy. As a result, people exchange their excess money holdings for foreign goods and securities. Under a system of fixed exchange rates, the central bank will have to sell foreign exchange reserves and buy the domestic currency for eliminating excess supply of domestic currency. This is how equilibrium will be restored in the balance of payments.

On the other hand, if the money supply is below the existing demand for money at the given exchange rate, there will be a surplus in the balance of payments. Consequently, people acquire the domestic currency by selling goods and securities to foreigners. They will also seek to acquire additional money balances by restricting their expenditure relatively to their income. The central bank, on its part, will buy excess foreign currency in exchange for domestic currency in order to eliminate the shortage of domestic currency.

#### **2.4.1. Trade-off in monetary goals**

The four objectives of monetary policy discussed above are not complimentary to each other. Rather, they conflict with one another. If a government tries to fulfill one goal, some other goal moves away. It has to sacrifice one in order to attain the other. It is, therefore, not possible to fulfill these entire objectives simultaneously. We discuss below conflicts or trade-offs between different objectives.

## **Full Employment and Economic Growth**

The majority of economists hold the view that there is no inherent conflict between full employment and economic growth. Periods of high growth are associated with low level of unemployment, and periods of low growth with rising unemployment.

In 1961, Arthur Okun established a relationship between real GNP and changes in the unemployment rate. This relationship has come to be known as Okun's Law. This law states that for every three percentage point's growth in real GNP, unemployment rate declines by one percentage point every year.<sup>(58)</sup>

However, certain economists argue that the unemployment rate increases as the growth rate rises. Economic growth leads to reallocation of resources in the economy whereby there is change in the type and quantity of labor demanded. Under the circumstances, the government should adopt such monetary policy which should increase their overall demand in the economy.

## **Economic growth and Price stability**

There is conflict between the goals of economic growth and price stability. The rise in prices is inherent in the growth process. The demand for goods and services rises as a result of stepping up of investments on a large scale and consequent increase in incomes. This leads to inflationary rise in prices, especially when the level of full employment is reached. In the long run, when new resources are developed and growth leads to the production of more commodities, the inflationary rise in prices will be checked. But the rise in prices will be there with the growth of the economy and it will be moderate and gradual.

## **Full employment and price stability**

One of the objectives of monetary policy in the 1950s was to have full employment with price stability. But the studies of Philips, Samuelson, Solow and others in the 1960s, established a conflict between the two objectives. These findings are explained in terms of the Philips curve. They suggest that full employment can be attained by having more inflation and that price stability can be achieved by having

unemployment to the extent of 5 to 6%. Economists do not find any conflict between unemployment and price stability. They hold that so long as there are unemployed resources, there will be price stability. Prices start rising only when there is full employment of resources.

### **Full employment and Balance of payments**

There is a major policy conflict between full employment and balance of payments. Full employment is always related to balance of payments deficit. In fact, the problem is one of maintaining either internal balance or external balance. If there is a balance of payments deficit, then a policy of reducing expenditure will reduce imports but it will lead to increase in unemployment in the country. If the Government raises aggregate expenditure in order to increase employment, it will increase the demand for imports thereby creating disequilibrium in the balance of payments. It is only when the government adopts expenditure switching policies such as devaluation that this conflict can be avoided but that too temporarily.

### **Price stability and Balance of payments**

There appears to be no conflict between the objectives of price stability and balance of payments in a country. Monetary policy aims at controlling inflation to discourage imports and encourage exports and thus it helps in attaining balance of payments equilibrium. However, if the Government tries to remove unemployment and allows some inflation within the economy, there appears a conflict between these two objectives. For a rise in the price level will discourage exports and encourage imports, thereby leading to disequilibrium in the balance of payments. But this may not happen if prices also rise by the same rate in other countries of the world.

## **2.4.2. Policy Objectives in India**

Should all the goals of economic policy be the goals of monetary policy?

Since the five year plans the broad objective of India's economic policy have been to achieve a faster rate of economic growth and to ensure a reasonable degree of

price stability along with distributive justice in the economy. In India, the monetary policy has also emphasized these broad objectives of our economy.

It is important to recognize the fact that all the objectives cannot be effectively pursued by any single arm of economic policy. For effective implementation of the economic policy, there should be equality in the number of policy instruments and objectives if all objectives are to be fulfilled. Moreover, assigning to each instrument the most appropriate target or objective, especially when there is multiple objectives of equal relevance is a difficult problem.

It is a proved fact that, among various policy objectives, monetary policy is best suited to achieve the goal of price stability in the economy.

However, developments in the recent years have shown that it is not very easy to contain the inflationary pressures on the economy, while maintaining a sustained improvement in growth.

Keynes regarded price stabilization as the ultimate goal of the central Bank's credit control policy. After the great depression, there have been many economists and financial experts who expounded the view that price stabilization is to be preferred to the stabilization of exchange rates, on the ground that the former would be most conducive to the national economic welfare.

Variations in the price level cause important changes and disturbances in the economic relationships within a country. Price stabilization, if accompanied by adjustments in exchange rates, not only avoids such disturbances but also helps the country to be independent of the monetary policy of other countries. Hence, modern central Banks regard price stabilization as a major objective.

Elimination of business cycle which creates cyclical fluctuations in income, production and prices is an important objective of monetary policy. This economic stabilization is more important than price stability to some economists because, they focus on national economic welfare.

For ensuring price stability, central bank may require a consistent policy over a long period of time. This argument may makes the central bankers unpopular even though will provide them greater autonomy.

After the economic reforms, in India, the role and content of monetary policy have evoked greater attention. In fact, this increased attention is not unique to our country. The world over there has been a renewed interest in the conduct of monetary policy and in maintaining price stability with a reasonable rate of inflation.

When the RBI intervenes in the foreign exchange market and in the process, buys US dollars (being the intervention currency of the RBI) it adds to its foreign currency assets as also to the money supply. The reverse happens when it sells US dollars.

Intervention in the foreign exchange market impacts the RBI's balance sheet in as much as the RBI buys or sells out right spot US dollars or enters into swaps or undertakes forward purchase or sale. These transactions result in a change in the composition of Net Financial Assets (NFAs) and Net Domestic Assets (NDAs).

Far- reaching changes have been witnessed in the external sector of the Indian economy in recent years.

Substantial elimination of quantitative controls on imports, reduction in tariffs, market determined exchange rate system, convertibility on the current account, encouragement to foreign direct investment and greater access to external capital market have all contributed to a closer link between the domestic markets and external markets and made the traditional transmission channels more complex to operate.

This is especially because the exchange rate is now determined by demand for and supply of foreign currency in the market.

The RBI intervention in the market is limited, to reducing rate volatility and ensuring that the market rate is not too divergent from what the economic fundamentals dictate. Besides, greater access to international capital markets also means that the corporate are able to access funds at rates lower than the domestic interest rates.



This new set of factors arising out of external sector liberalization would need to be reckoned with, in the working out of the desired rate of expansion of money and credit as well as the optimal level of interest rates.

According to Dr. C.Rangarajan, “Monetary economics is not a settled science. There are continuing debates on several issues connected with monetary policy”.<sup>(59)</sup>

## **2.5. TARGETS OF MONETARY POLICY**

The choice of a target for monetary policy is determined by the mechanism through which money affects growth, employment and prices. Since none of the monetary authority’s policy tools works directly on these policy variables, the policy makers rely on intermediate targets that they feel they can control tolerably well with the instruments at their disposal, and that are closely linked through transmission mechanism to the ultimate targets of production, employment and price level.

There are three target variables for monetary policy. They are the money supply, availability of credit and interest rates.

1. **Money Supply** - So far as money supply is concerned, the central bank cannot directly control output and prices. So it selects the growth rate of money supply as an intermediate target. Friedman suggests that the money supply should be allowed to grow steadily at the rate of 3 to 4 % per year for a smooth growth of the economy and to avoid inflationary and recessionary tendencies.
2. **Availability of Credit and Interest Rates** – Availability of credit and interest rates are the other two target variables of monetary policy. Economists call them as “money market conditions” which refer to short-term interest rates and the banking systems’ “free reserves” (i.e. excess reserves minus borrowed reserves).

The monetary authority can influence the short-term interest rates. It can change credit conditions and affect economic activity by rationing of credit or other means. The monetary authority influences economic activity by following an easy or expansionary monetary policy through low and / or falling short- term interest

rates and a tight or contractionary monetary policy through high and/or rising short-term rates.

### **Limitations**

- (1) No doubt interest rates and the supply of credit influence spending, but it cannot be predicted with definiteness about the size and timing of the effects of any change in them.
- (2) So far as interest rates are concerned, it is the real interest rate that matters and not the nominal interest rate. It is possible to control and observe the movements in the nominal interest rate and not in the real interest rate because it is difficult to measure the expected rate of price inflation. Thus, the nominal interest rate is not a good target of monetary policy.
- (3) The use of credit availability as a monetary target is not helpful in monetary policy. Suppose there is a reduction in the availability of credit, it may be offset by credit flows through NBFIs. Moreover, it is difficult to predict the amount of reduction or increase in the availability of credit.

### **Intermediate Targets**

Money supply and interest rate are intermediate targets of monetary policy. In fact, they are competing targets. The central bank can either aim at a certain rate of increase in the money supply or at a certain level of interest rate. It cannot adopt both the targets at the same time. The money supply target means loss of control over the interest rate, while the interest rate target means loss of control over the money supply.

Of the two targets, money supply and interest rate, the monetarists prefer a monetary target for various reasons. First, the money supply is measurable, while there are a variety of interest rates. Second, the money supply linkage with nominal GNP is more direct and predictable than the interest linkage with nominal GNP.

## **Market yield on Equity**

Tobin suggests the market yield on equity as a target variable for monetary policy. According to him, the monetary authority should try to equate this yield with the real return expected from investment in physical capital. <sup>(60)</sup>

Of the various targets of monetary policy, it is advisable for the monetary authority not to rely on any single target. It should select the targets according to the prevailing economic and financial conditions. The interest rate is more suitable during the short run. But in the long run, the credit availability and money supply should be relied upon by the monetary authority. The target of market yield on equity is unacceptable to economists.

## **2.6. INDICATORS OF MONETARY POLICY**

Money supply, bank credit and interest rate which serve as targets are also employed as indicators of monetary policy.

### **1. Money supply**

If the central bank is solely responsible for changes in the money supply, it is a good indicator of monetary policy. According to the monetarists, it is open market operations and changes in reserve requirements that are the main cause of movements in the money supply. It is the money supply which is the most important determinant of both the level of output and the price level in the short run and of the price level and the nominal aggregate demand in the long run. The changes in money supply affect aggregate demand through effects on a wide range of assets.

The Keynesians involve a narrow transmission mechanism between money supply and changes in aggregate demand. When the money supply increases it will be spent on bonds, thereby lowering interest rates and ultimately leading to an increase in investment.

But according to the monetarists, an increase in money supply will lead to spending on a much broader range of assets than on bonds only. Even if the demand for financial assets expands, interest rates will fall but only temporarily.

Thus interest rates may be either lower or higher after an expansionary monetary policy, depending on the speed and strength of the change in GNP and on the expectations regarding prices. Similarly, interest rates may be higher or lower after a contractionary monetary policy begins, depending on the same factors.

## **2. Bank credit and interest rate**

So far as interest rate as an indicator of monetary policy is concerned, there are vast differences in the views of the Keynesians and the monetarists. The monetarists downgrade interest rate as indicator of monetary policy because it is not under the firm control of the central bank. The same view is held by the Keynesians. But the differences arise in the transmission mechanisms. According to the Keynesians, the increase in money supply reduces the interest rate provided the demand for money does not become perfectly elastic (the liquidity traps case). Second the reduction in the interest rate increases investment provided it is not inelastic to the interest rate. Interest rates will stay down so long as the money supply continues to increase.

The monetarists do not agree with this view. To them, the increase in money supply affects interest rate in the following manner. Suppose the money supply increases through open market purchases of securities by the central bank. This will bring down interest rate by increasing the reserves of commercial banks which expand their loans. This is the liquidity effect which causes a short-run reduction in interest rate. The low interest rate will encourage investment in new capital formation, inventories, construction activities, etc. As a result, prices of investment goods will rise and the demand for financial and real assets will increase and raise their prices. The rise in production and demand for money will bid up the interest rate. This is the output effect.

Finally, there is the price expectation effect because lenders expect prices to rise and they buy interest bearing securities and other goods. Thus after the initial fall,

interest rate will rise again and settle at a new rate. The new rate will depend on the rate of inflation generated by the increase in money supply. So interest rate as an indicator of monetary policy shows that when increases in the money supply lead to increases in interest rate, this will be like an expansionary easy money policy. Friedman, therefore, argues that the monetary authority should concentrate on controlling the money supply rather than manipulating the interest rate.

Economists do not agree over the use of money supply, bank credit and interest rate as indicators of monetary policy. Brunner and Metzler are of the view that both the money supply and interest rate would have identical effects on the economy.<sup>(61)</sup> It is changes in the real interest rate that affect economic activity. But, in reality, it is only changes in nominal interest rate that are measured. The measurement of real interest rate depends on expected price changes. This is both conceptually and empirically a difficult process and subject to errors. Thus to evaluate monetary policy during inflation or deflation by looking at nominal interest rate is misleading. But this problem does not arise in the case of the money supply because it is nominal values of money which influence nominal values of economic activity. Therefore, interest rate is not a reliable and predictable indicator of monetary policy whereas the money supply is.

To select an appropriate indicator of monetary policy requires certain issues which are to be tackled. The first issue concerns the nature of money supply and its control. Friedman includes M2 that is currency, and demand and time deposits in the money supply. But the problem is to what extent the money supply will respond to changes in a predictable manner. The second issue concerns the extent to which the money supply affects economic activity. Third, there is the important issue of “the proposed indicator’s exogeneity with respect to the economic variables that policy makers are attempting to influence.”

## **2.7. MONETARY POLICY AND ECONOMIC ACTIVITY – AN OVERVIEW**

Money moves the wheels of the economy. If money supply is tight (i.e. the government restricts the issue of new notes and reduces the possibility of lending) the

amount of money available in the economy is reduced and thus may reduce spending and investment. On the contrary, when the spending is encouraged, it leads to a higher level of growth. Money supply should be effectively managed according to the situations and what the time demands, in order to maintain the smooth running of the economy. This calls for an effective monetary policy.

There is wide agreement about the major goals of economic policy: high employment, stable prices, and rapid growth. There is less agreement that these goals are mutually compatible or among those who regard them as incompatible, about the terms at which they can and should be substituted for one another. There is least agreement about the role that various instruments of policy can and should play in achieving the several goals.

It comes to be widely believed that new era had arrived in which business cycles had been rendered obsolete by advances in monetary technology. The great contraction destroyed this naive attitude.

Monetary policy was a string. You could pull on it to stop inflation but you could not push on it to halt recession. You could lead a horse to water but you could not make him drink.

Keynes offered simultaneously an explanation for the presumed impotence of monetary policy to stem the depression, a non-monetary interpretation of the depression, and an alternative to monetary policy for meeting the depression and his offering was widely accepted.

If liquidity preference is absolute or nearly so – as Keynes believed likely in times of heavy unemployment – interest rates cannot be lowered by monetary measures.

If investment and consumption are little affected by interest rates- lower interest rates, even if they could be achieved, would do little good.

Monetary policy is twice damned. The contraction, set in train, on this view, by a collapse of investment or by a shortage of investment opportunities or by stubborn

thriftiness, could not, it was argued have been stopped by monetary measures. But there was availability of an alternative fiscal policy. Government spending could make up for insufficient private investment. Tax reductions could undermine stubborn thriftiness.

For two decades monetary policy was believed by all as an unimportant one. Money did not matter. Its only role was the minor one of keeping interest rates low, in order to hold down interest payments in the Government budget. These views produced a widespread adoption of cheap money policies after the war. And they received a rude shock when these policies failed in country after country.

Inflation, stimulated by cheap money policies, not the widely heralded postwar depression, burned out to be order of the day. The result was the beginning of a revival of belief in the potency of monetary policy.

This revival was strongly fostered among economists by the theoretical developments initiated by Haberler but named for Pigou that pointed out a channel—namely, changes in wealth – whereby changes in the real quantity of money can affect aggregate demand even if they do not alter interest rates. These theoretical developments did not undermine Keynes’ argument against the potency of orthodox monetary measures when liquidity preference is absolute since under such circumstances the usual monetary operations involve simply substituting money for other assets without changing total wealth.

In his contribution, John. H. Williams not only Professor at Harvard but also a long-time adviser to the New York Federal Reserve Bank-wrote, “I can see no prospect of revival of a general monetary control in the post war period”.<sup>(62)</sup>

A survey of contemporary Economics, edited by Howard Ellis<sup>(63)</sup> and published in 1948, was an ‘official’ attempt to modify the state of economic thought of the time. In his contribution, Arthur smithies wrote, “In the field of compensatory action, I believe fiscal policy must shoulder most of the load. Its chief rival, monetary policy seems to be disqualified on institutional grounds. This country appears to be committed to something like the present low level of interest rates on a long term basis.”<sup>(64)</sup>

There are, of course, many differences between then and now, less in the potency assigned to it and the criteria by which the profession believes monetary policy should be guided. Then, the chief roles assigned to monetary policy were to promote price stability and to preserve the gold standard; the chief criteria of monetary policy were the state of the ‘money market’, the extent of ‘speculation’ and the movement of gold.

In the 18<sup>th</sup> and early 19<sup>th</sup> centuries, the thinkers who had the most influence on the subsequent development of monetary theory, i.e. David Hume, Adam Smith and David Ricardo, placed emphasis on money as a reflector rather than regulator, of levels of economic activity which in turn, were deemed to be determined by non-monetary factors.

Among the classical economists, Adam Smith emphasized the role of a ‘properly regulated’ banking system, which in his view would provide the appropriate amount of money endogenously through the expansion and contraction of credit.

Both Smith and Hume argued that the quantity of money does not influence the level of interest rates, which according to them, was determined by the level of profit rates in the economy, and not by an abundance of the money commodity.

Both Ricardo and Say believed that money is purely a medium of exchange for commodities against each other, and thus, has no independent role in determining economic activity: money is a veil.

In the early part of the 20<sup>th</sup> century, Irving Fisher took this line of thinking further.

While in the short run a change in the quantity of money or velocity might have some impact on the level of economic activity in the society, in the long run the whole adjustment would be made in the prices of commodities. This thinking dominated the focus of central banking policies for quite sometime.

The Keynesian vision of the economic system was not that of a self-regulating entity, but of a complex set of causal linkages that a policy maker seeks to guide.



Keynes emphasized that the liabilities of the central bank may or may not be convertible into a money commodity. Deviating from the classical economists, Keynes thus deemphasized convertibility as a limit on the operations of the central bank. He explicitly introduced bonds and equities as competing monetary assets and argued that the rates of return on bonds and equities must adjust until wealth holders are content to hold them and deposits in the proportions in which they are being supplied to the public.

Keynes suggested that the relationship between money demand, interest rates and the level of economic activity was volatile, subject to sharp changes depending on the mood of wealth holders and their expectations and fears about the future.<sup>(65)</sup>

Later, after the second world war, the Keynesian orthodoxy took the position that ‘money does not matter,’ i.e. spending decisions of consumers and firms move largely independent of asset rates of return and are more responsive to expecting variables. Any attempt to restrict economic activity by limiting the expansion of bank reserves, it was argued, could be circumvented by the substitution of other liabilities. This extreme non-monetary interpretation of Keynes became the conventional wisdom for central bankers.

In the first two decades after the Second World War, the fiscal policy came to the centre stage of policy affairs while monetary policy was relegated to the back stage.

The typical policy response to the oil shock of 1973-74 comprising expansionary fiscal policies coupled with accommodating monetary policy stance could not generate lasting gains in terms of economic growth. It was recognized that there is essentially no long-run trade-off between inflation and unemployment since anticipated inflation adjusts fully to actual inflation, with the long-run Philip’s curve becoming almost vertical at the ‘natural’ rate of unemployment. These developments paved the way for a more determined fight against inflation. Professional response to these developments was characterized by a significant polarization in favor of the so-called monetarism.

Milton Friedman, the eloquent champion of monetarism, was deemed to be a heretic then. <sup>(66)</sup>

The debate between monetarists and neo-Keynesians had major implications. Neo-Keynesians, in general, diluted their earlier position that money does not matter at all. Monetarists, on the other hand, went to the extreme of suggesting that “inflation is always and everywhere a monetary phenomenon.”

Monetarists and neo-Keynesians both agreed subsequently that monetary policy actions will have a substantial effect on output and prices. The difference between them concerned not whether monetary policy can affect output and prices but regarding how it should be used for economic stabilization.

Economist has long recognized that variations in the stock of money influence the economy.

There has been less universal agreement on precisely what in the economy money affects, how the effects are transmitted, the strength of the effects, the length of time before the effects are observed, and the stability of the relationship.

Some writers had recognized that money had an influence on real income, and some believed that there is an influence of changes in the supply of money on only the price level.

Alternative non monetary proposals for stabilization, particularly those derived from Keynes' General Theory, were accepted as a replacement for monetary policy. These policies were tried not because they had been proven successful but because monetary policy was considered to have been tried to its fullest extent without success.

The large volume of excess bank reserves concomitant with a decline in the supply of money and low interest rates accompanied by a low level of investment were considered evidence of the impotency of monetary policy.

Clark Warburton, during 1940s and a decade later Milton Friedman and his associates began to generate an almost continuous stream of evidence supporting the

close and regular relationship between money, income, and prices throughout the world.<sup>(67)</sup>

Many forces other than economic policy affect the economy. If executed with perfection, policy would reinforce some of these forces and offset others so that the economy would operate at optimum levels at all times. In simple models, this would be reflected by high correlations between the policy variables and the goal variables, when policy reinforces the other influences on the economy and low correlations between the two when policy offsets such influences. Hence, evaluating the effectiveness of policy only by the strength of the correlation may yield a misleading image of the effectiveness of a particular policy.

Both monetary and fiscal policies influence activity significantly, although monetary policy does so with a reasonably long lag.

While Friedman concedes that changes in money can affect real variables in the short run, he argues that in the long run they affect primarily prices and that real variables such as employment and output are affected primarily by non monetary forces such as technology, population, resource endowment, and education.

“Monetary policy has relevance....” pointed out Dr. Bimal Jalan, former Governor of the Reserve Bank, recently, “as long as there is money.”<sup>(68)</sup>

As a matter of fact, global thinking on monetary policy, and by implication, that on central banking, has evolved over time in accordance with the changing perceptions regarding the role of money in economic activity.

Recent advances in monetary economics have differed somewhat from past developments in that they have been primarily empirical. Alternative hypotheses of monetary behavior have been subjected to vigorous empirical analysis using scientific methods of testing hypothesis and new statistical techniques. Prof. Milton Friedman has noted that “the basis differences among economists are empirical, not theoretical.”<sup>(69)</sup>

By monetary policy, we mean primarily central bank actions designed to affect the tightness and easiness of credit conditions, and the behavior of the total supply of

money and money substitutes (i.e. the supply of currency, checkable bank deposits, various categories of time deposits, and other liquid instruments.)

Interest in monetary economics and policy has intensified greatly in recent years for a number of reasons, including an increasing dissatisfaction with the performance of fiscal policy for economic stabilization and the generation of a substantial stream of evidence relating money importantly and in a predictable fashion to income, output and prices.

The increase in interest has been accompanied by a rapid growth both in the number of articles written on monetary economics and in the number of professional journals devoted in whole or in part to monetary economics, policy and institutions.

The monetary developments have not been without controversy, and this work attempts to capture both the highlights and the spirit of the period.

## **REFERENCES**

1. Scitovsky, T. 1940. A Study of Interest and Capital, *Economics*, New Series, Vol. 7(27) (Aug., 1940), pp.293-317.
2. Hicks, J.R. 1967. *Critical Essays in Monetary Theory*. Oxford University Press, London. 226p.
3. Crowther, G. 1958. *An Outline of Money*, Thomas Nelson & sons, London, p.280.
4. Johnson, H.G. 1969. Essays in Monetary Theory, Money in Neo-classical Growth Model, *Journal of Political Economy*, pp.860-76
5. Hicks J.R. 1946. *Value and Capital*, Second Edition, Oxford Clarendon Press, Oxford, pp.11-25.
6. Keynes, J.M. 1936. *The General Theory of Employment, Interest and Money*, Macmillan, London, p.403.
7. Friedman, M. 1956. *Studies in the Quantity Theory of Money*, University of Chicago Press, pp.3-21.

8. Friedman, M. 1970. The Counter Revolution in Monetary Theory. First Wincott Memorial Lecture, the Institute of Economic Affairs. pp.22-24.
9. Radcliffe. 1959. Report of the Committee on the Working of the Monetary System. [www.rbi.org.in](http://www.rbi.org.in)
10. Gurley, G.J. and Shaw, S.E. 1960. *Money in a Theory of Finance*, Brooking Institution, Washington, pp.72-73.
11. Pesek, B.P. and Saving, T.R. 1967. *Money, Wealth and Economic Theory*. Macmillan, New York. pp.85-87.
12. Patinkin, Don. 1965. *Money, Interest and prices*. Harper & Row, New York, Chapter 2, pp.5-8.
13. Pesek, B.P. and Saving, T.R. 1968. *Money, the Foundations of Money and Banking*. Macmillan, New York. pp.145-47.
14. Hart, A.G. 1953. *Money, Debt, and Economic Activity*, Third Edition, Englewood Cliffs, NJ. Prentice Hall, New York, pp.3-6.
15. Radcliffe. 1959. Report of the Committee on the Working of the Monetary System. [www.rbi.org.in](http://www.rbi.org.in)
16. Reddy, Y.V. 2000. *Monetary and Financial Sector Reforms in India*. UBS PD, New Delhi, pp.275-77.
17. Gupta, S.B. 1992. *Monetary Economics –Institutions, Theory and Policy*, S. Chand & Company, New Delhi, pp.3-18
18. Marx, Karl, 1867, *Capital*, Trans. S. Moore and E. Aveling. Chicago. 3 Volumes- Vol.1, pp.1906-09
19. Vaghul Committee: Report on Banking Sector Reforms 1987 on ‘Working Group on the Money Market’. [www.rbi.org.in](http://www.rbi.org.in)
20. Narasimham Committee 1998. Report of the Committee on Banking Sector Reforms, [www.rbi.org.in](http://www.rbi.org.in)
21. Reddy, Y.V. 2000. *Monetary and Financial Sector Reforms in India*. UBS PD, New Delhi, pp.101-02.
22. Don, Patinkin. 1965. *Money, Interest and Prices*. Harper & Row Publishers, New York. pp.5-8.
23. Hume, David. 1750. ‘*Of money*’, Essays, Oxford University Press, Essay –III, [www.econlib.org](http://www.econlib.org)

24. Keynes, J.M. 1936. *General theory of Employment Interest and Money*. Macmillan, London, p.403.
25. Jagdish, Handa. 2000. *Monetary Economics, 'Walras' Law and the Interaction Among Markets.*, Routledge 11, New Fetter Lane, London EC4P 4EE, Chapter 17, p.478
26. Hicks, J.R. 1935. Suggestion for Simplifying the Theory of Money. *Economica*, Reprinted in Friedrich A. Lutz and Lloyd.W.Mints (eds) Vol.2, pp.1-19
27. Chowdhry, Vikram, 2002. *Monetary Policy in India*. Deep and Deep Publications, New Delhi, pp.1-15. :
28. Friedman Milton.1959. The Demand for Money Some Theoretical and Empirical Results, *Journal of Political Economy*, August, Vol.67, No.4, pp.327-351.
29. Marshall, A. 1924. *Money, Credit and Commerce*. Macmillan, London Chapter. 4, pp.38-50.
30. Fisher, Irving. 1922. *The Purchasing Power of Money*. Macmillan, London, pp.17-21.
31. Kapila, Uma, (Ed). 1997, Money and Capital Market in India, *Problems of Indian Economy*, Academic Foundation, Delhi, pp. 390-434
32. Senior, N.W. 1829. 'On the Quantity and Value of Money', Three lectures on the value of money, Lecture.1, pp.5-31.
33. Mill, J.S. 1888. 'Of Money', *Principles of political Economy*, Book.3, Longmans, Green & Co, 6<sup>th</sup> edition, Chapter.7, pp.293-07.
34. Keynes, J.M. 1923. *A Tract on Monetary Reforms*, Macmillan, London, p.682.
35. Friedman, Milton. 1968. The Role of Monetary Policy, *American Economic Review*, March, Vol. 58, No. 1, pp.1-17.
36. Gurley, G.J. and Shaw, S.E. 1960. *Money in a Theory of Finance*. Brooking Institution, Washington, pp.363-64.
37. Fisher, Irving.1930. *The Theory of Interest*, Kelley, New York, Chapters 2, 19. pp.358-60.
38. Patinkin, Don. 1972, *Studies in Monetary Economics: Price Flexibility and Full Employment*, Harper & Row Publishers, New York, pp.8-21.
39. Gurley, G.J. and Shaw, S.E. 1955. Financial Aspects of Economic Development. *American Economic Review*, Vol.45, pp.515-538.

40. Friedman, Milton. 1956. The quantity theory of money – A Restatement., *Studies in the Quantity Theory of Money*, University of Chicago Press, pp3-21.
41. Burstein, M.L. 1963. *The Quantity Theory of Money: Money*, Schenkman, Cambridge, Chapter 14, pp.729-736.
42. Marshall, A. 1924. *Money, Credit and Commerce*. Macmillan, London Chapter. 4, pp.38-50.
43. Patinkin, Don. 1965. *Money, Interest and prices*, 2<sup>nd</sup> Edition, Happer & Row, New York, Chapter 2, p.300
44. Clower, R.W. 1967. A Reconsideration of the Micro Foundations of Monetary Theory, *Western Economic Journal*, Vol.6, pp.1-9.
45. Keynes, J.M. 1936. *A Tract on Monetary Reforms*, Macmillan, London, pp.46-80.
46. Baumol William .J. 1952, ‘The Transaction Demand for cash: An inventory-Theoretic Approach’ *Quarterly Journal of Economics*, November, pp.545-556.
47. Tobin, James. 1956. The Interest – Elasticity of Transactions Demand for Cash, *Review of Economics and Statistics*, XXXVIII, pp.241-247.
48. Johnson, H.G. 1964. *Money, Trade and Economic Growth*. Allen and Unwin, Chapter.5, pp.107-25.
49. Clower, R.W. (Ed) 1969. *Monetary Theory- Selected Readings: The Keynesian Counter-revolution: a Theoretical Appraisal*, Penguin Education, England, pp.270-97.
50. Neumann, J. Von. 1945. “A Model of General Equilibrium”, *Review of Economic Studies*, XIII, pp.1-9
51. Johnson, H.G. 1978. Selected Essays in Monetary Economics: ‘Monetary Theory and Policy’, *American Economic Review*, L 11, pp.335-84
52. Johnson, H.G. 1963. ‘Recent Developments in Monetary Theory’, *I.E.R*, Feb. Vol.6, No.3, pp.29-69
53. Einzig, Paul. 1964. (2<sup>nd</sup> Ed.) ‘*Monetary Policy*’ - *Ends and Means*. Penguin Books Ltd, Harmonds Worth, Middlesex, England. p.432
54. Shaw, G.K. 1960. ‘*Money in a Theory of Finance*’, Brooking Institutions. Washington, pp.356-64.
55. Reserve Bank of India: RBI Publications, various years (1991-2010)

56. Keynes, J.M. 1937. The Ex-Ante Theory of the Rate of Interest. *Economic Journal*, pp.663-79.
57. Burnner, K. 1961. 'Some Major Problems in Monetary Theory'. *American Economic Association, Papers and Proceedings*, Vol. 51 (b): 47-56.
58. Okun, Arther. 1972. 'Fiscal Monetary Activism: Some Analytical Issues', *Brooking Papers on Economic Activity*. Washington, Vol. 1, pp.23-64.
59. Rangarajan, C. 1997. Monetary Policy and Price Stability. *Southern Economist*, 36(8): 34-36.
60. Tobin, James. 1972. 'Inflation and Unemployment', *American Economic Review*, March, pp.1-18.
61. Brunner, K. and Metzler, A.H. 1973. 'Mr. Hicks and the Monetarists', *Economica*, Vol.40: pp.44-59.
62. Williams, John. H. 1941. The Implications of Fiscal policy for Monetary Policy and Banking System, *American Economic Review*. Dec. pp.2-4
63. Ellis, Howard ,1941, Exchange Control in Central Europe, Harvard University Press, Cambridge, Mass, Vol. LXIX, pp. xiv + 413
64. Smithies, Arthur.1948, 'Keynesian Economics: The propensity to consume and the multiplier', *American Economic Review Supplement*, May, Vol.38, pp.299-305.
65. Keynes, J.M. 1930. *A Treatise on Money*. 2 Volumes, Macmillan, London, Vol.1, pp.172-84; *General Theory of Employment Interest and Money*, Vol.2, p.326
66. Friedman, Milton. 1959. 'The Demand for money – Some Theoretical and Empirical Results'. *Journal of Political Economy*, August, Vol.67, No.4, pp.327-51.
67. Warburton, Clark, 1948. 'Monetary Velocity and Monetary Policy', *Review of Economics and Statistics*, XXX, Nov. pp.304-14.
68. Jalan, Bimal. Reserve Bank of India: Monetary and Credit Policy for the year 2002-03. [www.rbi.org.in](http://www.rbi.org.in)
69. Friedman, Milton. 1966. 'Interest Rates and the Demand for Money'. *Journal of Law and Economics*. Vol. 9,October, pp. 71–85



**CHAPTER-III**

**SIGNIFICANCE OF MONETARY POLICY**

## **CHAPTER-III**

### **SIGNIFICANCE OF MONETARY POLICY**

The previous chapter titled as 'Monetary Theory and Policy' dealt with the role of money in economic activity and made a theoretical understanding of monetary phenomena. It also explained definition, objectives, targets and indicators of monetary policy.

Role of monetary policy in developed countries and its activities in developing economies, especially in an emerging market economy like India, is of immense importance. Along that, some monetary constraints affecting the policy implementations, policy formulation and its correlation with the banking system are taken into account in the present chapter, for a detailed discussion.

There has been much talk of the revival of monetary policy at present, especially in the climate of some fundamental changes in the economies of both developed and developing countries. The faith in monetary policy was already beginning to wane to some extent. However, the changes in economic policy in the general economic climate seem to have changed the context in which monetary policy has to operate. Whether some consensus on the role of monetary policy likely to emerge from the dust and din of recent crisis? To what extent, does the recent experience of industrial countries have an impact on developing countries? This is a relevant question simply because there are obvious differences between industrial and developing countries and there is, the tendency to follow the trend in the rich almost always. Distressingly, and often enough, such imitation begins when the trend among the more successful is already beginning to bend. There has also been of late far-reaching monetary development at least in some of the developing countries, particularly in the debt-ridden countries. It might be interesting, therefore, at the present juncture to look at the evolution of monetary policy in recent years with one eye so to speak on the developed countries and the other on developing ones.

### **3.1. ROLE OF MONETARY POLICY IN DEVELOPED COUNTRIES**

In developed countries, monetary policy plays a crucial role. Shifts in monetary policy, like those in all economic policy, are a reflection of changing ideology, perception and objective circumstances. The precise line of demarcation between theory, philosophy and objective is difficult to draw but, one can outline the recent conjuncture in the industrial countries as follows:-

Inflation has come to occupy the pride of place among the objective of economic policy. There has been a shift of emphasis from achievement of full employment to control of inflation-a shift, which is not of so much relevance to developing countries where the control of inflation has been more or less a perennial preoccupation and where the problem of employment has always been seen as an aspect of long-term economic growth rather than short-term economic management. As far as the trade –off between growth and control of inflation is concerned, there has been common ground now for quite some time in developing as well as developed countries that there is no trade-off here but a virtuous circle where growth and control of inflation mutually reinforce each other.

At the level of objectives, emphasis has shifted from short-term management to long-term growth in industrialized countries i.e. from demand management to supply side economics. It is a mistake to reduce problems of growth to the level merely of efficiency in the allocation of given resources as is commonly implied in micro-economic management. The term ‘supply side economics’ captures better the essence of the process of growth. But here again, the developing countries at any rate should have no difficulty in understanding the shift. Basically, the emphasis in supply-side economics is the same as what economists in developing countries have long emphasized, viz, problems of development, which consist largely of removing rigidities and reducing structural weaknesses while maintaining a proper environment of incentives for work, enterprise, saving, investment and economic efficiency in general.

The reduction in emphasis on short-term demand management which is often described as the final negation of Keynesianism seems to apply asymmetrically only in one direction. While it is vigorously asserted that one cannot increase activity or

employment by raising demand, there is equally firm belief that inflation can be curtailed by controlling demand. As far as the anti-inflationary policies are concerned there is no difference between so called monetarists and Keynesians as to the need for reducing demand; the difference, if at all, is about the instruments or policies to apply for reducing demand. In addition, even here, the ideological belief of so-called monetarists in the need for reducing the size of the public sector in practice leads to greater reliance on fiscal policy through a reduction in the public sector borrowing requirement than on any change in monetary policy. Indeed, it is possible to argue that monetary policy despite all the fanfare and monetary targeting for a while has been a minor side show or shadow play. There is certainly a moral here for all countries.

While a great deal of homage is paid to monetary policy and monetary management in developed countries, this is essentially in the context of inflation or the exchange rate, and not in the context of growth. The financial system in developed countries is a little too sophisticated and over-developed than the developing countries.

Central banks in developing countries like India have an important role to play in promoting development. But apart from the role of the Central Bank in promoting the growth of a diversified financial structure, in creating confidence in it through various devices like supervision and deposit insurance or financial pump-priming and in influencing lending in healthy and desirable direction, there are other considerations more directly related to the traditional concerns of monetary policy which are relevant here.

It is arguable that in developing countries, where entrepreneurship is weak, and capacity to assume and assess risks very limited, there is a strong case for a greater degree of stability in the interest rate structure as indeed in the exchange rate at least in real terms. This may mean that a good monetary policy in developing countries may well be one of great self-restraint.

While real interest rates on an average have to be positive to stimulate savings as well as to ration investment efficiently, it has to be recognized that too high a real rate of interest may be totally out of line with the profitability of available investment opportunities in the short-run, so that it might chock off not just risk capital but all or

most of investment. Alternatively, it could breed losses on a scale that would necessitate neutralizing high interest charges by subsidies in other forms. Short-term monetary policy in developing countries cannot thus be pursued without due regard for these longer term consideration.

Controlling inflation has been an important objective of monetary policy always. Apart from that, there has been a general preference among developed countries for the free operation of market forces and resistance to Government intervention or regulation of all kinds. This has been the inspiration for the abolition of exchange controls and for the de-regulation of the financial system which, together with the profound improvement in information technology, have led to a number of financial innovations. These developments have had a serious impact on monetary policy in developed countries. Thus the general belief in the free and unfettered operation of market forces means that monetary authorities have for all practical purposes discarded several of their traditional instruments.

The bank of England, for example, has given up the use of reserve requirements and no longer tries to influence the quantum of credit directly through rationing its own refinance, or to moderate particular areas of credit like mortgage finance. For all practical purposes it relies only on the price of its refinance, i.e. on interest rates at the short end, although occasionally it has relied on what is called over-funding i.e., open-market operations in another guise.

In Italy, where the tradition of more detailed direct control of bank credit was more established, there has been a rapid advance towards control of a more general nature.

It is true that in response to the greater exposure to risks when interest rates and exchange rates change more often and more sharply, there has been a renewed attempt to prescribe capital adequacy requirements. But on the whole, even monetary targeting has become more of a ritual than a reality and monetary policy has operated through changes in interest rates which soon get reflected in changes in exchange rates so that it becomes difficult to follow any kind of harmonious monetary and exchange rate policy in one country without some harmonization of monetary and exchange rate policy at

least among countries, among which capital moves freely. Since such harmonization is far from being a reality and cannot in any case be perfect, and hence expectations play a major role in the determination of interest and exchange rates in integrated financial markets, both interest rates and exchange rates have become very volatile and are often out of gear with longer-term parameters of desirability.

It is interesting to note that, apart from the ideology of laissez-faire and developments in financial markets, some of the theoretical refinements of recent years also argue in favor of a less active role for monetary policy. Whether or not one believes that a fixed and firm rate of monetary expansion is feasible, let alone desirable, there is undoubtedly merit in the point that several kinds of short-term fluctuations are better left alone or dealt with by means other than monetary policy. As we shall notice later, it is possible to put more burden on monetary policy than it can bear and it is important to remind ourselves, particularly in developing countries, of the dangers of fine-tuning and of the merits of a more or less steady course over time in the interest of creating a stable climate of expectations.

Another recent development is the hypothesis of rational expectations. If policy measures are fully anticipated and their impact correctly foreseen, there is little or no scope for policy, as private operators will so adjust their behavior as to neutralize anything that goes against their own preferences. Whatever may be the logical validity of proceeding from such a hypothesis or its realism, the fact remains that policies are made in a climate of passive acceptance and that expectations and anticipations play an important part. In order to generate the right expectations and establish credibility, a monetary authority may be tempted to announce some predetermined target or rule. But when something can be fully anticipated, it can be got around also. Monetary authorities are thus constrained to create an air of mystery around them, to keep their options open but their mouths shut, to pronounce the virtues of discretionary and, therefore, discrete policy changes. But this creates the risk of disbelief or of setting in motion perverse expectations. There is no escape from this dilemma.

The third strand of a theoretical nature which may be noted goes back in a way to the Radcliffe committee Report and relates to the fact that money is only one among

many financial assets each differing only marginally from others in respect of yield and liquidity or credit and market risk. Current developments such as globalization of capital markets, securitization of loans and other financial innovations have vastly increased the range and substitutability of financial instruments so that monetary policy which influences only one end of the spectrum, viz. commercial banks, cannot be very effective in influencing the general liquidity of the economy and the level of aggregate demand except in so far as it raises the general level of interest rates. But apart from the limited impact of changes in interest rates on demand, the impact of monetary policy on interest rates in general is also diluted by the range of financial markets and instruments. Although these considerations may appear to be less relevant for developing countries, where financial innovations have not reached the same proportions, there are other institutional factors like informal credit markets, extensive black economy and external leakages which argue the other way.

The recent developments in monetary theory and practice in developed countries suggests that despite the apparent revival of monetary policy in these countries, the reality perhaps is that monetary policy has been relegated to a more modest role in the industrialized world. It is at any rate confined to what might be called harmonization of interest rate and exchange rate policy which as yet remains difficult of achievement. The primary responsibility for the control of inflation which has undoubtedly been achieved, has been that of fiscal policy assisted at times by overvalued exchange rates and often by high rates of unemployment and measures to reduce trade union power.

The recent developments in monetary theory and practice in developed countries shows that even in developed countries the jury is still out and the appropriate policy – mix has yet to be settled down. If there is any strong, surviving strand, it is to be emphasize longer- term or real factors such as productivity or efficiency, savings and incentives and enterprise as distinguished from monetary or financial manipulation. This is, in fact, music to the ears of orthodox development economists.

The only question is whether financial and other market can be made so to behave as not to distort unduly the nexus between current market prices and desirable

as well as feasible longer –term adjustment. But our knowledge of what a desirable and feasible adjustment might be, and what might bring it about will never be certain or perfect. Does this argue for a less interventionist monetary policy, smoothing out, on an average excessive variation but leaving trends alone without worrying about whether such trends are consistent with fundamental forces?

Or whether a more interventionist but harmonized policy in order to reinforce what might be perceived as basic or fundamental trends? This is still an unresolved question for the developed world, and is by no means irrelevant for the developing countries.

Money and exchange market become jittery and they try to hedge by employing the ever-growing number of financial derivatives. Corresponding to hedging, there must be speculation, which after a while grows into astronomical dimensions. Everybody was happy about it- national financial institutions, regulatory authorities, industrial units and of course financial brokers and jobbers. There is a lot of anonymity in these markets so that anybody can build up huge open positions, endangering the stability of the markets. Thus, speculations become a way of life and the financial sector grows and grows, has been regarded as a sure sign of a rapidly growing and mature economy.

For many years now, there has been a total freedom for funds to move across national frontiers, so far as the developed countries are concerned. Some countries like France and Japan were reluctant to remove controls on capital transactions wholly, but had to yield under pressure of other members of the G-7 countries, especially the U.S.A. However, Japan has still to go the whole hog; the Japanese authorities are always extremely cautious in their economic liberalization.

All the developments have led to a marked diminution in a national central banks' ability to perform its regulatory role effectively. The fantastic growth of non banking financial intermediaries affected commercial banks seriously; so they were driven to enlarge the area of operations to engage in particular, in industrial financing, investment and merchant banking business, directly or through subsidiaries. All in all, the segregation of commercial and investment banking was abandoned in favor of a



composite or integrated system. This naturally made central bank control over the banking system more difficult. Diversification in industry is good, of course up to a point, but financial diversification may not be that good, especially with general managerial culture not being of a high order.

Simultaneously, there took place an important change in the monetary policy of central banks. While even before the 1970s it was common for central banks to use just one instrument of central bank control, such as variable cash reserves, discount rate or open market operations, that instrument was not used for all time. After some years, the central bank turned to another instrument. But the position for over three decades now is reliance on the same instrument day in and day out, namely the discount rate, which has been varied frequently in both directions. The general rule seems to have been to follow the market. The market is far from knowledgeable and wise. Secondly, if a central bank is to follow the market all the time, one wonders why a central bank is necessary at all, except for carrying out some routine functions. The central bank has to take a view about both the present and the future, and try to enforce it with various instruments at its disposal.

That monetary policy, in general has failed may be seen tremendous instability in exchange markets, growing number of failures of banks and other financial intermediaries and the ups and downs of growth of GNP. However, interest rates may be, inflation will not be checked and the exchange rate strengthened, unless the basic course of fiscal profligacy is removed. The United States of America is a classic example of this phenomenon. This country has been complacent far too long because of the belief that the dollars will be held in unlimited amounts and indefinitely. Look at the sad spectacle of the US economy now. The USA is the largest recipient of aid for many years now. Why, for the simple reason it has huge budgetary deficits, which are financed by foreign funds, this has been going on for years and years, in a most irresponsible and shocking manner.

From the foregoing, it should not be concluded that fiscal policy alone matters and not monetary and credit policies. There are situations when the economy can get heated or otherwise, through over expansion of credit for industry and trade or

inadequate supplies. Such situations can be handled with modest doses of credit control measures and less frequently than when fiscal and other governmental policies are imbalanced.

### **3.2. IMPORTANCE OF MONETARY POLICY IN DEVELOPING ECONOMIES**

It is now generally accepted that the primary role of monetary policy in developing countries is to facilitate economic growth with a reasonable stability in prices.

Balance of payments is more a constraint than an objective; and it makes sense to interpret stability broadly as control of inflation or keeping the general price-level from rising by more than a few percentage points per year. Regarding a rise of this order as reasonable has no intrinsic merit although it is sometimes argued that it is necessary to permit required changes in relative prices. In truth, it is only recognition of reality as in practice very few countries manage to do as well. But once more and more countries achieve low rates of inflation, it should be feasible to aim at even lower rates; and it has to be regarded as a major achievement of recent years that it is no longer considered unthinkable to aim at a zero rate of inflation on an average such as what has prevailed in fact over much of the industrial era.

For achieving stability, it is generally considered necessary to keep the growth of money supply in step with the demand for it, which is assumed to be uniquely related to national income, at any rate over the medium-term and when due allowance is made for secular changes such as those arising from growing monetization of the economy. This line of reasoning has led in practice to some version of monetary targeting in developed as well as developing countries, often encouraged by stabilization programs initiated under IMF or World Bank auspices. As early as 1953, an IMF mission to India had recommended such a practice which has later found support also from the Chakrabarty Committee set up to review the working of monetary policy in India.

Despite the general support and indeed practice of monetary targeting as a necessary instrument for achieving and maintaining stability, criticism of this approach is also heard often. Some of the criticism of monetary targeting, however, is certainly beside the mark. It can be easily shown, for example, that the velocity of circulation of money or the income elasticity of demand for money is not constant over relatively short periods of time. But there is some relationship which can be calculated as being reasonably stable over a period and it can be assumed as what is likely to prevail in the near future. No one in the realm of practical politics recommends a strict monetary target. Most such targets are set as a range, and there is always the admonition that monetary targets must be kept under review. The Chakrabarty Committee thus speaks of monetary targets with a feedback.<sup>(1)</sup>

What needs perhaps to be emphasized is that monetary targeting should not lead to constant tinkering with monetary policy so as to counteract every deviation from the target set. Such tinkering or fine-tuning can be destabilizing and counterproductive. But systematic and large deviations from monetary targets already set should serve as a signal for reviewing policy. The criticism that monetary targeting while necessary is not sufficient is of course valid, and it was echoed long ago by Joan Robinson.

Monetary targeting makes sense only if the permissible increase in money supply is correctly distributed between the legitimate claims of the budget, the private sector and the country's need for foreign exchange reserves. But surely advocates of monetary targeting are aware of this and, in fact, monetary or credit budgeting is generally attempted on a disaggregated basis. Indeed, it can be claimed as a merit of monetary targeting that it focuses attention on a proper mix of budgetary, monetary and foreign exchange policy.

It is not easy to apportion the permissible increase in money supply between the budget, the private sector and the external sector. As an economy grows and its external trade expands, it will need more foreign exchange reserves and this should have the first priority in the allocation of the permissible increase in money supply. Much of the debate centers on allocation between the public and the private sector. The bias in developed countries now is to under play the needs of the public sector. In most

developing countries, there is a tendency to put the needs of the public sector before those of the private sector- witness the Chakrabarty Committee which lists among the functions of the Reserve Bank the provision of the urgent needs of the Government without any reference to the competing claims of the private sector.

The Reserve Bank cannot perform its developmental role properly unless it assumes responsibility for the establishment of a diversified financial structure that supports the borrowing and lending needs of the private sector. Part of this responsibility can be discharged by the Central Bank directly providing resources to credit institutions that support the private sector. But if any a priori rule about how much of a central bank's assets should be in foreign exchange reserves and how much in claims on Government and how many in claims on the private sector including claims on developmental financial institutions can be laid down. The relative importance of the public and private sector in national productive investment should be borne in mind and some room must be left for the accumulation of foreign exchange reserves.

It is difficult to prescribe a precise boundary for 'money' when there are so many near substitutes for money. It is also true that money which is easy to control such as reserve money may not be in the most stable relationship with national money income. But the point is that as long as monetary targeting is used only as a significant indicator and not as a rigid framework, there is nothing wrong in watching trends in money supply as variously defined and interpreting the trends in the light of all the facts currently available. Indeed, any sensible economic analysis which must precede any policy decision must include the analysis of monetary and financial developments and analysis implies at least in part, comparison with some standard or target.

The criticism of monetary targeting is the one which starts by pointing out those monetary targets at best are intermediate targets and the policy response to them has to be discretionary rather than rule based. If the objective is price stability and external viability, one can look simply at trends in prices and balance of payments and analyze them and wield such instruments of policy as may appear relevant in the light of this analysis. Indeed, concentrating too much on an intermediate target like stocks of money

is not just second best; it may even be misleading as it may narrow the focus on monetary factors and lead to the overlooking of other factors. Current pressures on prices, for example, may be the result of interruptions in key supplies, or due to some external shock, or due to wages exceeding productivity increases, rather than the result of excessive demand resulting from excessive credit creation. A strictly monetary response in such cases, may be inadequate or of little use.

One should speak of monetary targeting only as a minor key. There is a great deal of merit in this line of reasoning. But let us also remember that it only reminds us that mere analysis of monetary trends and setting of monetary targets may not be sufficient. It does not say they are not necessary. Undoubtedly, it is useful to remind ourselves that the starting point should be the final goals of price stability and B.O.P stability and not some intermediate and approximate indicators such as money supply which may be relevant as a part of the analysis as well as of the cure but are never the full story.

There is another valid criticism of monetary targeting which is of an analytical character, viz; that for an indication of inflationary pressures and their cure, it is better to think in terms of the familiar Keynesian categories of budget deficits, current account deficits, and the difference between private savings and investments. In other words, the significant question is not the allocation of the permissible increase in money supply between the public and the private sector but the allocation of available savings, or who crowds out whose investment and how. Merely talking of money creation or money supply obscures this fact.

It is important to emphasize that if the basic budgetary position is not right, it cannot be set right by action on the fiscal front itself. But if the fiscal front is set right, monetary policy can be relaxed. Given fiscal prudence, it is of little avail. In most developing countries, inflationary pressures arise from the operations of the budget rather than from any upsurge in credit to the private sector. Monetary policy cannot really correct this situation. It can at best bring home more effectively the consequences of important public finance. Whether it does so through rocketing interest rates or rising prices is not of much comfort or consequences except perhaps to ideologues.

It has to be remembered that where interest rates are controlled or administered and where the central Bank virtually underwrites budgetary deficits as is the case in most all developing countries, the savings and investment approach and the monetary targeting approach come to virtually the same thing. The monetary approach has at least the advantage that monetary data are more readily available so that they are a better or more feasible basis for planning and monitoring.

Each exercise of activist monetary policy becomes irreversible in practice because as long as budgetary policy is inflationary, any relaxation of monetary restraint will be open to criticism. The result is that there is a kind of Ratchet effect whereby interest rates, reserve requirements and all the rest keep going up and monetary instruments in effect become blunt and arbitrary in their impact on private investment and activity. The major responsibility for maintaining stability in developing countries is considered as that of fiscal policy and that monetary policy at best has a subordinate role. Its actions, therefore, should be muted and more self-restrained.

In the ultimate analysis, there is no alternative to the good sense of the people in power and the pressure of public opinion. It might nevertheless, be desirable at least to try and set some norms for the Government budget and for debt management. Thus, as a minimum, there should be no borrowing to finance current expenditure. Commercial banks should not be forced to take up Government securities beyond a certain proportion of their liabilities and this proportion should not be changed except after relatively long intervals. This proportion is generally fixed in response to prudential considerations. It is also worth considering whether norms cannot be fixed for central Bank support for Government Securities – such norms are implicit in monetary targeting in any case, and it may be worthwhile to make them explicit over a number of years ahead. But in the ultimate analysis, norms are norms and cannot be binding particularly in countries where the market for Government securities outside the banking system is rather thin, and the credibility of norms will depend on how closely they are observed.

### 3.3. SOME MONETARY CONSTRAINTS

There has been a great deal of debate and experimentation with monetary programs in developing countries. Much of the debate and discussion has centered around programs prescribed by the IMF, the central part of which has been insistence on monetary targeting. So far as we see some practical value in monetary targeting, we cannot object to IMF programs in principle. It is not valid to criticize the IMF for any program of stabilization, such as the conflict in the short-run between growth and stability or the conflict between desirable social goals and budgetary restraint and so on. If there are better answers for resolving such conflicts, surely the countries concerned should know them better than the IMF.

The IMF can be criticized for two things. First, its faith in monetary targeting was too absolute. Surely any transgression of monetary targets is or reason for reviewing policy, not for stopping I M F assistance and thus creating a further crisis of confidence. Second, and perhaps more important to begin with at any rate the Fund took to moralistic view towards developing countries only. It seems that even if difficulties arise for reasons beyond our control, we have to adjust as long as these difficulties or circumstances are not likely to be reversed. But surely this general argument could have been strengthened by advocating strongly that the adjustment can only be made sensibly over a period. The IMF and the Central Banks of developed countries talked for a long time as financiers rather than as a body of world statesmen. But that is the politics of the world economy, which is unfortunately not likely to change.

One moral of recent experience in developing countries that once inflation is allowed to accelerate, it is difficult to bring it under control except by strict monetary measures. Even when monetary measures like currency reform and total restructuring of prices are necessary, they would stick only if at the same time orthodox measures are taken to correct the budgetary imbalance and to rein- in the unions and the speculators. There is, in other words, no magic solution to hyperinflation any more than the problem of correctly guessing the changing needs for liquidity when high inflation rates are suddenly brought down. Experience shows that the demand for money often increases

with stabilization so that unless this is met, a crisis may result causing much loss of output and employment. But it is not easy to guess the extent of the change in the demand for money correctly.

An interesting chapter that is unfolded in many developing countries is that of liberalization from a regime of extensive controls to greater reliance on market forces. This general shift has embraced not just the developed world or the socialist world but also many of the developing countries like India which have had a mixed pattern of ownership with a heavy bias in favor of public control or intervention. An interesting question in all these countries at the present juncture is the role that financial liberalization can play as part of the total process of liberalization and globalization. But difficult to generalize on a question like this where the institutional and other specifics of each country are of obvious importance.

There is need for diversification among financial institutions and for a degree of deregulation and competition leading to greater financial innovations. Thus banks may be encouraged to go in for mortgage finance or long-term industrial finance; industrial banks, unit trusts and provident funds can also diversify their port folios, and indeed more private banks, private unit trusts or private industrial and other financial institutions should be encouraged.

The spirit of liberalization will also imply that even public financial institutions, including the central Bank, should be freed from routine governmental intervention and so this should be reflected in appropriate managerial and constitutional structures. The financial institutions themselves should avoid policies and procedures which give too much discretionary powers to individual officers as well as for the Government. After all, abuses of power and corruption or politics and being over-burdened with too many objectives can do harm to financial institutions as much as they do in most other institutions.

Developments in industrialized countries are of significance to developing countries and some of them may be profited by the later. At the same time, the policy-mix in developed countries has not yet settled down. As far as monetary policy is concerned, it can at best have a sub-ordinate and supporting role in both sets of



countries. There is little reason to think that it can be more effective in one group of countries than in another. Economic logic often transcends institutional frontiers as well as national frontiers.

There is a greater danger in developing countries and it is that of giving to the central Bank an exaggerated role under which it assumes rather hyper-active poses. It has to demonstrate to its masters that it is doing something. Actually, the central Bank cannot wash away the supply-side shocks. At the same time, it has a very important developmental role. It also has an important role in terms of analysis and advice on matters relating to inflation and balance-of-payments adjustments; and its part of advice can often best be transmitted by analysis of monetary and financial aggregates and by persuading governments to adopt procedures such as monetary target setting which facilitate focusing on the interactions between budgetary, monetary and foreign exchange policy.

When it comes to inflation, it is best to resist in the first place. Two plus two never makes five when it comes to allocation of national resources in the short-run, but it is possible to have two plus two make five in the long-run if proper supply side policies are followed. This include better savings and efficiency in investment as much as a proper framework of incentives for work, investment and enterprise. Sometimes, so dismal is the science of economics that two plus two can also make three when wrong policies are followed and the dividing line between the right and the wrong in economics is never very sharp or stable!

### **3.4. MONETARY POLICY AND BANKING SOUNDNESS**

Y.V. Reddy pointed out some special links between monetary policy and banking soundness.

First, the banking system continues to be, and will continue for quite some time, especially in developing countries, as the main vehicle for monetary policy signals.

Second, the banking system enables the transmission of monetary policy. So, transmission channels, especially the credit channels are important.

Third, the payment system is critical to monetary policy, and crisis of the banking system spills over to the payments system.

Fourth, those banks which are in an unsound position are unable to respond to signals.

Fifth, while ideally, monetary policy on the one hand and regulation or supervision on the other should operate independent of each other, in practice, the two often get intertwined. Thus, monetary policy initiatives, such as tightening liquidity, credit conditions and interest rates may, on occasions take into account the impact on bank's profitability, especially fragile banks.

Sixth, unsound banks could become captive to insolvent debtors and their response to market signals could get perverse.

Seventh, as already mentioned, managing capital inflows, the exchange rate and the monetary base is facilitated or hampered by banks which are sound or not solvent.

Eighth, it is possible that the credit channel is choked due to non-economic or institutional rigidities usually ascribed to principal agent relationships in banks. The effectiveness of monetary policy and perhaps even the regulatory or supervisory regime could be influenced by such non-economic factors.

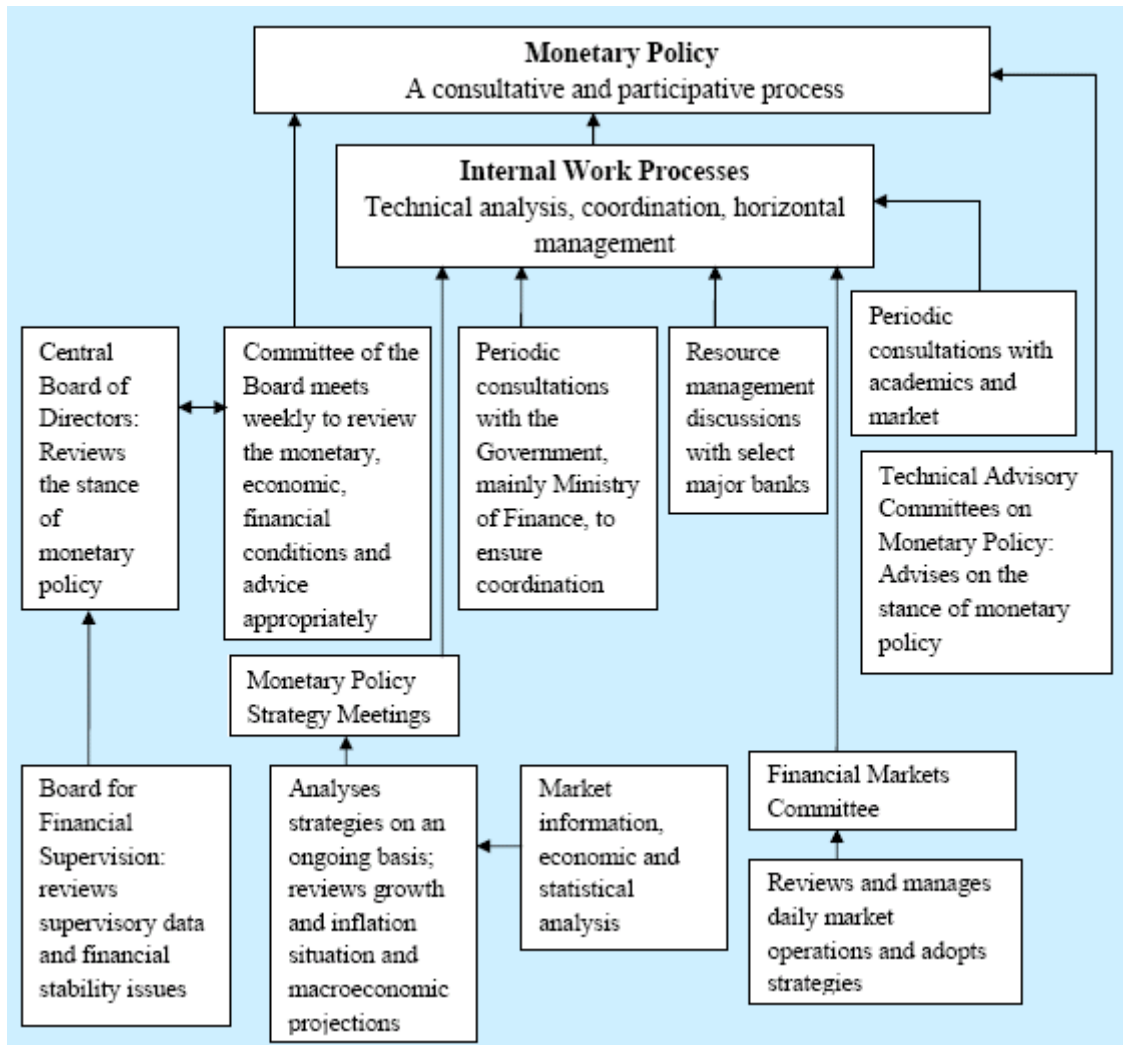
Ninth, monetary policy has to recognize the strains of deregulation on the banking system. Also, the data needs keep changing with transition, apart from the importance of timely and reliable data from banks if monetary policy has to cope with fast changing realities and markets.

Finally, and as a sum-up there is a clear two-way intimate interrelationship between monetary policy and banking soundness<sup>(2)</sup>

The process of monetary policy in India had traditionally been largely internal with only the end product of actions being made public. The process has overtime become more consultative, participative and articulate with external orientation. The internal work processes have also been re-engineered to focus on technical analysis, coordination, horizontal management and more market orientation. The process leading

to monetary policy actions entails a wide range of inputs involving the internal staff, market participants, academics, financial market experts and the Bank's Board (Chart: III.1).

**Chart: III.1 Process of Monetary Policy Formulation**



Source: Deepak Mohanty, *Implementation of monetary policy in India*

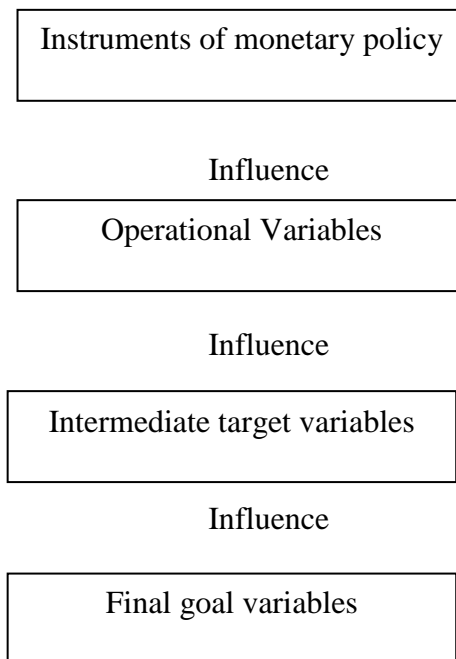
Several new institutional arrangements and work processes have been put in place to meet the needs of policy making in a complex and fast changing economic environment. At the apex of the policy process is the Governor, assisted closely by Deputy Governors and guided by deliberations of the Board of Directors. A Committee of the Board meets every week to review the monetary, economic and financial conditions and renders advice on policy. There are several other standing and *ad hoc* committees or groups which play a critical role with regard to policy advice. An

interdepartmental Financial Markets Committee focuses on day-to-day market operations and tactics while periodic monetary policy strategy meetings analyze strategies on an ongoing basis.<sup>(3)</sup>

### 3.5. MONETARY POLICY IMPLEMENTATION

Since the structure of the economy is unknown, the exact effect of a policy on ultimate policy objectives cannot be ascertained. Also the goals of monetary policy are observable only after a considerable and variable lag. In such a case, from a pragmatic point of view, a target variable is introduced which is assumed to be closely related to the ultimate policy objectives and is observable with little or no lag.

Saving suggested target-indicator approach to examine the effectiveness of monetary policy. This approach which focuses on operational and intermediate target variables can be rendered schematically as follows:



The success of monetary policy in the operational intermediate target approach, thus, depends on the stability and predictability of the relation between the operational and the intermediate target variables on the one hand, and between the intermediate and

ultimate goal variables on the other. The two pertinent issues for the conduct of monetary policy, are those of controllability and predictability. While the issue of controllability requires a strong stable and one way causal relation running from operational to intermediate target variables, the issue of predictability concerns the direction, strength and stability of relation between the intermediate target variables and the final goal variables.<sup>(4)</sup>

In India too, monetary authorities have been using the operational intermediate target approach for the implementation of monetary policy. A perusal of measures undertaken by the RBI would indicate that the Bank, for achieving its objective of 'growth with stability', announced various monetary targets from time to time. While some variant of bank credit was used as an intermediate target till 1983-84, M3 was targeted after 1985-86 following the Chakrabarty Committee Report. Indeed, the monetary measures in India were so designed as to influence through proximate target variables, the intermediate target variables and finally through them, the final goal variables.<sup>(5)</sup>

## **REFERENCES**

1. Chakrabarty Committee Report, 1985. Committee to Review the Monetary System, [www.rbi.org.in](http://www.rbi.org.in)
2. Reddy Y.V. 2000. Monetary and Financial Sector Reforms in India. A Central Banker's Prospective, UBSPD, Delhi, pp.121-22
3. Deepak Mohanty, 2010. Implementation of Monetary Policy in India, Speech Delivered at the Banker's Club, Bhubaneswar on 15<sup>th</sup> March, [www.rbi.org.in](http://www.rbi.org.in)
4. Chowdhry, Vikram 2002. Monetary Policy in India, Deep and Deep publications, Delhi. pp.11-12.
5. Reserve Bank of India: RBI Annual Reports, Mumbai, Various Years (1991-2010)

**CHAPTER- IV**

**REVIEW OF MONETARY POLICY SINCE 1991**

## **CHAPTER- IV**

### **REVIEW OF MONETARY POLICY SINCE 1991**

This chapter examines the conduct of monetary policy during the last nineteen years (1991-2010) on the basis of the theoretical background that were explained in the previous chapters, it will help to assess the effectiveness of monetary policy in different economic situations which were prevailing since 1991.

The year 1991-92 was an exceptionally difficult year for the economy with the deepening of the crisis which began in 1989-90. The balance of payments problem, which emerged in 1989-90 and aggravated in 1990-91, had reached crisis proportions by June 1991. A severe import squeeze, introduced in the course of 1990-91 in response to the shortage of foreign exchange, disrupted industrial production, which began to decline early in the year 1991-92. Inflation, which had begun to accelerate in 1990-91, reached a peak level of 16.7 per cent in August 1991. Growth of real GDP decelerated sharply.

The new Government which assumed office in June 1991 took a series of corrective measures to bring the situation under control. These included short-term measures aimed at crisis management as well as long term measures of structural reform, aimed at improving efficiency and productivity and putting the economy back on the path of sustainable growth with equity and social justice.

#### **4.1. MONETARY POLICY 1991-92**

The growth of the economy slowed down substantially in 1991-92, partly because of a slowdown in agriculture and partly because of a deceleration in industrial growth. This sluggish performance, coming after several years of rapid growth, is to be viewed in the context of exceptionally difficult conditions in two respects: a grave external payments crisis and a high rate of inflation. Both reached their peak in the middle of 1991. Foreign currency assets had declined to Rs.2383 crore (US \$1.1 billion) at the end of June 1991, which was barely enough to finance two weeks of imports. The annual rate of inflation, which began to accelerate in 1990, reached a

peak of 16.7 per cent in the fourth week of August 1991.

The new Government moved rapidly to implement a programme of macro-economic stabilization to restore viability to the balance of payments and to bring inflation under control. It also undertook a far reaching programme of structural reform, which included bold initiatives in trade and industrial policy aimed at improving the efficiency of the economy and increasing its international competitiveness. This restructuring was essential to ensure longer-term viability in the balance of payments and to restore the conditions for rapid growth.

The measures have had some success. There has been a marked improvement in foreign exchange reserves, with reserves reaching Rs.11410 crore (\$4.4 billion) in the third week of February 1992. The rate of inflation has also declined from the peak level of 16.7 per cent reached in August 1991 to 11.8 per cent in February 1992. However, neither the balance of payments crisis nor the problem of inflation has been overcome. A lasting solution to these problems called for sustained corrective action which continued to receive top priority in 1992-93.

## **4.2. MONETARY POLICY 1992-93**

Although the economic crisis of mid-1991 had been contained, and a programme of structural reforms initiated, inflation was still running high, the balance of payments remained under strain and industrial production was depressed. The economic situation has improved substantially in the year under review. There has been decisive progress in overcoming inflation and the rate of inflation has declined to seven per cent. The balance of payments situation, though still difficult, showed hopeful signs with a pick-up in exports to the hard currency area. Industrial growth was picking up slowly and was better than in the previous year. The policy initiatives introduced after June 1991 have positive impacts. This gave confidence to the policy makers regarding the effectiveness and the direction of reforms, and if the reforms were continued, then Indian economy can overcome the severe constraints and assure a more prosperous future for the people. The programme of stabilization and the economic reform measures put in place in 1991-92 helped to restore economic growth to 4 per cent in 1992-93, brought down the rate of inflation to 7 per cent, restore the level of foreign



currency reserves to \$6.4 billion and stimulate a strong recovery in exports towards the end of the financial year.

The year has not been without setbacks. The irregularities in securities trading in some banks damaged liquidity and temporarily raised questions of confidence. The riots in December 1992 and January 1993 disrupted transportation, slowed the growth of exports and industrial production, and reduced revenue. Without these setbacks there would have been faster recovery in both output and employment in 1992-93.

The balance of payments position, which had reached a point of near collapse in June 1991, slowly stabilized during the course of 1991-92. Although new policies to deal with the situation were quickly formulated by the new Government and implemented within a few months the external payments situation took time to stabilize primarily because it had been allowed to deteriorate to a state of near bankruptcy in June 1991. Foreign currency reserves had declined to \$ 1.1 billion despite heavy borrowing from the IMF in 1990-91. However, it was restored to more normal levels increasing from \$1.1 billion in June 1991 to \$ 5.6 billion at the end of March 1992. The balance of payments in 1992-93 has performed more or less as expected.

Inflation was the most pressing problem for the common man in 1991-92, especially as the rate of inflation for food articles was much higher than for all commodities. The situation improved considerably in 1992-93 with a gradual decline in the annual rate of inflation in the course of the year. The annual rate of inflation as measured by the wholesale price index declined from 13.6 per cent at the end of 1991-92 to 6.9 per cent on 30 January 1993. The decline in inflationary pressure was especially marked in primary articles including food grains. The deceleration in inflation was a major achievement of economic management in this year.

After growing by 15.3 per cent in 1991-92, money supply (M3) has slowed down in this year with a growth of 12.3 per cent. It is interesting to note that although money supply growth has decelerated in line with the reduction in the fiscal deficit and its monetized component, the budgetary deficit, the growth of M3 remained higher than the targeted level of around 10.5 per cent for the year as a whole.

The role of monetary policy has too long been a passive one, confined to financing the fiscal deficit at administered interest rates in order to minimize the cost to the Government. It was necessary to make a decisive break from this pattern. With the reduction in the fiscal deficit, the Government was working towards a situation where interest rate distortions were reduced and monetary policy could be actively used for short-term macro-economic management. The Government has progressed towards this aim in the past year with a number of initiatives.

It was not enough, however, to change the rules of monetary management; what required was a comprehensive reform of the banking system, the capital market and their regulation. The Narasimham Committee has made comprehensive proposals for reforms in this area.

In recognition of some problems the Government has decided progressively to reduce the pre-emption under the SLR and CRR and steps have been taken in this direction in the course of 1992-93. It was intended by the Government to reduce the SLR to 25 per cent over the next three years and to reduce the CRR to below 10 per cent over a four-year period.

The freeing of financial institutions from compulsory investment in Government securities has been gone hand-in-hand with the development of a wider market for debt instruments.

With the proposed reduction in SLR and government deficits, it was expected a reduction in the high interest rates being charged in the commercial sector. It was also necessary to rationalize the structure of lending rates. Progress had been made in reducing the number of lending rates from six to four during 1992-93. It is decided to rationalize the structure by reducing the number of rates to three. In the long run, it was considered the possibility of moving to just two rates, with one general rate and one concessionary rate.

### **4.3. MONETARY POLICY 1993-94**

The Year 1993-94 saw further fruits of the initial array of reforms, the deepening of the reform efforts in some areas and the identification of new priorities for

public action. The balance of payments position has improved markedly. Foreign exchange currency reserves had reached \$10.91 billion by February 4, 1994. The Stand-by Arrangement with the IMF negotiated in 1991 was successfully completed in June 1993. Inflation was running below 8.5 per cent in January 1994.

The second kind of borrowing, from the RBI, has, together with the increase in net foreign assets, fuelled the growth of reserve money in the economy. Reserve money increased by 16.9 per cent during 1993-94 (up to January 8, 1994) almost double the growth of 8.5 per cent over the same period in 1992-93. The growth in money supply (M3) during this period of 1993-94 at 14.1 per cent was also higher than the 12.4 per cent growth recorded in the corresponding period of 1992-93. The slower growth of money supply (compared to reserve money) was mainly due to two factors: the unusually large increase in currency held by the public, which moderated expansionary effects of reserve money on money supply; and the inhibitions on bank lending attributable to tighter prudential norms and the post-scam, cautious environment.

Despite the restraints on money supply growth, the expansion of liquidity was sufficient to accommodate an acceleration of inflation from August, 1993. The point-to-point rate of increase in the Wholesale Price Index (WPI) had fallen to 7 per cent by March, and averaged 7 per cent from March to July. It rose to a higher plateau of 8 per cent in August and stood at 8.2 per cent (provisional) on January 29, 1994. With most banks holding excess reserves, the growth of reserve money accelerating in response to heavy recourse to the RBI by the Centre and the strong rise in net foreign assets, 1993-94 saw a substantial build-up of inflationary potential in the economy.

The Advance Estimates of National Income by CSO put growth of GDP (at factor cost) at 3.8 per cent in 1993-94, with agriculture growing at 2.3 per cent, manufacturing at 2.5 per cent and the growth of utilities and other service sectors ranging from 3.8 to 8.1 per cent. While the estimate of overall economic growth was more than three times higher than the growth in 1991-92, it was below the 5.6 per cent rate projected in the Eighth Five Year Plan. At the macro-economic level, the challenge for policy is to stimulate higher growth, while acting firmly to dampen the build-up of inflationary potential in the economy.

The annual rate of growth of money supply (M3) has been less than 14.2 per cent for most fortnights of 1993-94, but has shown signs of moving up. Reserve money growth showed a similar pattern at 20.1 per cent and was nearly three times the rate of 7.0 per cent a year ago. Increase in net RBI credit to the Central Government and the rapid accumulation of net foreign exchange assets by the RBI were the main sources of this growth. Net bank credit to Government was growing at an annual rate of 17 per cent. Bank credit to the commercial sector has grown by 6 per cent during the financial year 1993-94.

A number of policy changes were introduced to impart greater flexibility to monetary operations. Interest rate on deposits and loans were reduced in line with falling inflation: the minimum lending rate for bank loans above Rs.2 lakh was reduced by three percentage points to 15 per cent during 1993. The Cash Reserve Ratio (CRR) was reduced in two phases and brought down to 14 per cent. The Statutory Liquidity Ratio (SLR) was reduced to 34.75 per cent effective October, 1993, from 37.75 per cent at the beginning of the financial year. The incremental SLR on any increase in net demand and time liabilities was brought down to 25 per cent. At the same time, the Government has increasingly met its borrowing requirements through auctioning of dated Government securities and Treasury Bills.

The year saw a remarkable recovery in the balance of payments position. Foreign currency reserves with the RBI stood at \$ 10.9 billion on February 4, 1994. The year could end with reserves close to \$12 billion. This represented nearly 6 months of import cover - as compared to 2 weeks of cover in May, 1991.

A noteworthy feature of this year's balance of payments situation was the positive response of foreign investors and portfolio managers to the policy reforms. Thus, one of the worst economic crises in decades was successfully met by a combination of macro-adjustment measures and policy reforms. Far-reaching policy reforms have been introduced with a view to transforming the structure and competitiveness of the economy and setting it on a path of fast labour intensive growth.

#### **4.4. MONETARY POLICY 1994-95**

The year 1994-95 saw the fastest growth of the Indian economy in the last four years. After the crisis induced low growth of 0.9 per cent in 1991-92, the economy had already responded smartly to wide-ranging reform measures to record growth of 4.3 per cent in each of the years 1992-93 and 1993-94. This year has seen an acceleration of growth to 5.3 per cent led by strong, broad-based industrial growth of around 8 per cent and supported by a robust agricultural performance. The performance of the external sector continued to be strong with exports growing by more than 17 per cent in dollar terms in the first ten months of the year, the balance on invisibles climbing to over a billion dollars in the first six months of the year and foreign investment (direct plus portfolio) of \$3.9 billion in April-December, 1994. Foreign currency reserves have also risen by over \$4.5 billion.

Food-grain production was 185 million tonnes in 1994-95. Public stocks of food grains with the Central Pool stood at 30 million tonnes, as of January 1, 1995, compared to 13.9 million tonnes three years earlier. Where as the increase in total economy-wide employment was estimated to have been only about 3 million in 1991-92, an expansion of about 6 million was estimated for each of the years 1992-93 and 1993-94.

Compared to other countries coping with crisis and adjustment, the restoration of macroeconomic stability and revival of growth in output and employment in India has been exceptionally smooth. But these undeniable achievements are not free from threat. In an increasingly open and competitive international environment, perceptions of weakness in macroeconomic policy or economic reforms could easily affect adversely the flow of foreign savings.

The total domestic savings rate has increased only marginally by 0.2 per cent of GDP to 20.2 per cent in 1993-94. The fiscal deficit in 1993-94 was much larger than budgeted, but its monetary impact was contained through sizeable open market sales of Government securities by the Reserve Bank of India. Nevertheless, monetary growth accelerated to 18.2 per cent in 1993-94 from 15.7 per cent in the previous year. This, together with the continuing substantial increase in procurement and issue prices of

food grains, other administered price changes and production shortfalls in key commodities like cotton and sugar, led to a significant increase in the annual rate of inflation in 1993-94. These forces spilled in to the first quarter of 1994-95 and took the annual rate of increase in the Wholesale Price Index to 12 per cent before subsiding to a range of 8 to 10 per cent in the middle two quarters of the year and then rising again to double digits in the final quarter.

The management of monetary and other effects of a sudden rise in foreign capital inflows proved as an important challenge for macroeconomic policy making in 1994-95. To contain the monetary consequences of a rapid rise in foreign exchange reserves in the latter half of 1993-94, a phenomenon which persisted through the first half of 1994-95, a number of counter measures were taken. These included an increase in the general Cash Reserve Ratio (CRR) applicable to commercial banks in May 1994, a reduction in the maximum interest allowable on deposits, the tightening up of guidelines for Euro issues and continuation of open market sales of Government securities by the Reserve Bank of India to mop up excess liquidity. By November 1994, the effects of these measures were apparent in the slowing growth of money supply.

Monetary trends observed in the second half of 1993-94, have continued through most of the next year. The rate of growth of money supply, M3 (currency plus all bank deposits), displayed a gradual but sustained uptrend till November 1994. There was an even stronger acceleration in the annual rate of growth of narrow money, M, (currency plus demand deposits of banks). The annual growth rate of M3, which peaked at 22 per cent in November 1994, has subsequently declined to 18.6 per cent as of January 20, 1995. The reason for the uptrend in monetary growth through most of 1994-95 was a sharp rise in the growth of reserve money, which followed a similar pattern to that of money supply.

Reserve money is the sum of many variables such as RBI credit to government, RBI credit to banks and the commercial sector, and RBI's net foreign exchange assets. The growth rate of two of its important sources has moved in opposite directions. RBI credit to government has shown a decline in growth, while growth of RBI's net foreign exchange assets has accelerated. The net result has been acceleration in the annual rate

of growth of reserve money since the middle of 1993-94. Reserve money growth peaked in February 1994, and, after fluctuating at fairly high levels, it has declined to an annual rate of 21.2 per cent on January 20, 1995. Annual growth of net foreign exchange assets of RBI similarly peaked in March 1994, and was 93 per cent by January 20, 1995. The large accretion of net foreign exchange assets, which has propelled the growth of reserve money, is a reflection of the strong build-up of foreign exchange reserves, arising from improvements in the current and capital accounts of the balance of payments.

What is more remarkable about the growth of reserve money in 1994-95 compared to 1993-94, is the dramatic fall in the contribution of the monetized deficit of the Central Government. Accumulation of net foreign exchange assets by RBI up to January 20, 1995 constituted 88.7 per cent of the total increase in reserve money during the year. Net RBI credit to government made a negative contribution (- 20.2 per cent) to the growth of reserve money in 1994-95, because of a decline of Rs.3983 crore. In the corresponding period of 1993-94, the increase in net RBI credit to government constituted 36.4 per cent of the increase in reserve money, while increase in net RBI foreign exchange assets constituted 65.6 per cent of the increase. This very different pattern of reserve money growth has been made possible by the behavior of the Central budget deficit (total expenditures minus total receipts - both revenue and capital) which has been negative for almost six consecutive months of 1994-95 from July 29, 1994 to January 20, 1995. A decline in net RBI credit to Government has been accompanied by a reduction in the growth of "Other banks' credit to Government" from 27.1 per cent in 1993-94 (till January 21, 1994) to 15 per cent in 1994-95 (till January 20, 1995). The slowing down of the growth of Government borrowing was due to a reduction in the fiscal deficit in 1994-95 from the previous year.

Bank credit to the commercial sector has been much more buoyant in the current financial year. By January 20, 1995, it had grown by 13.6 per cent, which is more than double the growth of 6.3 per cent in the comparable period of 1993-94.

Two major initiatives were taken to improve the working of the monetary system. One was to initiate a process which will break the link between the Central

Government fiscal deficit and reserve money growth. A historic agreement was signed in September 1994 between RBI and the Ministry of Finance to phase out by end 1996-97, Central Government borrowing from RBI through Ad hoc Treasury Bills. The agreement also specified the budget estimate of Rs.6000 crore as ceiling for the year 1994-95. Further, such borrowing will not be allowed to exceed Rs.9000 crore for more than ten consecutive working days during the year. Traditionally, an increase in the fiscal deficit above the availability of conventional sources of borrowing automatically resulted in an increase in the budget deficit and RBI credit to Government. This in turn increased reserve money and led to higher monetary growth. The agreement between the Reserve Bank and the Central Government will sever this direct link between the fiscal deficit and monetary growth, and to that extent make monetary policy independent of the Central budget.

Second, a key psychological barrier to a flexible and market responsive financial system was also crossed in 1994-95, with the abolition of the minimum lending rate on bank loans above Rs.2 lakh. Each bank will now have to set its own prime rate on which the structure of loan rates will rest. This, along with the entry of six new private banks during the financial year, is expected to spur competition and cost consciousness in the banking sector. The cooperative banking sector saw similar changes, with complete decontrol of deposit rates and deregulation of lending rates subject to a minimum lending rate of 12 per cent.

During the year (up to February 4, 1995) the general price level rose by 9.6 per cent compared to 9.1 per cent in the same period last year. The annual growth rate for 1995, was however, closer to 11 per cent. Aggregate inflation has therefore followed a pattern broadly similar to that of monetary variables since the middle of 1993-94. Throughout the second half of 1993-94, inflation was on a rising trend, which continued in 1994-95 to reach a peak of 12 per cent. Primary articles continue to contribute disproportionately to the total inflation, with an increase in their contribution from 35 per cent in 1993-94.

High growth of monetary aggregates was one of the more important factors in the high level of inflation in 1994-95. A number of measures were therefore taken to



control money growth. The cash reserve ratio (CRR) was raised from 14 per cent to 15 per cent to moderate monetary growth. The agreement to limit access of the Central Government to RBI borrowing through Ad hoc Treasury Bills limits monetization of the fiscal deficit. Cash reserve ratios were also imposed on the Foreign Currency Non Resident (Banks) Accounts scheme and on the Non-Resident Non-Repatriable Rupee Deposit (NRNRRD) scheme 15 and 7.5 per cent respectively. The RBI also undertook open market sales of Government securities to mop up excess liquidity.

On the supply side a number of measures were taken since March 1994, to moderate prices of primary articles. The balance of payments position has shown steady improvement since 1991-92 with exports covering a larger proportion of imports than in the earlier years. The export-import ratio has averaged nearly 90 per cent during 1991-92 to 1993-94, compared to an average of about 65 per cent for the preceding three years. The current account deficit has also declined, averaging about 0.7 per cent of GDP for these three years, compared to an average of about 2.6 per cent of GDP in the preceding three years. Even though the export-import ratio for 1994-95 was expected to decline from the high of 94.6 per cent in 1993-94, and the current account deficit rise from the low of 1993-94, the four year average was unlikely to be much different from the three year average.

The improvement in India's balance of payments during 1993-94 which resulted in an unprecedented build up of foreign currency reserves, continued in 1994-95. These assets rose further from \$15.1 billion at the end of March 1994 to \$19.8 billion by October 1 1994, and have since stabilized at around this level.

The reserve build-up, as the net result of all external transactions, reflects the effect of improvements on the current and capital accounts. Sustained growth of exports and direct foreign investment are the keys to sustained viability of the balance of payments.

#### **4.5. MONETARY POLICY 1995-96**

The major highlights of the economic developments during 1995-96 were the continued high real GDP growth of 7.1 per cent and the decline in the inflation rate to a

single digit level. Monetary expansion (M3) was substantially lower at 13.2 per cent. There was a deceleration in growth rate of aggregate deposits and bank credit of scheduled commercial banks to 12.1 per cent and 20.1 per cent respectively. The decline in the inflation rate to 5.0 per cent on a point-to-point basis, during the year was sharp, particularly so in the context of the double digit inflation recorded in the previous two years. The external sector developments were marked by robust export performance for the third year in succession with a growth rate of 20.9 per cent while the growth in imports, on BOP basis, was also higher at 30.1 per cent. The foreign currency assets of the Reserve Bank as at end-March 1996 stood at a little over US\$17 billion, equivalent to about five months of imports.

#### **4.6. MONETARY POLICY 1996-97**

As regards the economic developments during the fiscal year 1996-97, the production of food grains was higher at 191.2 million tones during 1996-97. Industrial production during the first half of this financial year (April- September 1996) registered a lower growth of 9.8 per cent. The budget deficit and monetized deficit have remained high at Rs.13, 755 crore and at Rs.6, 020 crore respectively as on January 24, 1997. The monetary expansion M3 has been higher during the financial year at 10.6 per cent. During the current financial year aggregate deposits of scheduled commercial banks increased substantially by Rs.41, 726 crore or 9.6 per cent while bank credit expanded by Rs.11, 511 crore. The inflation rate was placed at 7.0 per cent, on a point-to-point basis, since the beginning of the financial year. The external sector developments have been characterized by low export growth and exports in dollar terms rose by only 6.4 per cent during the first nine months of this financial year (April-December 1996) while import growth slackened to 4.4 per cent. Balance of payments developments during 1996-97, continued to reflect signs of sustainability in the external sector. India's foreign exchange reserves stood at US\$ 23,973 million as on January 31, 1997. The exchange rate of the rupee remained broadly stable during the year moving within the range of Rs.34.14 per U.S. dollar and Rs.35.94 per U.S. dollar. Fairly good rainfall in most regions of the country has brightened the prospects of a much higher level of agricultural production this year.

With regard to industrial production, while manufacturing sector and capital goods segment in particular have recorded an impressive performance, there is a slow down in terms of overall growth. These factors pointed to the feasibility of the real GDP growth during 1996-97 to be around 6.8 per cent as forecasted by the CSO. The external payments situation remained under control. The foreign currency assets of the RBI remained comfortable at around US\$ 19.8 billion this year. Economic developments during 1996-97 have, however, raised certain concerns. These relate to industrial growth, interest rates and export growth. For economic growth to be sustained at a rate of 7.0 per cent there is an imperative need to raise further the saving rate even though the national income data showed a pick up in the saving rate. A better alignment between desired investment rate and domestic saving rate as well as maintenance of inflation rate at a reasonably low level helps to bring down the interest rate in a sustained way.

#### **4.7. MONETARY POLICY 1997-98**

In 1997-98, the Indian economy performed remarkably well in terms of output growth, price stability, banking sector performance, and the balance of payments position. The real GDP growth, at the estimated 5.1 per cent in 1997-98, though lower than 7.5 per cent registered in 1996-97 was still impressive by the standards of performance of most other Asian economies.

The broad money (M3) expansion was placed higher at 17.6 per cent during 1997-98 as compared with 15.9 per cent in 1996-97. Bank deposit has increased by 19.4 per cent as compared to 17.4 per cent in the previous year. Growth in time deposits, facilitated by interest rate deregulation in respect of short-term time deposits was an important feature of 1997-98. The high rate of increase in M3 during 1997-98 was a result of increases in both domestic credit and net foreign exchange assets of the banking sector. Bank credit to commercial sector increased by 14.9 per cent as compared with 9.2 per cent in the previous year. The increase in net bank credit to Government was also higher at 14.6 per cent as against 12.0 per cent in the previous year. Net foreign exchange assets of the banking sector have expanded by 20.0 per cent on top of an increase of 28.4 per cent in the previous year. Reserve money growth at

Rs.26, 248 crore (13.1 per cent) was substantially higher than that of Rs.5, 528 crore (2.8 per cent) in 1996-97.

Banking developments during 1997-98 were characterized by a sharp accretion to deposits, especially of time deposits for the second year in succession, and a pick-up in credit expansion. The growth in scheduled commercial banks credit was substantially higher at 16.4 per cent as compared with 9.6 per cent in 1996-97. Food credit as well as non-food credit increased substantially than that in the previous year. The total flow of resources to the commercial sector from the commercial banks, both in terms of bank credit and investments in commercial papers, debentures, bonds and shares of companies, was higher at Rs.54,442 crore during 1997-98 as compared with Rs.30,951 crore in the previous year.

The price situation achieved a distinct moderation during 1997-98, notwithstanding a relatively high order of monetary expansion and an increase in the administered prices of certain petroleum products. The annual inflation rate, measured in terms of variation in the Wholesale Price Index (WPI), on a point-to-point basis, declined to 5.3 per cent from 6.9 per cent in 1996-97. On an average basis, the inflation rate was lower at 4.8 per cent than that of 6.4 per cent in the preceding year and a double-digit rate during 1990-91 to 1995-96. The variation in consumer price index for industrial worker (CPI-IW) was also lower than in 1996-97 on both point-to-point and average basis. However, the rate of increase in CPI-IW in 1997-98 was higher than that in WPI during the year under review.

Notwithstanding the deterioration on trade account, the external sector position of the economy remained strong. It was also able to withstand the external uncertainties and foreign exchange market pressures attributable to South-East Asian financial crisis. The balance of payments recorded an overall surplus of US \$ 4,511 million (1.2 per cent of GDP) in 1997-98 and foreign exchange reserves during 1997-98 increased by US \$ 2, 9445 million to US \$29,367 million at end-March 1998, equivalent to seven months of imports from US \$ 26,423 million at the end of March 1997. The foreign exchange reserve level of seven months of imports and current account deficit to GDP

ratio of 1.7 per cent in 1997-98 provided the needed international confidence in the Indian economy, and strengthened the macroeconomic environment.

#### **4.8. MONETARY POLICY 1998-99**

There was a sharp upturn in GDP growth in 1998-99, which reversed the deceleration in growth seen in 1997-98. GDP (at factor cost) growth accelerated to 6.8 per cent in 1998-99 from 5 per cent in 1997-98. The primary supply side factor for the recovery was agriculture. GDP from the agriculture and allied sectors, which had fallen by 1.9 per cent in 1997-98 recovered dramatically to grow by 7.2 per cent in 1998-99. As in the previous year GDP from "public administration & defense" contributed 0.7 per cent point to the overall GDP growth rate in 1998-99. This was primarily because of the wage increase for government employees' consequent to the Fifth Central Pay Commission's recommendations. The wage increase was largely implemented by the Central Government in 1997-98 and by the State Governments in 1998-99.

On the demand side, private consumption recovered in 1998-99 from its slump in 1997-98, with real consumption growth doubling from 2.6 per cent in 1997-98 to 5.1 per cent in 1998-99. Recovery in agricultural income clearly contributed to this growth as indicated by the lower saving rate in terms of household saving in physical assets. Perhaps the windfall income of government servants, which was initially saved also, started getting spent.

Total investment (at 1993-94 prices) declined by about half a per cent in 1998-99 after increasing by over 13 per cent the year before. This deceleration in investment was linked to the deceleration in manufacturing and the slump in agriculture in 1997-98.

Gross domestic saving declined sharply in 1998-99 to 22.3 per cent of GDP. The 2.4 per cent points of GDP decline in the saving rate resulted from a 1.4 per cent point decline in public saving and a 1 per cent point decline in household saving in physical form (*i.e.* direct investment).

An analysis of the yield curve movement in the Government securities market during 1998-99 showed that while the short-term rates respond quickly and

pronouncedly to the changes in monetary policy rates, long-term rates exhibit somewhat sticky behaviour.

The restoration of stability in the Indian currency market was primarily the result of a credible stance to arrest volatility caused by speculation and keep rupee stable and the gradual moderation of pressures in the East Asian currency markets in end-January 1998. As the rupee adjusted downwards smoothly, the Reserve Bank eased some of the monetary measures clamped earlier in the face of volatility. The Bank Rate was reduced by 50 basis points each time effective March 19 and April 3, 1998, respectively, and further by 100 basis points to 9.0 per cent effective April 29, 1998. The fixed rate for repo auctions was reduced to 8.0 per cent effective March 18, 1998 and thereafter gradually to 5.0 per cent effective June 15, 1998. The CRR was scaled down by 25 basis points each in two phases effective March 28 and April 11, 1998, respectively. Export credit refinance limits were restored in April 1998. Reflecting the return of easy liquidity conditions, the interest rate structure also softened, with average call rates easing to 6.85 per cent and five-year bond yields softening to 11.06 per cent in April 1998. A majority of banks reduced their lending and deposit rates in response to the Bank Rate cut as also in line with seasonal trends.

The foreign exchange market saw the return of excess demand conditions in mid-May 1998, in reaction to the impending sanctions, resulting in the exchange rate weakening from Rs.39.73 per US dollar at the beginning of May to Rs.42.38 by June 11, 1998. The Reserve Bank sold foreign currency in response to excess demand in the foreign exchange market, depleting its NFA by Rs.6,597 crore (adjusted for revaluation). Net merchant forward sales jumped to US \$ 5,498 million, resulting in a sharp increase in the one-month forward premium to 9.59 per cent in June 1998 from 3.67 per cent in April 1998.

The Reserve Bank announced a package of policy measures on June 11, 1998 to contain volatility in the foreign exchange market. Stability returned briefly but pressures renewed by the end of the month. The rupee touched Rs.42.92 per US dollar on June 23, 1998 but firmed up at end- June 1998 to Rs.42.47 per US dollar as stability

was restored with the sentiment improving in response to the Reserve Bank's policy response and favorable political developments.

The foreign exchange market again came under pressure in August 1998, reflecting the adverse sentiment on account of the deepening of financial crisis in Russia, resulting in a depreciation of the rupee to Rs.43.42 on August 19, 1998. The Reserve Bank announced a second package of measures in order to prevent speculative pressures on the foreign exchange market, which, included: (i) a hike in the CRR from 10.0 per cent to 11.0 per cent, (ii) increase in repo rate from 5.0 per cent to 8.0 per cent, and (iii) withdrawal of the facility of rebooking of the cancelled contracts for imports. A significant contribution towards maintaining orderly exchange market conditions in this phase was made by the mobilization of US \$ 4.2 billion through Resurgent India Bonds (RIBs) that helped in an accretion of US \$ 3.7 billion to the foreign exchange reserves. As a result, the rupee was strengthened.

Liquidity conditions tightened with the return of excess demand conditions in the foreign exchange market during May-June 1998, but eased after the Reserve Bank announced its intention to limit the impact of the large Government borrowing programme by accepting private placements of Government securities. The Reserve Bank continued to strategically subscribe to fresh Government securities (Rs.20, 000 crore at face value) and later offloaded them through open market sales (Rs.11, 437 crore, of which Rs.6, 726 crore to commercial banks) in the last quarter of the year to modulate liquidity conditions. The measures announced on August 21, 1998, however, pushed up the call rates to above 8.0 per cent (the repo rate) during the year.

The external debt to GDP ratio has been declining continuously from a high of 41 per cent in 1991-92 to 23.5 per cent in 1998-99.

Domestic market integration is an important aspect of overall financial integration. To a large extent, domestic financial integration can be gauged by the integration of the term structure of interest rates. The application of term structure in the conduct of monetary policy in India is, however, constrained by the absence of a well defined yield curve. An assessment of the transmission link from the policy interest rates to other interest rates in the financial system is critical for the effective

conduct of monetary policy in a market economy. While studying the dynamics of monetary policy shocks and their impact on the financial markets in India, Joshi and Bhattacharya found evidence supporting integration of the financial markets. Their results showed that the Bank Rate has emerged as a more effective instrument of policy in terms of its impact on the financial markets in relation to other instruments, such as, the CRR or the balance sheet operations of the Reserve Bank involving changes in reserve money.

#### **4.9. MONETARY POLICY 1999-2000**

Financial year 1999-2000 was characterized by low inflation and a comfortable supply position of most items of daily consumption. The downtrend in the annual rate of inflation, which began in the middle of 1998-99 continued in 1999-2000. Inflation touched a record eighteen-year low of 2.0 per cent at the end of July 1999. The annual inflation (point to point) for the week ending January 29, 2000 is 2.9 per cent, while the 52 week average rate for this period was 3.3 per cent.

The Wholesale Price Index (WPI) of all commodities increased by 3.3 per cent during the first 44 weeks of the financial year. The WPI of the fuel group however has increased sharply by 12.2 per cent. This was largely due to the 40 per cent hike in diesel prices announced by the Government on October 6, 1999 necessitated by near doubling of international prices of crude oil during 1998.

Retail prices as reflected in the most commonly used CPI (IW) registered the lowest ever inflation rate recorded so far under the current CPI (IW) series with base 1982. In fact, the index did not register any movement for the month of November 1999 over the corresponding month last year, probably one of the rare times in history of CPI (IW) series. In December, it was still at a low of 0.5 per cent.

The inflation rate dropped to international levels of 2 to 3 per cent for the first time in decades. The balance of payments survived the twin shocks of the East-Asian crisis and the post-Pokhran sanctions with a low current account deficit and sufficient capital inflows. This was demonstrated by the continuing rise in foreign exchange



reserves by over US \$ 2.4 billion during the year until the end of January 2000 coupled with a relatively stable exchange rate.

Inflation dropped dramatically in 1999, surprising many observers by remaining at low levels. As of January 29, 2000, the annual inflation as measured by the WPI was 2.9 per cent (point to point), down from a peak 8.8 per cent on September 25, 1998. The inflation rate has been less than 4 per cent since April 1999, with the result that the average (52 week) inflation was 3.3 per cent (provisional) as on January 29, 2000. The decline in inflation as measured by the CPI for industrial workers has been even more dramatic, falling to zero in November 1999 from a peak of 19.7 per cent in November 1998. The strong agricultural growth in 1998-99, the increasing openness of the economy to manufactured imports along with the fall in international prices has contributed greatly to this decline.

Broad money (M3) growth was 16.6 per cent (annual point to point) on January 14, 2000. Growth of M3 during the financial year till January 14, 2000 at 12 per cent was lower than the 13.7 per cent in the corresponding period of last year. Reserve money growth during this period was negative as against an increase of 10.7 per cent in the corresponding period of the previous financial year. The negative growth of reserve money was due to the much lower growth in net RBI credit to Government, which grew by only 1.3 per cent till January 14, 2000 compared to 13.4 per cent in the corresponding period of 1998-99. The decline in RBI credit to the commercial sector and slower growth in net foreign exchange assets also contributed to negative growth in reserve money. The higher money multiplier reflected the impact of cash reserve ratio (CRR) reduction to 10 per cent in May 1999 and to 9 per cent in November 1999.

The growth in non-food credit has picked up in the second quarter in response to increase in demand for credit arising from acceleration in industrial growth. During the financial year up to January 14, 2000, non-food credit had grown by 10.6 per cent, as against 7.2 per cent in the corresponding period of the previous year. Inclusive of investment, the flow of funds from banks during this period has increased by 11.6 per cent as against 10.0 per cent in the corresponding period of last year. Net bank credit to

Government increased by only 14.1 per cent till January 14, 2000 in contrast to 15.9 per cent in the corresponding period of the previous year.

The East Asian crisis, which loomed as a large black cloud over the world at the beginning of 1999, seemed to disappear as quickly and unexpectedly as it had arrived. This recovery contributed to the recovery of world output and trade volumes in 1999. Output growth accelerated from 1.9 per cent in 1998 to 2.6 per cent in 1999, while world trade volume growth accelerated from 4.2 per cent in 1998 to 5 per cent in 1999. All these are however projected to show a BOP growth of 2.5 to 2.8 per cent in 2000.

The Foreign currency assets of the RBI increased by US \$3.5 billion in 1998-99 and further by about US \$2.4 billion in 1999-2000 (till end January 2000) to US \$31.94 billion. The value of RBI gold holding had declined to \$2945 million by end January 2000 because of redemption under the Gold Bond Scheme and valuation changes. Total foreign exchange reserves (including gold and SDRs) at the end of January 2000 amounted to US\$ 34.90 billion, which provides cover for about 8 months of estimated imports in 1999-2000.

The external debt to GDP ratio, at the end September 1999, was lower at 22.3 per cent. The absolute value of external debt rose marginally to \$ 98.87 billion in September 1999.

#### **4.10. MONETARY POLICY 2000-01**

According to the estimates of National income for 2000-01 provided by the Central Statistical Organization on January 31, 2002, the overall GDP growth rate decelerated significantly from 6.1 per cent in 1999-2000 to 4 per cent in 2000-01. The gross value added in agriculture and allied sectors declined by 0.2 per cent in 2000-01 compared with an increase of 1.3 per cent in 1999-2000

The saving and investment rates in India were high as judged by the country's level of economic development. Gross domestic savings improved marginally from 23.2 per cent of GDP in 1999-2000 to 23.4 per cent of GDP in 2000-2001 as a result of better performance by household savings and private corporate savings. However, there was a steep fall in public sector savings due to an increase in the spending of

government administrative departments. In fact, public sector savings were negative in 1998-99, 1999-2000 and 2000-01. As a percentage of GDP, public sector savings declined from (-) 0.9 per cent in 1999-2000 to (-) 1.7 per cent in 2000-01

Gross domestic investment at current prices declined marginally from 24.3 per cent of GDP in 1999-2000 to 24 per cent of GDP in 2000-01 mainly due to a fall in private sector investment. The rate of gross capital formation in real terms also declined from 26.7 per cent of GDP in 1999-2000 to 26.3 per cent of GDP in 2000-01 due to deceleration in the growth rates of real gross domestic capital formation in both public and private sectors. While the real gross fixed capital formation by the public sector increased by 10.9 per cent in 2000-01, that by the private sector increased by only 2.4 per cent in the same year.

As in earlier years, the rates of domestic investment were higher than the rates of domestic savings in both 1999-2000 and 2000-01. The investment-savings gap was financed by the positive net capital inflow from abroad, which amounted to 1.1 per cent and 0.6 per cent of GDP respectively in 1999-2000 and 2000-01.

Real GDP growth rate in 2000-01 is estimated at 6 per cent compared with a growth rate of 6.4 per cent achieved in 1999-2000 and 6.6 per cent in 1998-99. Despite deceleration of growth rate for the second consecutive year, India has the distinction of being one of the fastest growing economies in the world. The Indian economy has shown remarkable resilience in the face of substantial increase in the international price of crude oil over the last two years.

The reduction of overall growth rate of GDP to 6 per cent in 2000-01 is mainly due to a decline in the growth rate of service sector from 9.6 per cent in 1999-2000 to 8.3 per cent in the current year.

During 2000-01, the annual rate of inflation in terms of WPI has shown an increasing trend due to pressure from energy prices. The inflation rate, as on January 27, 2001, was around 8.2 per cent on point to point basis (compared with 3.6 per cent on the corresponding date of the previous year) and 6.6 per cent on the basis of 52 weeks average (compared with 3.4 per cent on the corresponding date of the previous

year). This increase in inflation was caused mainly by the fuel, power, light and lubricants group, whose point to point annual inflation as on January 27, 2001 was 29.6 per cent compared to 16.2 per cent in the corresponding period of the previous year. During the financial year the cumulative inflation rate was 4.8 per cent as on January 27, 2001 compared with 3 per cent during the corresponding period of 1999-2000. Given the trend, the year-end average rate of inflation in terms of WPI expectation was around 6.5-7.0 per cent.

Inflation rate in terms of the Consumer Price Index for Industrial Workers (CPI) decelerated continuously during the year to reach a low of 2.7 per cent in November 2000 as against zero per cent in November 1999. The index rose moderately by 3.5 per cent in December 2000. According to the twelve months average basis the inflation works out to 4 per cent for the year 2000 compared with 4.7 per cent for the year 1999.

According to the official BOP statistics, compiled by the RBI for 2000-01, trade deficit increased from US\$ 7.6 billion in April-September 1999 to US\$ 9.2 billion in April-September 2000. Consequently, foreign exchange reserve has declined by US \$ 1.5 billion during April-September 2000.

During the first half of 2000-2001, foreign currency reserves showed declining trend due to excess demand for foreign currency caused by the huge import bill on oil. As per quarterly BOP estimates, foreign exchange reserves declined by US \$1460 million in April-September 2000 compared with an increase of US \$ 821 million in April-September 1999. Subsequently, the issues of India Millennium Deposits by SBI helped to raise foreign currency assets amounting to US \$ 5.51 billion, which were added to RBI's foreign currency reserves in November 2000. Total foreign exchange reserves (including gold and SDRs) at the end of January 2001 amounted to over US \$ 41 billion, providing cover for 8 months of projected imports in 2000-01.

The sharp reduction in current account deficit and the funds raised under the IMD Scheme resulted in large accumulation of official foreign exchange reserves for the fifth year in succession during 2000-01. On BOP basis, the reserves increased by a substantial US \$5.83 billion. This was on top of an increase of US \$6.14 billion in

1999-2000 and an increase of US \$4.51 billion per year, on an average, during the previous three years, i.e.1996-97 to 1998-99.

The year-on-year growth of broad money supply (M3) was 15.8 per cent as on January 12, 2001 as against 16.7 per cent as on January 14, 2000. This reflected expansion in monetary base through the India Millennium Deposits in November 2000. Driven by the increase in the net foreign exchange assets of the RBI, reserve money increased by 5.1 per cent till January 12 in current financial year compared with negligible growth in the corresponding period of the previous year. The year-on-year growth in deposits of scheduled commercial banks (SCBs) as on January 12, 2001 at 17.9 per cent was above the RBI's projected growth rate of 15.5 per cent. However, this reflected the inclusion of Rs. 25,662 crore from the India Millennium Deposits (IMD) Scheme in time deposits of banks, which grew at 15.7 per cent till January 12 in the current financial year compared to 13 per cent in the corresponding period of the previous year. Currency with the public expanded at a lower pace of 10.0 per cent till January 12, 2001 as against 14.9 per cent in the corresponding period of 1999-2000.

An important measure designed to further enhance the efficiency of the money market taken in June this year was related to the transition to a full-fledged Liquidity Adjustment Facility (LAF) involving injection and absorption of liquidity via variable rate reverse repo auctions and variable rate repo auctions respectively. Regulatory powers have been given to RBI under amendment to the Securities Contracts (Regulation) Act, 1956 to regulate dealings in Government and money market securities. The measures for further deepening and widening the Government securities market included permission to entities, who have been allotted securities in primary auctions, to sell them on the allotment date itself, and permission to all entities having SGL and current account with RBI Mumbai office to undertake repos in Treasury Bills and Central/State Government dated securities.

The previous decade can be described as the decade of reforms for the Indian economy. While the early years of the decade witnessed the first phase of structural reforms in industrial, financial and external sectors, the final years saw the beginning of the second phase of economic restructuring. The decade of reform was successful in

eliciting supply responses as evidenced in the higher growth of GDP, comfortable foreign exchange reserves, improving short term debt profile, moderate inflation and buoyant exports.

#### **4.11. MONETARY POLICY 2001-02**

The Indian economy was passing through a difficult phase caused by several unfavorable domestic and external developments. Domestic output and demand conditions were adversely affected by poor performance in agriculture in the previous two years. The global economy experienced an overall deceleration and estimated to record an output growth of 2.4 per cent during the past year. These tendencies were exacerbated in the aftermath of the terrorist attacks in United States in September 2001. Consequently, export growth has suffered and industrial profitability has also been affected by the prevailing low commodity and product prices globally. Despite these constraints, growth in real GDP in 2001-02 was expected to be 5.4 per cent as estimated by the Central Statistical Organization. This growth rate marks some recovery over the low growth of 4 per cent in 2000-01.

The average annual growth rate during the Ninth Five Year Plan (1997-2002) was estimated at 5.4 per cent which is lower than the plan target of 6.5 per cent. Although this raised new challenges for reinvigorating growth in the Tenth Five Year Plan, the Indian growth record is one of the highest among the major economies in the world during the years. The Indian economy has been resilient in the face of several external shocks during this period such as the East Asian crisis of 1997-98, the oil price increase of 2000-01, and the most recent world economic slowdown. Domestic shocks in the shape of an adverse security environment, natural disasters like the Orissa cyclone and Gujarat earthquake, and two consecutive years of poor agricultural performance, have also been faced successfully by the economy.

The overall growth of 5.4 per cent in 2001-02 is supported by a growth rate of 5.7 per cent in agriculture and allied sectors, 3.3 per cent in industry and 6.5 per cent in services. The acceleration of the overall GDP growth rate is basically due to a significant improvement in value added in the agriculture and allied sectors from a negative growth rate of (-) 0.2 per cent in 2000-01 to 5.7 per cent in 2001-2002. There

has been significant deceleration in the growth rate of industry. However, the performance of the services sector has improved moderately.

The point to point inflation rate according to the Wholesale Price Index (WPI) for the week ending January 19, 2002 was 1.3 per cent, which was the lowest in the last two decades. The 52-week average inflation rate declined from 7.0 per cent at the beginning of the year to 4.7 per cent for the week ending January 19, 2002.

The price situation remained under control during 2001-02. The impact of the fuel price increases announced first during 1999-2000, and subsequently twice during 2000-01, bottomed out during the year, reducing inflation to below 5 per cent by September 2001. The deceleration in prices continued through the months of October and November 2001. Inflation was recorded at 2.21 per cent at the beginning of December 2001 (the lowest since December 1999) and reduced further to 1.3 at the end of January 2002.

The average annual rate of inflation in terms of the Wholesale Price Index (WPI) increased significantly from 3.3 per cent in 1999-2000 to 7.1 per cent in 2000-01 due to a substantial rise in administered prices of petroleum products. During 2001-02, the inflation rate declined in terms of the WPI. The 52 week average inflation rate declined from 7 per cent at the beginning of 2001-02 to 4.7 per cent for the week ended January 19, 2002. The point-to-point inflation rate reached a low of 1.3 per cent by the end of January, 2002 which was the lowest in over two decades.

The inflation rate in terms of the Consumer Price Index for Industrial Workers (CPI-IW) remained below 4 per cent until July 2001 and increased to 5.2 per cent in August 2001. The Index displayed a downward trend during September-October, 2001. However, it increased again to 4.9 per cent in November and further to 5.2 per cent in December 2001.

The year-on-year growth in broad money (M3) as on January 11, 2002 was 14.4 per cent compared with 16.6 per cent a year ago. The sharp decline in money supply since November 16, 2001 reflects the sudden expansion in volume of broad money resulting from India Millennium Deposits with effect from the corresponding date in

the previous year. Among the various components of money supply, only currency with the public registered a higher rate of growth in the year (till January 11, 2002) compared to the corresponding period of the previous year. As far as sources of broad money are concerned, growth in bank's investment in Government securities and the expansion in net foreign exchange assets of RBI contributed significantly to the broad money growth in this year. This financial year witnessed a deceleration in the growth of net domestic assets of RBI as compared to the corresponding previous period. This was partly offset by the announced acceleration in the growth of net foreign exchange assets of RBI. Reserve money registered a growth of 2.6 per cent during the financial year (till January 11, 2002) as compared with 5 per cent during the corresponding previous period.

Bank credit, comprising food credit and non-food credit, increased at a lower rate of 10.6 per cent in 2001-02 compared to 14.3 per cent in the previous year. Recent years have witnessed strong growth of food credit in response to the increase in the quantum as well as price of food grains procured in support of the twin objectives of food security and price support. The deceleration in the growth of non-food credit to 8.7 per cent from 12.1 per cent during the previous year mirrored the weak demand for commercial credit owing to economic slowdown, which has been aggravated by the global downturn in economic activity.

India's balance of payments remained reasonably comfortable in both 2000-01 and 2001-02. The current account deficit as a percentage of GDP declined from 1.1 per cent in 1999-2000 to about 0.5 per cent in 2000-01 due to a dynamic export performance and sustained buoyancy in invisible receipts. However, in the year 2001-02, exports have been almost stagnant and have recorded a growth of only 0.6 per cent. An assessment of the Balance of Payments (BOP) outlook conducted jointly by the Reserve Bank of India (RBI) and the Ministry of Finance for the year indicated it as quite manageable.

The exchange rate of the rupee in terms of the major currencies of the world remained reasonably stable during the year, despite occasional fluctuations caused by normal market forces of supply and demand. Foreign exchange reserves (including gold



and SDR) reached a record level of nearly US\$50 billion at the end of January 2002, which is equivalent to almost 10 months of estimated imports for the current year.

#### **4.12. MONETARY POLICY 2002-03**

This is the first year of the Tenth Five Year Plan (2002-07), which envisaged an average annual growth rate of 8 per cent. In this year, notwithstanding the deficient monsoon, there were no shortages in availability of essential commodities, or flare-ups in their prices. The 52-week average inflation rate based on the Wholesale Price Index (WPI) was only 2.6 per cent in mid January 2003. Prices of primary products remained below 4 per cent for the larger part of the year, while inflation in manufactured products was around 3 per cent.

Inflation, as measured by the Consumer Price Index for industrial workers (CPI-IW) declined from 4.7 per cent at the beginning of 2002-03 to 3.2 per cent in December 2002.

Foreign currency assets at end-March 2002 amounted to US \$51.05 billion, up by US \$11.5 billion over US \$39.5 billion at end-March 2001. Foreign exchange reserves reached a record high of US \$73.58 billion at the end of January 2003, with an increase of US \$19.47 billion over the level of end-March 2002. A Reserve Bank of India (RBI) study showed that this was due to a surplus in the current account, non-debt creating capital flows and valuation gains.

The strengthening of the balance of payments has impacted on the monetary sector, with net foreign exchange assets (NFA) of RBI emerging as an important source of reserve money. NFA had reached 78.1 per cent by the end of 2001-02, became 100.7 per cent on January 24, 2003, which is close to a currency board situation. Similarly, the NFA to currency ratio increased from 105.2 per cent as on March 31, 2002, to 127.7 per cent on January 24, 2003. For liquidity management, the substantial increase in foreign exchange assets was partly neutralized by the decline in RBI's net domestic credit. In this financial year, RBI credit to the government remained negative, and reserve money grew by 2.9 per cent up to January 24, 2003, as compared with 4.7 per cent in the corresponding period of last year. The money multiplier; the ratio of broad

money (M3) to reserve money had increased from 4.3 in the previous year, to 4.8 as on January 10, 2003. In the current financial year up to January 10, 2003, broad money grew at 9.8 per cent as compared with 11.2 per cent in the corresponding period of last year. The year-on-year growth in M3, as on January 10, 2003, amounted to 12.8 per cent compared with 14.5 per cent in last year. In spite of the slower growth of money supply, this year has been characterized by easy liquidity conditions. There were signs of a pick-up in non-food credit and a fall in interest rates, including in the yields on government securities.

Facilitated by relatively lower inflation, interest rates continued to soften during the year. The RBI reduced the bank rate by 25 basis points to 6.25 per cent in October 2002. At this level, the bank rate is the lowest since 1973. The cash reserve ratio (CRR) was reduced by 50 basis points to 5.0 per cent from June 1, 2002, and further to 4.75 per cent from the fortnight beginning November 16, 2002. The PLR of five major commercial banks declined from 11.00-12.00 per cent to 10.75-11.50 per cent in this year. Another noticeable development is the sub-PLR lending by commercial banks. Yields on government securities continued to maintain their downward trend. The yield on 7.4 per cent 12-year government paper reached a low of 6.13 per cent on December 31, 2002. A significant reform in this year was the dismantling of the administered price mechanism for petroleum products from April 1, 2002, exactly as per the schedule announced in 1997.

With a faltering global recovery, private final consumption expenditure has been the major factor sustaining growth in the Indian economy. Private final consumption expenditure, at constant 1993-94 prices, has increased by Rs. 48,275 crore or 5.9 percent in 2001-02. Compared to a rise of only 5.6 per cent in GDP at factor cost at constant prices in 2001-02, gross and net domestic savings at current prices, grew by 11.8 per cent and 13.3 per cent respectively, to increase their share in GDP at market prices. The household sector was once again the best performer, with the increase in its gross savings exceeding the total increase in gross domestic savings. Gross domestic capital formation at constant prices grew at 3.0 per cent in 2001- 02, which was considerably lower than the growth of GDP. Domestic demand, and particularly, private final consumption expenditure, has been fuelling growth in last few years. The

contribution of investment to growth has been following an uneven pattern, with a year of reasonably high contribution followed by a year of low contribution. The same erratic behavior was observed again in 2001-02, when investment accounted for around 21 per cent of the increase in GDP.

As a result of the softening of nominal interest rates, the real PLR of five major commercial banks, based on a 52-week average of the WPI general index, has come down marginally from 9.6 per cent in 1997 to 9.0 per cent by January 2003.

#### **4.13. MONETARY POLICY 2003-04**

The economy appeared in a resilient mode in terms of growth, inflation, and balance of payments, a combination that offers large scope for consolidation of the growth momentum with continued macroeconomic stability. Real Gross Domestic Product (GDP) was estimated to have grown by 8.2 % and it reached at 8.5% in 2003-04. A growth rate higher than 8 per cent has been achieved in the past in only three years: 1967-68 (8.1 per cent), 1975-76 (9.0 per cent) and 1988-89 (10.5 per cent).

The GDP growth rate of 10.4 per cent in the 3rd quarter of 2003-04 was the highest in any quarter since at least 1997-98, when CSO started compiling quarterly estimate. The robust performance of India and the emerging market economies contributed to the good performance of the world economy, this year.

The growth recovery in 2003-04 was accompanied by continued maintenance of relative stability of prices. Inflation, as measured by the wholesale price index (WPI), was 4.6 per cent at end-March 2004 over end-March 2003, and 5.5 per cent on average.

Retail price inflation, as measured by the Consumer Price Index for Industrial Workers (CPI-IW), touched a peak of 5.1 per cent in April 2003 followed by a declining trend and reached 3.5 per cent in March 2004. CPI inflation declined further to 2.2 per cent in April 2004, compared to 5.1 per cent in April 2003, and abundant food grain stocks helped in maintaining stability in food prices.

A strong balance of payments (BOP) position during the area has resulted in a steady accumulation of foreign exchange reserves. After a robust growth of US\$21.3

billion in 2002-03, foreign exchange reserve (including gold, SDRs and Reserve position in IMF), has increased by an unprecedented US\$36.9 billion in 2003-04. The focus of the monetary policy in 2003-04 was, thus, on dealing with this surge in reserves. The RBI had to moderate the impact of these inflows (Rs. 124,169 crore in domestic currency terms) through open market sale of Government securities and repo operations through the Liquidity Adjustment Facility. Moreover, outward foreign investment policies were liberalized and interest spreads over LIBOR on various non-resident deposit schemes were reduced.

Reserve money growth nearly doubled from 9.2 per cent in 2002-03 to 18.3 per cent in 2003-04, driven entirely by the increase in the net foreign exchange assets of the RBI. Reserve money growth in 2003-04 was the highest during the years. Net RBI credit to the government continued to remain negative, owing to the open market sale of government securities to sterilize the foreign inflows. The declining stock of government securities held by the RBI somewhat constrained the scope of these operations. Broad money (M3) grew by 16.4 per cent in 2003-04, higher than the targeted growth of 14.0 per cent mentioned in the annual monetary and credit policy, reflecting, primarily, the higher-than-anticipated GDP growth achieved during the year.

The money multiplier - the ratio of M<sub>3</sub> to reserve money - after increasing from 4.43 in 2001-02 to 4.66 in 2002-03, declined to 4.58 in 2003-04, suggesting some headroom for further expansion in M3. The virtuous decline in income velocity of money, continued in 2003-04. Income velocity declined from 1.62 in 2001-02 to 1.50 in 2002-03 and further to 1.48 in 2003-04.

Adequate liquidity in the banking system continued, and with a resurgence of growth, supported a credit pick up in 2003-04. Total bank credit (food and non-food) increased by 14.6 per cent in 2003-04 after an increase of 16.1 per cent in the previous year. In 2003-04, the total flow of agricultural credit from all lending institutions is estimated at around Rs.80000 crore.

The downward trend in interest rates continued in 2003-04. RBI reduced the Bank Rate from 6.25 per cent to 6.00 per cent from the close of business on April 29, 2003. Also, the cash reserve ratio (CRR) was reduced by 25 basis points to 4.50 per

cent in June, 2003. Lending rates have remained sticky and have not fallen by as much as the deposit rates. As a result, interest spread of commercial banks witnessed an increase during the years. The RBI has advised scheduled commercial banks (SCBs) to announce benchmark prime lending rates based on their actual costs, and this has fortified the soft interest rate regime. A significant development in 2003-04 was the lower than budgeted market borrowings by the Central government, which was facilitated by an improvement in the cash position. During the year 2003-04, SCBs improved their profitability on account of higher income from treasury operations and higher spread.

It is well known that there was a significant decline in the poverty ratio from 36 per cent in 1993-94 to 26.1 per cent in 1999-2000. The Tenth Five Year Plan (2002-07) has set a target of reduction in poverty ratio by five percentage points by 2007 and by 15 percentage points by 2012.

#### **4.14. MONETARY POLICY 2004-05**

The performance of the Indian economy in 2004-05 has exceeded expectations formed at the beginning of the year. Following the 'bumper' growth in 2003-04, initial growth projections for 2004- 05 were placed in the range of 6.2 per cent to 7.4 per cent. According to the advance estimate of the Central Statistical Organization (CSO) released on February 7, 2005, the economy was likely to grow by 6.9 per cent in 2004-05. But the actual growth was 7.5% in this year.

Year-on-year WPI-based inflation was 5 per cent on February 5, 2005. The economy has managed to maintain the growth momentum in spite of a deficient South - west monsoon and hardening international environment. The year 2004-05, after starting with a point-to-point, annual inflation rate of 4.5 per cent on April 3, 2004 witnessed a peak level of inflation at 8.7 per cent on August 28, 2004, the highest in the last four years. However, as a result of the quick monetary and fiscal measures taken by the Reserve Bank of India (RBI) and Government, coupled with a slight easing of global petroleum prices, inflation has been on a declining trend and stood at 5 per cent on February 5, 2005 compared to 6.1 per cent a year ago. The 52-week average inflation rate at 6.4 per cent on February 5, 2005 was, however, higher than the 5.5 per

cent registered in the previous year. A study compared to the international prices showed that a major part of inflation was due to external factors. Year-on-year inflation as measured by the Consumer Price Index (CPI) for industrial workers declined significantly from 5.1 per cent in April 2003 to 2.2 per cent in April 2004. Thereafter, the CPI inflation rate started registering an increasing trend, as WPI inflation pushed up the consumer prices also. Partly in response to policy measures, and the subsequent easing of external pressure of oil imports, CPI declined to 3.8 per cent in December 2004. The CPI inflation, which is considered a more appropriate indicator of general inflation, is also substantially lower than the average WPI inflation at 6.7 per cent in December 2004.

In the second quarter of 2004-05, Government stepped in to keep inflation under check by reducing excise and customs duties on petroleum products and selected items. The RBI hiked the Cash Reserve Ratio (CRR) in two stages, effective from September 18, 2004, and October 2, 2004, respectively, and the reverse-repo rate was hiked effective from October 27, 2004, to check liquidity overhang in the system. These measures coupled with the subsequent fall in international crude prices, helped to rein in inflation.

The current account balance, after being in surplus for the three previous years in succession, has turned into a deficit in the first half of the year 2004-05, i.e. US\$3.2 billion. Improvement in India's external debt position continued in 2003-04. Compared to its stock at the beginning of the year, the growth in reserve money, which had accelerated from 9.2 per cent during 2002-03 to a high of 18.3 per cent during 2003-04, declined to 6.4 per cent in this year up to January 28, 2005. The corresponding growth in reserve money a year ago was 7.8 per cent. The lower growth of reserve money in the current year was on account of lower growth of 15.9 per cent in net foreign exchange assets (NFA) of the RBI compared with 32.8 per cent in the corresponding period last year.

The sharp decline in net RBI credit to Government observed in 2003-04 (62.8 per cent in the full year) continued in this year also with a further fall of 69.9 per cent up to January 28, 2005, and resulted in NFA constituting 120.9 per cent of reserve

money as of that date. Despite a lower growth of reserve money in this year, liquidity management remained a major concern. This was because, after a sharp increase in reserve money in the previous year, there was a liquidity overhang of over Rs.81,000 crore in the form of outstanding reverse repos under the Liquidity Adjustment Facility (LAF), Government surplus balances and excess reserves of banks from the previous year. This overhang posed a nascent problem in liquidity management. The Government raised the limit under MSS from Rs.60, 000 crore to Rs. 80,000 crore on August 26, 2004, after the threshold limit of Rs.50, 000 crore was crossed. Measures taken by the RBI include discontinuation of the auction of 7-day and 14- day reverse repo and its substitution by an overnight fixed rate reverse repo, and raising the cash reserve ratio by 50 basis points to 5 per cent.

Compared to its stock at the beginning of the year, broad money (M3) grew by 9.5 per cent in the current year up to January 21, 2005, compared with the high of 16.6 per cent in the whole of the previous year, and 12.1 per cent in the same period last year. The money multiplier — the ratio of M3 to reserve money — which increased from 4.43 at end-March 2002 to 4.65 at end-March 2003 declined to 4.59 at end-March 2004. As on January 21, 2005, this ratio stood at 4.72.

Despite lower growth of money supply in the current year, there was an impressive growth in gross bank credit by scheduled commercial banks (SCBs). Gross bank credit, increased by 19.9 per cent up to January 21, 2005 compared to 9.3 per cent in the corresponding previous period. Growth was observed in both food and nonfood credit, more so in the case of the latter. The Government announced a comprehensive policy envisaging a 30 per cent increase in agriculture credit in the current year and doubling the credit flow to the sector in three years.

In this year, there was a marginal northward movement in deposit rates of five major banks by 25 basis points. Call money rates moved up in the second half of the year, reflecting higher growth of bank credit. Nevertheless, interest rates continue to be moderate. The benchmark prime lending rates of five major banks were lower by 25 to 50 basis points in December, 2004 compared to the rates prevailing a year ago.

The significant improvement in the rates of savings and investment witnessed in 2002-03 continued through 2003-04. Savings rate, which is gross domestic savings as a proportion of GDP at current market prices, increased from 23.4 per cent in 2001-02 to 26.1 per cent in 2002-03. The corresponding increase in investment rate (gross domestic capital formation as a proportion of GDP) was from 22.6 per cent to 24.8 per cent. There were further improvements in savings and investment rates in 2003-04 to 28.1 per cent and 26.3 per cent, respectively. The savings rate in 2003-04 is the highest recorded so far and the investment rate in 2003-04 is the highest since 1996-97.

#### **4.15. MONETARY POLICY 2005-06**

Growth expectation was at 8.1 per cent in the year, 2005-06. Growth of Gross Domestic Product (GDP) at constant prices in excess of 8.0 per cent has been achieved by the economy in only five years of recorded history, and two out of these five were in the last three years. Some significant dimensions of the dynamic growth during the years are new industrial resurgence, a pick up in investment, modest inflation in spite of spiraling global crude prices, rapid growth in exports and imports with a widening of the current account deficit, laying of some institutional foundations for faster development of physical infrastructure, progress in fiscal consolidation and the launching of the National Rural Employment Guarantee (NREG) Scheme for inclusive growth and social security.

Against the annual average growth rate of 8.0 per cent envisaged in the Tenth Five Year Plan (2002- 2007), the average rate was estimated to have been 7.0 per cent in the first four years ending in 2005-06. Maintenance of growth at or above 8 per cent in 2006-07 will yield a plan period annual average growth rate of at least 7.2 per cent. The growth trend for the last three years appears to indicate the beginning of a new phase of cyclical upswing in the economy from 2003-04. The initial momentum to this new phase of expansion, in 2003-04, was provided by agriculture. After a somewhat subdued impetus from the farm sector in 2004-05, there is a moderate recovery in agricultural growth in 2005-06.

Inflation, in most parts of the world, showed a rising tendency on account of rising global crude oil prices. The sharp and spiraling increase in international oil prices



from late 2003, posed considerable challenge in the maintenance of macroeconomic stability. In India, inflation, measured by a point-to-point increase in the Wholesale Price Index (WPI) declined from 5.7 per cent on April 2, 2005, to a low of 3.3 per cent on August 27, 2005 and to 4.1 per cent on February 4, 2006. Like in the previous year, the fuel, power, light, and lubricants group, having a weight of 14.2 per cent in the WPI basket, contributed the most to price rises in the economy.

In April 2005, inflation, year on year, in terms of consumer price index for agricultural laborers (CPI-AL) and of consumer price index for industrial workers (CPI-IW) was 3 per cent and 5 per cent, respectively. Data for CPI-AL for the first nine months of 2005-06, indicated that inflation in CPI-AL remained below that in CPI-IW for each of the months of the financial year including December 2005. Inflation in both CPI-AL and CPI-IW, after declining to 3.2 per cent and 3.4 per cent respectively – with some minor fluctuations – between April and August, 2005, revealed an upward trend. In December, 2005, inflation in CPI-IW was 5.6 per cent. The upward trend in consumer prices was primarily on account of hardening of retail prices of vegetables and pulses.

Maintaining price stability continued to be one of the main objectives of monetary policy. For achieving this, along with the other objective of providing an enabling environment for higher investment and growth, the policy variables were recalibrated appropriately. While the Bank Rate and the cash reserve ratio (CRR) were kept unchanged during the current year at 6.0 per cent and 5.0 per cent, respectively, the fixed reverse repo rate under the Liquidity Adjustment Facility (LAF) of the Reserve Bank of India (RBI) was raised three times by 25 basis points each, to reach 5.50 per cent on January 24, 2006. With the given spread of 100 basis points, the repo rate is pegged at 6.50 per cent since January 24, 2006. RBI's policy response was in line with the cautious approach in many other countries of moving policy interest rates in a measured way in the face of the threat of inflationary expectations firming up with high crude oil prices.

Growth in broad money (M3) of 12.2 per cent at end-March 2005 was lower than both the 14.0 per cent projected by the RBI in its Annual Policy Statement for

2004-05 and 16.7 per cent observed at end-March 2004. Furthermore, during 2004-05, relative to the previous year, growth in sources of M3 displayed some diversity with net domestic credit growing faster (13.3 per cent compared to 11.7 per cent during 2003-04) and net foreign exchange assets (NFA) of the banking sector growing slower (23.3 per cent compared to 33.7 per cent during 2003-04). Much of the net domestic credit expansion in 2004-05 was from growth in bank credit to the commercial sector (22.8 per cent) while net bank credit to government increased by only 0.4 per cent. Relative to end-March 2005, on January 20, 2006, M3 was up by 13.2 per cent compared to 9.2 per cent observed in the corresponding period of the previous year.

The year-on-year growth of M3 at 16.4 per cent on January 20, 2006 was not only higher than the projected 14.5 per cent in RBI's Annual Policy Statement for 2005-06, but also higher than the rate observed a year ago. Price stability despite a rapid increase in money supply during the current year testified to the Investment - driven nature of the credit growth and stability of inflation expectations based on confidence in the appropriate stance of monetary and fiscal policies.

The money-multiplier (the ratio of M3 to reserve money, M0) rose steadily from 4.59 at end-March 2004 to 4.61 at end-March 2005 and further to 4.77 on January 20, 2006. This reflected a decline in the reserve-deposit ratio for example, from 0.064 to 0.061 between January 21, 2005 and January 20, 2006.

Consequently, growth in reserve money (M0) was slightly slower than that of M3. Furthermore, M0 growth had also decelerated from 18.3 per cent at end-March 2004 to 12.1 per cent at end-March 2005. Continuing the deceleration observed in the previous year, in the current financial year, on January 20, 2006, M0 growth was 14.9 per cent compared to 15.3 per cent observed on the corresponding date of the previous year. The growth of NFA of the RBI dominated the evolution of M0 in 2004-05.

In 2004-05, a part of this growth in NFA had to be sterilized by recourse to the Market Stabilization Scheme (MSS) and Liquidity Adjustment Facility (LAF) and a resultant decline in net domestic assets (NDA) of the RBI. The call money rates followed an upward trend to reach 4.94 per cent on April 30, 2005, when the fixed reverse-repo rate was raised by 25 basis points to 5.0 per cent. Call rates remained

under pressure to reach 7.71 per cent on January 27, 2006, but moderated to 6.88 per cent on February 16, 2006.

In 2004-05, rising interest rates had an adverse effect on bond prices and reduced treasury profits of banks. SCBs' total income during 2004-05 grew at a slower rate of 1.5 per cent than 6.7 per cent observed in 2003-04. Furthermore, with credit growing faster than deposits, recourse to funding sources like borrowing increased.

The sharp rise in current account deficit reflected the burgeoning trade deficit during the year. Net invisibles increased, but were not enough to neutralize the expanding trade deficit. In April-September 2005, while the capital account surplus at US\$19.5 billion remained higher than the current account deficit of US\$13.0 billion, there was a slowdown in reserve accretion on BOP basis.

The increasing trend in gross domestic savings as a proportion of GDP observed since 2001-02 continued, according to the new series of national accounts, with the savings ratio rising from 26.5 per cent in 2002-03 to 28.9 per cent in 2003-04 and further to 29.1 per cent in 2004-05. In 2004-05, the rise in the savings rate was contributed by two of its three components: namely public and corporate savings. The third component, namely household savings, grew at 5.9 per cent – slower than the GDP growth rate – and made a negative contribution by coming down as a proportion of GDP. While consumption expenditure, when measured as a proportion of GDP, exhibited a declining trend both in public and private consumption categories, such expenditure continued to dominate the demand side of national income. As a proportion of GDP at current prices, Government final consumption expenditure (GFCE) declined from 12.9 per cent in 1999-2000 to 11.2 per cent in 2003-04. The proportion is estimated to have grown marginally to 11.3 per cent in 2004-05.

In line with the rise in the rate of gross domestic savings in 2002-03 and 2003-04, there was an increase in the rate of GDCF or investment. However, the increase in GDCF was less than the increase in savings, leading to a current account surplus in BOP, as a proportion of GDP, of 1.2 per cent and 1.6 per cent, respectively. In 2004-05, reflecting the pick up in investment in the economy, GDCF increased by 2.9 percentage points of GDP, surpassing the 0.2 percentage point increase in the ratio of gross

domestic savings to GDP. A current account deficit in BOP of 0.8 per cent of GDP largely bridged the savings-investment gap. Gross domestic investment grew from 27.2 per cent in 2003-04 to 30.1 per cent in 2004-05, mainly on account of private investment growing at 19.7 per cent.

#### **4.16. MONETARY POLICY 2006-07**

Vigorous growth with strong macroeconomic fundamentals has characterized developments in the Indian economy in 2006-07. However, there are some genuine concerns on the inflation front. Growth of 9.0 per cent and 9.2 per cent in 2005-06 and 2006-07, respectively, by most accounts, surpassed expectations. While the up-and-down pattern in agriculture continued with growth estimated at 6.0 per cent and 2.7 per cent in the two recent years, and services maintained its vigorous growth performance, there were distinct signs of sustained improvements on the industrial front. The overall macroeconomic fundamentals are robust, particularly with tangible progress towards fiscal consolidation and a strong balance of payments position.

The advance estimates (AE) of gross domestic product (GDP) for 2006-07, released by the Central Statistical Organization (CSO) on February 7, 2007, placed the growth of GDP at factor cost at constant (1999-2000) prices in the current year at 9.2 per cent. But it reached at 9.7% during the year. In 2006-07, while the share of agriculture in GDP declined to 18.5 per cent, the share of industry and services improved to 26.4 per cent and 55.1 per cent, respectively.

A notable feature of the current growth phase is the sharp rise in the rate of investment in the economy. Investment, in general being a forward looking variable, reflects a high degree of business optimism.

As much as 39.4 per cent of the overall inflation in WPI on February 3, 2007 came from the primary group of commodities. Within the primary group, the mineral subgroup recorded the highest year-on-year inflation at 18.2 per cent, followed by food articles at 12.2 per cent and non-food articles at 12.0 per cent. Food articles have a high weight of 15.4 per cent in the WPI basket. However, average inflation in the 52 weeks ending on February 3, 2007 remained at 5 per cent.

Inflation, with its roots in supply-side factors, was accompanied by buoyant growth of money and credit in 2005-06 and 2006-07. While GDP growth accelerated from 7.5 per cent to 9.0 per cent between 2004-05 and 2005-06, the corresponding acceleration in growth of broad money (M3) was from 12.3 per cent to 17.0 per cent. Year-on-year, M3 grew by 21.1 per cent on January 19, 2007. The industrial resurgence and upswing in investment was reflected in, and sustained by, growth of gross bank credit (as per data covering 90 per cent of credit by scheduled commercial banks), for example, to industry (Medium and large) at 31.6 per cent and for housing loans at 38.0 per cent in 2005-06. It was also observed in year-on-year growth of gross bank credit at 32.0 per cent in September 2006.

Reconciling the twin needs of facilitating credit for growth on the one hand and containing liquidity to tame inflation on the other remained a challenge. Liquidity conditions remained fairly comfortable up to early September 2006 with the unwinding of the Central Government surplus balances with the RBI and continued intervention in the foreign exchange market to maintain orderly conditions. During 2006- 07, up to September 8, 2006, RBI had not received any bid for repo under Liquidity Adjustment Facility (LAF) and the continuous flow of funds under reverse-repo indicated a comfortable liquidity position.

From mid-September through October, 2006, while RBI had to provide accommodation to some banks through repo facility, with reverse repo operations simultaneously, in net terms, RBI absorbed liquidity from the system. With year-on-year inflation stubbornly above 5 per cent from early-August 2006, on October 31, 2006, the RBI announced more measures to stem inflationary expectations and also to contain the credit off-take at the desired growth rate of 20.0 per cent. Unlike the previous four times, when both the repo and the reverse repo rates were raised by the same 25 basis points, thereby keeping their spread constant at 100 basis points, on October 31, 2006, only the repo rate was raised by 25 basis points. With a repeat of this policy move on January 31, 2007, the repo rate reached 7.50 per cent with a spread of 150 basis points over the reverse repo rate. Since deposits are growing at a lower rate than credit, the higher repo rate signaled to the banks the higher price of accommodation they would have to pay in case of credit overextension.

The cash reserve ratio (CRR) was hiked by 25 basis points each time on December 23, 2006 (5.25 per cent) and January 6, 2007 (5.50 per cent). While a further increase of CRR of 25 basis points was effective on February 17, another similar increase of 25 basis points followed on March 3, 2007. Sustained faster growth of M3 relative to that of reserve money (M0) observed in recent years continued in 2005-06 and 2006-07 with the money multiplier steadily increasing from 4.76 at end-March 2006 and to 4.79 on January 19, 2007. The increase in money multiplier coincided with fast growth of M0 at 17.2 per cent during 2005-06 and year-on-year at 20.0 per cent on January 19, 2007 and resulted in the rapid growth of M3.

The growth of NFA between end-March 2006 and January 19, 2007 was Rs. 114,338 crore. Liquidity in the system continued to be addressed by Market Stabilization Scheme (MSS) operations. The change in the liquidity and inflation environment is reflected in the continuous hardening of interest rates in 2005-06 and in 2006-07. With the high demand for credit not adequately matched by deposit growth, there was steady increase in the credit-deposit ratio and hardening of interest rates. Movements in the call money rates also reveal a similar picture. The hardening of rates was more pronounced at the shorter end of the yield curve, suggesting concerns about inflation only in the short run.

The rapid growth in NFA of the RBI was a reflection of the buoyant flows of foreign exchange reserves through the balance of payments. Reserve accretion through the balance of payments was US\$15.1 billion in 2005-06 and US\$8.6 billion in the first six months of 2006-07. Foreign exchange reserves grew to US\$185.1 billion on February 9, 2007.

The current account deficit reflected the large and growing trade deficit in the last two years. Exports grew fast, but imports grew even faster, reflecting in part the ongoing investment boom and the high international petroleum price. In 2006-07, imports (in US dollar terms and customs basis) had grown by 36.3 per cent. Overall, the external environment remained supportive with the invisible account remaining strong and stable capital flows seamlessly financing the moderate levels of current account deficit caused primarily by the rise in international oil prices.

The increasing trend in gross domestic savings as a proportion of GDP was observed as 32.4 per cent in 2005-06. The rise in the savings rate in 2005-06 was contributed by two of its three components: private corporate and the household sector, which as proportion of GDP, increased by 1.0 percentage point and 0.7 percentage points, respectively. The third component, namely public savings, declined by 0.4 percentage points, and made a negative contribution to the overall savings rate.

In tandem with the rise in the rate of gross domestic savings, there was a step up in the rate of gross domestic capital formation (GDCF) or investment from 28 per cent of GDP to 31.5 per cent of GDP leading to a savings investment gap or a current account deficit of 0.4 per cent of GDP in 2004-05.

GDCF rose further to 33.8 per cent of GDP in 2005-06, widening the saving–investment gap to 1.4 per cent of GDP, with its implications for the current account of the balance of payments.

#### **4.17. MONETARY POLICY 2007-08**

The economy has moved decisively to a higher growth phase. The projected economic growth was 8.7 per cent for 2007-08. This represents a deceleration from the unexpectedly high growth of 9.4 per cent and 9.6 per cent, respectively, in the previous two years. With the economy modernizing, globalizing and growing rapidly, some degree of cyclical fluctuation is to be expected. This was taken into account while setting the Eleventh Five Year Plan (2007-08 to 2011-12) growth target of 9 per cent. GDP at current market prices was projected at Rs. 46, 93, 602 crore in 2007-08 by the Central Statistical Organization in its advance Estimates. Per capita income at nominal exchange rate is estimated at US\$ 1,021.

Growth in 2006-07 initially estimated at 9.2 per cent in February 2007 was revised upwards to 9.4 per cent and further to 9.6 per cent in the Quick Estimates released by the CSO on January 31, 2008. This suggested that upward adjustments in the 2007-08 projections are possible.

A notable feature of the recent GDP growth has been a sharply rising trend in gross domestic investment and saving, with the former rising by 13.1 per cent of GDP

and the latter by 11.3 per cent of GDP over five years till 2006-07. The average investment ratio for the Tenth Five Year Plan at 31.4 per cent was higher than that for the Ninth Five Year Plan, while the average saving rate was also 31.4 per cent of GDP higher than the average ratio of 23.6 per cent during the Ninth Five Year Plan.

Gross domestic savings as a proportion of GDP continued to improve, rising from 26.4 per cent in 2002-03 to 34.8 per cent in 2006-07 with an average of 31.4 per cent during the Tenth Five Year Plan. The savings-investment gap which remained positive during 2001-04 became negative thereafter. In a modern economy, the excess of domestic saving over domestic investment suggests a deflationary situation in which demand has not kept pace with increased capacity. Thus the reversal of the saving-investment balance should be viewed as a correction of the domestic supply-demand balance, occurring through above normal increase in demand during 2005-06 and 2006-07.

Inflation as measured by the Wholesale Price Index (WPI) rose from 4.4 per cent in 2005-06 to 5.4 per cent in 2006-07 and was expected to return to around 4% in 2007-08. Annual headline inflation was 4.1 per cent on February 2, 2008. The close monitoring of prices and appropriate policy interventions initiated in the previous year helped in maintaining price stability and reducing the impact of increase in global prices on domestic consumers.

The Reserve Bank of India's monetary policy stance is to serve the twin objectives of managing the transition to a higher growth path and containing inflationary pressures. For policy purposes for 2007-08, the RBI assumed a real GDP growth of 8.5 per cent with inflation close to 5 per cent, and targeted the monetary expansion in the range of 17-17.5 per cent and credit expansion in the range of 20 to 24 per cent as consistent with envisaged growth and inflation.

The cumulative increase in the stock of M3 in 2007- 08 has also remained above the cumulative growth in 2006-07 and was 13.3 per cent on January 4, 2008, compared to 12.2 per cent on January 5, 2006. Thus it is difficult to relate either the annual or trend rate of growth of M3 to inflation which has been on a down trend during this period.



The average growth of bank credit to commercial sector (BCCS) also reached a low of 11.8 per cent in 2003-04 and rose in the next two years to 28 per cent in 2005-06. However, in contrast to money supply, average credit growth slowed marginally to 26.8 per cent in 2006-07 and has decelerated further in 2007-08.

Nominal interest rates, as measured by the cut-off yield at auction on 91-day and 364-day Treasury Bills have followed a pattern similar to that of money growth. The average cut-off yield on 364-day (91-day) Treasury Bills reached a trough of 4.7 (4.6) per cent in 2003-04 and has been rising since then. Yields averaged 7 (6.6) per cent. The acceleration in reserve money growth has continued in 2007-08. The expansion in M0 (up to January 4, 2008) was 13.6 per cent compared to 9.1 per cent during the corresponding period of the previous year. The main driver of growth of M0 on financial year as well as on annual basis has continued to be net foreign assets (NFA) of the RBI. NFA of the RBI expanded by 25.2 per cent in this year (39.1 per cent on annual basis) compared to an expansion of 15.9 per cent (26.1 per cent on annual basis) during the same period of the previous year. The share of NFA in the aggregate reserve money increased to 122.2 per cent as on March 31, 2007, as against 117.4 per cent on March 31, 2006. This ratio further increased to 134.7 per cent on January 4, 2008. With the continuing surge in capital flows during 2007-08 and the need to regulate domestic liquidity, the MSS limits were revised upward four times to a level of Rs. 2,50,000 crore during the year.

The higher growth of the monetary variables (M0 and M3), despite the MSS operations, generated higher liquidity in the system. Short-term liquidity variations were addressed by RBI through the Liquidity Adjustment Facility during 2006-07. The doubling of the real interest rate may have had a moderating effect on credit demand and consequently on both inflation and growth. It has also led to a widening of the interest differential between domestic and global rates.

The current account deficit (CAD) mirrors the saving-investment gap in the national income accounts and thus constitutes net utilized foreign savings. The challenge is to leverage foreign inflows (i.e. foreign savings and investment) to promote growth without having the long-term consequences of external payment

imbalances. Thus the challenge for policy is to maximize the benefits while minimizing the costs of exchange rate management.

With the demand for foreign exchange (debit side of BOP) not keeping pace with the supply of foreign exchange (credit side of BOP), the rupee appreciated by 8.9 per cent against the US dollar during the current financial year between April 3, 2007, and February 6, 2008. It even depreciated marginally against the Euro during this financial year.

#### **4.18. MONETARY POLICY 2008-09**

Despite the slowdown in growth, investment has remained relatively buoyant, growing at a rate higher than that of GDP. The ratio of fixed investment to GDP consequently increased to 32.2 per cent of GDP in 2008-09 from 31.6 per cent in 2007-08. This reflects the resilience of Indian enterprise, in the face of a massive increase in global uncertainty and risk aversion and freezing of highly developed financial markets.

A noteworthy development during the year was a sharp rise in Wholesale Price Index (WPI) inflation followed by an equally sharp fall, with the WPI inflation falling to unprecedented level of close to zero per cent by March 2009. This was driven largely by the rapid rise and equally rapid fall in global commodity prices during January 2008 to March 2009. Domestic food price inflation, as measured by the WPI food sub-index, though declining, remains much higher than overall inflation.

The global financial meltdown and consequent economic recession in developed economies have clearly been major factor in India's economic slowdown.

Economic growth decelerated in 2008-09 to 6.7 per cent. This represented a decline of 2.1 per cent from the average growth rate of 8.8 per cent in the previous five years (2003-04 to 2007-08). Per capita GDP growth, a proxy for per capita income, which broadly reflects the improvement in the income of the average person, grew by an estimated 4.6 per cent in 2008-09.

The growth of GDP at factor cost (at constant 1999-2000 prices) at 6.7 per cent in 2008-09 nevertheless represented a deceleration from high growth of 9.0 per cent

and 9.7 per cent in 2007-08 and 2006-07 respectively. The deceleration of growth in 2008-09 was spread across all sectors except mining and quarrying and community, social and personal services. The growth in agriculture and allied activities decelerated from 4.9 per cent in 2007-08 to 1.6 per cent in 2008-09. A notable feature of the growth of the Indian economy from 2002-03 has been the rising trend in the gross domestic capital formation (GDCF). Gross capital formation (GCF), which was 25.2 per cent of the GDP in 2002-03, increased to 39.1 per cent in 2007-08. Much of this increase is attributable to a rise in the rate of investment by the corporate sector.

The growth in capital formation in recent years has been amply supported by a rise in the savings rate. The gross domestic savings as a percentage of GDP at current market prices stood at 37.7 per cent in 2007-08 as compared to 29.8 per cent in 2003-04. Private sector savings dominated the total savings in 2007-08 and were at 33.2 per cent of GDP.

The saving investment gap in the public sector stood at (-) 5.3 per cent in 2003-04 that moderated to (-) 4.6 per cent in 2007-08. This reflected the narrowing gap between public sector capital formation and public sector gross domestic savings. For the household sector the gap has remained more or less constant reflecting no major change in the saving investment balance. In the case of the private corporate sector however, the saving investment gap widened to (-) 7.0 per cent in 2007-08 reflecting the high rate of capital formation over and above their internal savings.

India could not insulate itself from the adverse developments in the international financial markets. The effect on the Indian economy was not significant in the beginning, but, the current account was affected mainly after September 2008 through slowdown in exports. Despite setbacks, however, the BOP situation of the country continues to remain resilient. The global crisis also meant that the economy experienced extreme volatility in terms of fluctuations in stock market prices, exchange rates and inflation levels during a short duration necessitating reversal of policy to deal with emergent situations.

Before the onset of the financial crisis, the main concern of the policymakers was excessive capital inflows, which increased from 3.1 per cent of GDP in 2005-06 to

9.3 per cent in 2007-08. While this led to increase in foreign exchange reserves, it also contributed to monetary expansion, which fuelled liquidity growth. WPI inflation reached a trough of 3.1 per cent in October 2007, a month before global commodity price inflation zoomed to double digits from low single digits. The rising oil and commodity prices, contributed to a significant rise in prices, with annual WPI peaking at 12.8 per cent in August 2008. The monetary policy stance during the first half of 2008-09 was therefore directed at containing the price rise.

The policy stance of the Reserve Bank of India (RBI) in the first half of the year was oriented towards controlling monetary expansion, in view of the apparent link between monetary expansion and inflationary expectations partly due to the perceived liquidity overhang. In the first six months of 2008-09, year-on-year growth of broad money was lower than the growth of reserve money. The Government also took various fiscal and administrative measures during the first half of 2008- 09 to rein in inflation. The key policy rates of RBI thus moved to signal a contractionary monetary stance. The repo rate (RR) was increased by 125 basis points in three tranches from 7.75 per cent at the beginning of April 2008 to 9.0 per cent with effect from August 30, 2008. The reverse-repo rate (R-RR) was however left unchanged at 6.0 per cent. The cash reserve ratio (CRR) was increased by 150 basis points in six tranches from 7.50 per cent at the beginning of April 2008 to 9.0 per cent with effect from August 30, 2008.

The surge in the supply of foreign currency in the domestic market led inevitably to a rise in the price of the rupee. The rupee gradually appreciated from Rs. 46.54 per US dollar in August 2006 to Rs. 39.37 in January 2008, a movement that had begun to affect profitability and competitiveness of the export sector. The global financial crisis however reversed the rupee appreciation and after the end of positive shock around January 2008, rupee began a slow decline. The annual average exchange rate during 2008-09 worked out to Rs. 45.99 per US dollar compared to Rs. 40.26 per US dollar in 2007-08. The outflow of foreign exchange, as fallout of crisis, also meant tightening of liquidity situation in the economy. To deal with the liquidity crunch and the virtual freezing of international credit, the monetary stance underwent an abrupt change in the second half of 2008-09. The RBI responded to the emergent situation by

facilitating monetary expansion through decreases in the CRR, repo and reverse repo rates, and the statutory liquidity ratio (SLR).

The repo rate was reduced by 400 basis points in five tranches from 9.0 in August 2008 to 5.0 per cent beginning March 5, 2009. The reverse-repo rate was lowered by 250 basis points in three tranches from 6.0 (as was prevalent in November 2008) to 3.5 per cent from March 5, 2009. The reverse-repo and repo rates were again reduced by 25 basis points each with effect from April 21, 2009. SLR was lowered by 100 basis points from 25 per cent of net demand and time liabilities (NDTL) to 24 per cent with effect from the fortnight beginning November 8, 2008. The CRR was lowered by 400 basis points in four tranches from 9.0 to 5.0 per cent with effect from January 17, 2009. The credit policy measures by the RBI broadly aimed at providing adequate liquidity to compensate for the squeeze emanating from foreign financial markets and improving foreign exchange liquidity. These measures were supplemented by sector - specific credit measures for exports, housing, micro and small enterprises and infrastructure. The monetary measures had a salutatory effect on the liquidity situation. The weighted average call money market rate, which had crossed the LAF corridor at several instances during the first half of 2008-09, remained within the LAF corridor after October 2008. Since mid-2008-09, the growth in reserve money decelerated after September 2008. The deceleration in M0 was largely on account of the decline in net foreign exchange assets (NFA) of RBI (a major determinant of reserve money growth) due to reduced capital inflows. On the other hand, the net domestic credit (NDC) of the RBI expanded due to an increase in net RBI credit to the Central Government in the second half of the year. Taking the year as whole, broad money (M3) recorded an increase of 18.4 per cent during 2008-09, as against 21.2 per cent in 2007-08.

The money multiplier, which is the ratio of M3 to M0, was 4.3 in end-March 2008. The demand for bank credit increased sharply during April-October 2008 as companies found that external sources of credit were drying up in the wake of the global financial crisis. There was also a sharp increase in credit to oil marketing companies. However, towards the latter part of 2008-09, credit growth declined abruptly reflecting the slowdown of the economy in general and the industrial sector in particular. On a full year basis, bank credit growth fell from 22.3 per cent in 2007-08

to 17.3 per cent in 2008-09. Having regard to the structural rigidities associated with the money market, it was observed that the average PLR did not show much variation. From 12.5 per cent in April 2008, it increased to 13.9 per cent in September 2008 and thereafter declined to 12.0 per cent in March 2009.

The overall balance of payments situation remained resilient in 2008-09 despite signs of strain in the capital and current accounts, due to the global crisis. The average WPI inflation for 2008-09 was 8.4 per cent as against 4.7 per cent in 2007-08. There has also been significant variation in inflation rate in terms of WPI and the Consumer Price Indices (CPIs). Inflation rate as per Consumer Price Index for Rural Laborers (CPI-RL) was 9.7 per cent and on CPI for Industrial Workers (CPI-IW) was 8 per cent as of end-March 2009. The average inflation on CPI-RL and CPI-IW for the year 2008-09 was 10.2 and 9.1 per cent, respectively. The implicit deflator for GDPMP defined as the ratio of GDP at current prices to GDP at constant prices is the most comprehensive measure of inflation on an annual basis. Overall inflation, as measured by the aggregate deflator for GDPMP, declined from 5.0 per cent in 2006-07 to 4.9 per cent in 2007-08 and is estimated at 6.2 per cent in 2008-09 as a result of the higher inflation experienced during most of the year.

#### **4.19. MONETARY POLICY 2009-10**

The fiscal year 2009-10 began as a difficult one. There was a significant slowdown in the growth rate in the second half of 2008-09, following the financial crisis that began in the industrialized nations in 2007 and spread to the real economy across the world. The growth rate of the gross domestic product (GDP) in 2008-09 was 6.7 per cent, with growth in the last two quarters hovering around 6 per cent. There was apprehension that this trend would persist for some time, as the full impact of the economic slowdown in the developed world worked through the system. It was also a year of reckoning for the policymakers, who had taken a calculated risk in providing substantial fiscal expansion to counter the negative fallout of the global slowdown. Inevitably, India's fiscal deficit increased from the end of 2007-08, reaching 6.8 per cent (budget estimate, BE) of GDP in 2009-10. A delayed and severely subnormal monsoon added to the overall uncertainty. The continued recession in the developed

world, for the better part of 2009-10, meant a sluggish export recovery and a slowdown in financial flows into the economy. Yet, over the span of the year, the economy posted a remarkable recovery, not only in terms of overall growth figures but, more importantly, in terms of certain fundamentals, which justify optimism for the Indian economy in the medium to long term.

The advance estimate of GDP growth at 7.2 per cent for 2009-10, falls within the range of 7 +/- 0.75 projected nearly a year ago in the Economic Survey 2008-09. With the downside risk to growth due to the delayed and sub-normal monsoons having been contained to a large extent, through the likelihood of a better-than-average Rabi agricultural season, the economy has responded well to the policy measures undertaken in the wake of the global financial crisis. While the GDP at factor costs at constant 2004-05 prices, is placed at Rs 44, 53, 064 crore, the GDP at market prices, at constant prices, is estimated at Rs 47, 67,142 crore. The corresponding figures at current prices are Rs 57, 91, 268 crore and Rs 61, 64, 178 crore respectively. It is worthwhile to note here that the growth rates of GDP at market prices, at constant 2004-05 prices, in 2008-09 and 2009-10 at 5.1 per cent and 6.8 per cent have been considerably lower than the growth rates of GDP at factor cost. This is due to the significant decline in net indirect taxes (i.e. indirect taxes minus subsidies) in the said years on account of the fiscal stimulus implemented by the Government, which included tax relief to boost demand and increase in the expenditure on subsidies.

The recovery in GDP growth for 2009-10, as indicated in the advance estimates, is broad based. Seven out of eight sectors/sub-sectors show a growth rate of 6.5 per cent or higher. The exception, as anticipated, is agriculture and allied sectors where the growth rate is estimated to be minus 0.2 per cent over 2008-09. Sectors including mining and quarrying; manufacturing; and electricity, gas and water supply have significantly improved their growth rates at over 8 per cent in comparison with 2008-09. The construction sector and trade, hotels, transport and communication have also improved their growth rates over the preceding year, though to a lesser extent. However, the growth rate of community, social and personal services has declined significantly, though it continues to be around its pre-global crisis medium-term trend growth rate.

Financing, insurance, real estate and business services have retained their growth momentum at around 10 per cent in 2009-10. In terms of sectoral shares, the share of agriculture and allied sectors in GDP at factor cost has declined gradually from 18.9 per cent in 2004-05 to 14.6 per cent in 2009-10.

During the same period, the share of industry has remained the same at about 28 per cent, while that of services has gone up from 53.2 per cent in 2004-05 to 57.2 per cent in 2009-10.

The growth rates in per capita income and consumption, which are gross measures of welfare in general, have declined in the last two years. This is a reflection of the slowdown in the overall GDP growth. While the growth in per capita income, measured in terms of GDP at constant market prices, has declined from a high of 8.1 per cent in 2007-08 to 3.7 per cent in 2008-09 and then recovered to 5.3 per cent in 2009-10, per capita consumption growth as captured in the private final consumption expenditure (PFCE) shows a declining trend since 2007-08 with its growth rate in 2009-10 falling to one third of that in 2007-08. The rate of Gross domestic savings (GDS) on the new series increased from 32.2 per cent in 2004-05 to 36.4 per cent in 2007-08 before declining to 32.5 per cent in 2009-10.

The year-on-year WPI inflation rate has been fairly volatile in 2009-10. It was 1.2 per cent in March 2009 and then declined continuously to become negative during June-August 2009, assisted in part by the large statistical base effect from the previous year. It turned positive in September 2009 and accelerated to 4.8 per cent in November 2009 and further to 7.3 per cent in December 2009. For the fiscal year so far (March over December 2009) WPI inflation is estimated at 8 per cent.

The recent period has witnessed significant divergence in the WPI and CPI inflation rates, principally on account of the larger weights assigned to the food basket in the CPIs and due to the fact that retail prices are relatively sticky downwards. Thus, due to the sharp increase in essential commodity prices, while all the four CPIs remained elevated since March 2008, rising gradually from about 7 to 8 per cent (month-on-month) to around 15 to 17 per cent in December 2009, WPI inflation first



went up from around 8 per cent to 13 per cent, then turned negative during June to August 2009 before rising again to over 7 per cent in December 2009.

As measured by the aggregate deflator for GDPMP, inflation has been estimated at 3.6 per cent in 2009-10 as per the advance estimates. Consumer inflation, as measured by the deflator for the PFCE, is estimated at 6.4 per cent in 2009-10, as per the advance estimates. The global economy, led by the Asian economies especially China and India, has shown signs of recovery in fiscal 2009-10. While global trade is gradually picking up, the other indicators of economic activity such as capital flows, assets and commodity prices are more buoyant. However, there has been improvement in the balance of payments situation during 2009-10 over 2008-09, reflecting higher net capital inflows and lower trade deficit.

Since the outbreak of the global financial crisis in September 2008, the RBI has followed an accommodative monetary policy. In the course of 2009-10, this stance was principally geared towards supporting early recovery of the growth momentum, while facilitating the unprecedented borrowing requirement of the Government to fund its fiscal deficit. The fact that the latter was managed well with nearly two-thirds of the borrowing being completed in the first half of the fiscal year not only helped in checking undue pressure on interest rates, but also created the space for the revival of private investment demand in the second half of the year.

The transmission of monetary policy measures continues to be sluggish and differential in its impact across various segments of the financial markets.

The downward revisions in policy rates announced by the RBI post-September 2008 got transmitted into the money and G-Sec markets; however, the transmission has been slow and lagged in the case of the credit market. Though lending rates of all categories of banks (public, private and foreign) declined marginally from March 2009 (with benchmark prime lending rates [BPLR] of scheduled commercial banks [SCBs] having declined by 25 to 100 basis points), the decline was not sufficient to accelerate the demand for bank credit. Consequently, while borrowers have turned to alternate sources of possibly cheaper finance to meet their funding needs, banks flush with liquidity parked their surplus funds under the reverse repo window.

There has been continuous moderation in the growth in broad money (M3) from around 21 per cent at the beginning of the fiscal year to 16.5 per cent as of mid-January 2010 and it has remained below the indicated growth projection for the period. While in the first half of the year, credit to the Government remained the key driver of money growth, since the third quarter of 2009-10 that too has moderated.

Demand for bank credit/non-food credit remained muted during 2009-10. It was only from November 2009 that some signs of pick-up became evident. On financial-year basis, growth in non-food credit remained negative till June 2009. It is also noteworthy that growth in aggregate deposits has remained higher than the growth in bank credit during 2009-10. The lower expansion in credit relative to the significant expansion in deposits during 2009-10 has resulted in a decline in the credit-deposit ratio from 72.4 in end March 2009 to 70.8 in mid- January 2010, though with some signs of revival since December 2009.

Growth in sectoral deployment of gross bank credit on a year-on-year basis (as on November 20, 2009) shows that retail credit has not picked up during 2009-10. While growth in credit to agriculture remained more or less the same as on the corresponding date of the preceding year, for the other broad sectors—industry, personal loans and services—growth in credit decelerated as compared to the corresponding period of the preceding year. The contribution of non-bank credit sources increased from 52 per cent in 2008-09 to nearly 61 per cent in 2009-10. This increase in flow of funds from non-banking sources was both from domestic and foreign sources and is indicative of structural rigidities that affect the monetary transmission mechanism particularly in respect of the credit markets.

A major concern was regarding the possibility of a rise in unemployment due to the slowdown of the economy. On the whole, for the period October 2008 to September 2009, there may have been a net addition of 1.51 lakh jobs in the different sectors. Under the NREGA, which is a major rural employment initiative, during the year 2009-10, 4.34 crore households have been provided employment so far.

This is only a brief report of the major monetary measures during the period of our study, i.e. from 1991 to 2010. Now, we can have a look into its policy implementations in detail in the ensuing chapters.

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## **REFERENCES**

1. Reserve Bank of India: RBI Annual Report, Mumbai, 1991-92
2. Government of India: Economic Survey, New Delhi, 1991-92
3. Reserve Bank of India: RBI Annual Report, Mumbai, 1992-93
4. Government of India: Economic Survey, New Delhi, 1992-93
5. Reserve Bank of India: RBI Annual Report, Mumbai, 1993-94
6. Government of India: Economic Survey, New Delhi, 1993-94
7. Reserve Bank of India: RBI Annual Report, Mumbai, 1994-95
8. Government of India: Economic Survey, New Delhi, 1994-95
9. Reserve Bank of India: RBI Annual Report, Mumbai, 1995-96
10. Government of India: Economic Survey, New Delhi, 1995-96
11. Reserve Bank of India: RBI Annual Report, Mumbai, 1996-97
12. Government of India: Economic Survey, New Delhi, 1996-97
13. Reserve Bank of India: RBI Annual Report, Mumbai, 1997-98
14. Government of India: Economic Survey, New Delhi, 1997-98
15. Reserve Bank of India: RBI Annual Report, Mumbai, 1998-99
16. Government of India: Economic Survey, New Delhi, 1998-99
17. Reserve Bank of India: RBI Annual Report, Mumbai, 1999-2000
18. Government of India: Economic Survey, New Delhi, 1999-2000
19. Reserve Bank of India: RBI Annual Report, Mumbai, 2000-01

20. Government of India: Economic Survey, New Delhi, 2000-01
21. Reserve Bank of India: RBI Annual Report, Mumbai, 2001-02
22. Government of India: Economic Survey, New Delhi, 2001-02
23. Reserve Bank of India: RBI Annual Report, Mumbai, 2002-03
24. Government of India: Economic Survey, New Delhi, 2002-03
25. Reserve Bank of India: RBI Annual Report, Mumbai, 2003-04
26. Government of India: Economic Survey, New Delhi, 2003-04
27. Reserve Bank of India: RBI Annual Report, Mumbai, 2004-05
28. Government of India: Economic Survey, New Delhi, 2004-05
29. Reserve Bank of India: RBI Annual Report, Mumbai, 2005-06
30. Government of India: Economic Survey, New Delhi, 2005-06
31. Reserve Bank of India: RBI Annual Report, Mumbai, 2006-07
32. Government of India: Economic Survey, New Delhi, 2006-07
33. Reserve Bank of India: RBI Annual Report, Mumbai, 2007-08
34. Government of India: Economic Survey, New Delhi, 2007-08
35. Reserve Bank of India: RBI Annual Report, Mumbai, 2008-09
36. Government of India: Economic Survey, New Delhi, 2008-09
37. Reserve Bank of India: RBI Annual Report, Mumbai, 2009-10
38. Government of India: Economic Survey, New Delhi, 2009-10

**CHAPTER – V**

**MONEY MARKET INSTRUMENTS AND INTEREST  
RATES**

## **CHAPTER – V**

### **MONEY MARKET INSTRUMENTS AND INTEREST RATES**

Money market instruments and interest rates are inevitable tools which help in the development of an economy and hence they have to play important roles in the successful implementation of various policy measures. Interest rate is considered as an indicator of monetary policy in many countries and in India interest rate, credit availability and money supply are taken as major intermediate targets of monetary policy. So in this chapter, an attempt is made to find out the importance of these rates with their variations, throughout the years (from 1991 to 2010) in the context of monetary policy.

The policy, structure, level and trends of interest rates in India have their own peculiar nature and varied behavior. The important interest rates in India are Bank rate, Medium-term Lending Rate (MTLR), Prime Lending Rate (PLR), Bank Deposit Rate (BDR), Call Rate (CR), Certificate of Deposit Rate (CD), Commercial Paper Rate (CP) and Treasury Bill Rate (TBR). Among these, we took some selected rates to discuss them in detail for the purpose of the study.

The level of all these short-term and long-term interest rates in India significantly increased during the years. The extent of increase differs for different rates and in different periods of time. However, all types of interest rates have a tendency to fall significantly in recent years.

Since 1950, India has witnessed three phases of interest rate policy. The first phase (1950-60) was characterized by more or less free interest rates. The second phase (1961-85) was characterized by ‘administered’ or ‘regulated’ interest rate system. Phase three (1985 onwards) is the phase of gradual and progressive deregulation of interest rates, received a big push in 1991, and is still continuing.

During 1961-85, the interest rates in India were determined by the monetary authorities. Moreover, the breadth and depth of intervention had increased overtime. In view of serious deficiencies in the regulated interest rate system, Chakrabarty Committee had strongly recommended the replacement of regulated interest rate system by a system of free and flexible interest rates. <sup>(1)</sup> Free and flexible interest rates would be more conducive for the promotion of savings, investment and for increasing the efficiency of our monetary policy, government finance and financial system.

The deregulation of interest rate was introduced in the year 1988 when Reserve Bank of India removed the ceiling of 16.5% and fixed a minimum of 16% per annum. Further in the year 1989, the Reserve Bank of India also abolished ceiling on interest – rates on inter bank call market, inter bank short-term deposits etc., and as a result of it the interest rate got linked to market force. The interest rates were further deregulated in November 1991-by Narasimham Committee. In April, the interest rates have been almost completely deregulated.

When we compare Indian interest rates with those in other countries, particularly with advanced countries, we can see that the flexibility and variability of interest rates abroad have been much more than that prevailing in India. Short-term interest rates in India have usually higher and long-term interest have lower rates than the rate prevailing abroad. But after 1985, the long-term interest also showed an increasing trend.

When we compare the nominal and real rates of interest, we can see that while the nominal rates have shown a definite upward trend, the real rates have fluctuated in a disorderly manner and they have been either very low or negative in many years.

Tarapore (2001), in his book Monetary Management and Institutional Reforms stresses that the art of good interest rate management is to go through a process of

conjectural variation where the authorities and the markets test each other and swinging changes are avoided. <sup>(2)</sup>

## **5.1. LENDING RATE**

Prime Lending Rate (PLR) is the rate which the lender charges from the borrower of high credit standing. During 1975-76 to 1994-95, PLR remained an administered interest rate. With effect from October 18, 1994 the lending rate was deregulated in respect of loans above Rs. 2 lakh. In the deregulated system each of the major commercial banks and term-lending institutions began fixing their PLRs. With effect from April 19, 2001, PLR has been converted to a bench mark lending rate for banks. <sup>(3)</sup>

There may be distinction between nominal PLR and real PLR. Real PLR is worked out with reference to the 52-week average wholesale price index (WPI). Low nominal PLR may not increase demand for credit. What is relevant are the real PLR and not the nominal PLR. When the inflation rate falls faster than the interest rate, the real interest rate will be high and the demand for credit will be low. Deceleration in the demand for credit reflects the slow down in the industrial activities and depressed investment.

Demand for credit is not only influenced by the interest rates but also by so many other factors. Hence the cheap money policy through reduction in rate of interest may not work during the period of economic slow down.

Now, we can have a look into the variations in the lending rates during the period under study.



Table: V.1

**Lending Rate during the period from 1991-92 to 2010-11**

Year	Lending rate (%)
1991-92	19
1992-93	17-18
1993-94	14
1994-95	15
1995-96	16.5
1996-97	14.50-15.00
1997-98	14
1998-99	12.00-13.00
1999-00	12.00-12.50
2000-01	11.00-12.00
2001-02	11.00-12.01
2002-03	10.75-11.50
2003-04	10.25-11.00
2004-05	10.25-10.75
2005-06	10.25-10.75
2006-07	12.25-12.50
2007-08	12.25-12.75
2008-09	11.50-12.50
2009-10	11.00-12.00
2010-11	7.50-8.00

*Source: RBI publications (various years)*

Table V.1 shows that there was a continuous reduction in lending rate from 19 per cent in 1991-92 to 7.50 percent in 2010-11. The details of interest rate reduction at different periods are detailed below:

**1992-93**

- i) The lending rate structure was rationalized into four categories from the earlier six categories, of which one was a minimum rate.

- ii) The minimum lending rate (MLR) for credit limit of over Rs. 2 lakh was reduced from 20 per cent to 19 per cent effective from March 2, 1992, 18 per cent effective from October 9, 1992 and further to 17 per cent effective from March 1, 1993.

#### **1993-94**

- i) Effective from April 8, 1993 the then existing four categories of lending rates were reduced to three categories.
- ii) MLR was further reduced to 16 per cent effective from June 24, 1993 and to 15 per cent effective from September 2, 1993.
- iii) MLR on term loan of 3 years and above was lowered from 15 per cent to 14 per cent effective from March 1, 1994.
- iv) The fixed interest rate on term loans over Rs. 25,000 and up to Rs.2 lakh was reduced from 15 per cent to 14 per cent effective from March 1, 1994.

#### **1994-95**

- i) Effective from October 18, 1994 MLR for credit limits of over Rs.2 lakh was abolished and banks were free to fix the lending rate for such credit limits.
- ii) Effective from October 18, 1994 the lending rate for credit limits of over Rs. 25,000 and up to Rs.2 lakh for all advances including term loans was fixed at 13.5 per cent.
- iii) The stipulation of effective interest rate on bill discounting of over Rs. 2 lakh which was at one percentage point below the lending rate under this category was withdrawn from October 18, 1994.

#### **1995-96**

- i) Effective from June 21, 1995, Primary (Urban) co-operative banks' lending rates for all categories of loans were freed subject to MLR of 13 per cent.

- ii) In the context of the flexible lending rates effective from October 1, 1995, banks were allowed to fix their own interest rate on advances of over Rs.2 lakh against domestic term deposits and deposits under NRE scheme.
- iii) With a view to discourage excessive use of bank credit to finance imports, effective from October 31, 1995, outstanding under the import credit limits were subject to a 15 per cent interest rate surcharge which was further raised to 25 per cent from February 8, 1996.

### **1996-97**

- i) In the context of developments in the foreign exchange market and the overall monetary and credit situation, the interest rate surcharge on import finance was withdrawn effective from July 23, 1996.
- ii) In the context of the need for ensuring viability of RRBs and providing greater maneuverability and ensuring the flow of adequate and sustainable credit to the rural sector, the lending rates of RRBs were freed, effective from August 26, 1996.
- iii) In order to ensure that the actual lending rates charged by banks are not sharply higher than their respective PLRs, as also to impart transparency in lending rate structure and make the PLR credible, on October 19, 1996 banks were advised to announce, along with the PLR the maximum spread over the PLR for all advances other than consumer credit, with the approval of their boards.
- iv) With a view to encourage borrowers to switch over to Loan Delivery System, banks were permitted on February 12, 1997 to prescribe separate PLRs for 'loan component' and 'cash credit component' and separate spreads over the respective PLRs with approval of their respective Boards.

### **1997-98**

- i) In view of the recent movements in the interest rates effective from October 22, 1997, interest rates for credit limits over Rs.25,000 and up to Rs.2 lakh was

stipulated at 'not exceeding 13.5 per cent per annum' instead of the earlier fixed rate of 13.5 per cent per annum.

- ii) On October 22, 1997, banks were allowed to fix prime term lending rates (PTLR) on term loans of 3 years and above with approval of their Boards.
- iii) To enable larger flow of resources to the housing sector, banks were allowed to charge interest at different rates provided these rates were below PLR as appropriate, in respect of finance to housing finance intermediary agencies.
- iv) Effective from October 22, 1997 the multiple prescriptions of lending rates linked to loans against FCNR (B) / NR (NR) deposits were dispensed with and banks were given the freedom in relation to uses and rates as available to them in case of advances in general.

#### **1998-99**

- i) Banks were provided flexibility in regard to certain aspects pertaining to lending rates. In order to facilitate the flow of credit to small borrowers (up to Rs. 2 lakh), it was proposed that the interest rates on loans up to Rs. 2 lakh were not to exceed the PLR of the concerned bank, instead of a specific uniform rate for all banks.

#### **1999-2000**

- i) Banks were allowed to operate different PLRs for different maturities instead of the existing two PLRs (one for the short-term and the other for the long-term loans)
- ii) Banks were permitted to offer fixed rate term loans subject to conformity to ALM guidelines.
- iii) It was decided that in cases where deposit rates are equal to or more than PLR (Prime Lending Rate) or less than one percentage point below PLR, the banks would have freedom to charge suitable rates of interest on advances against domestic /NRE term deposits without reference to the ceiling of PLR.

- iv) The Reserve Bank advised that the interest rate on advances for fixed rate loans would be available to banks for all term loans ( repayable within a period of not less than three years) and for all purposes including small loans up to Rs. 2 lakh subject to conformity with ALM guidelines.
- v) It was decided to permit banks to charge interest at suitable rates in case of advance up to Rs. 2 lakh against third party deposits as in the case of advances to depositors against their own deposits.

### **2000- 01**

There was no relevant policy announcement during 2000-01.

### **2001-02**

- i) Banks provided freedom to price loans of Rs. 2 lakh and above to exporters or other credit worthy borrowers including public enterprises at below PLR rates, based on an objective and transparent loan policy, with the approval of their boards. For loans up to Rs 2 lakh, the ceiling rate continues to be the PLR.
- ii) The Reserve Bank reduced the minimum lending rate (MLR) of urban co-operative banks (UCBs) from 13 per cent to 12 per cent, effective from March 2, 2002. The decision was taken in the wake of representations from UCBs which felt that such a reduction would help them offer competitive rates to their borrowers.

### **2002-03**

- i) Collateralized lending facility (CLF) to be phased out with effect from the fortnight beginning October 5, 2002. CLF could be reintroduced for a temporary period in future, if considered necessary in the light of changes in monetary conditions.
- ii) Banks to report to the Reserve Bank the minimum and maximum lending rates to exporters, with effect from fortnight beginning June 15, 2002 for placing in public domain.

- iii) Co-operative banks free to determine the lending rates with the withdrawal of MLR concept. Co-operative banks to publish the minimum and maximum lending rates and display the same in every branch.

#### **2003-04**

- i) In order to enhance transparency in pricing of the loan products by banks as also to ensure that the prime lending rate (PLR) truly reflects the actual costs, banks were advised to take into account their
  - i) Actual cost of funds
  - ii) Operating expenses and
  - iii) A minimum margin to cover regulatory requirement of provisioning/ capital charge and profit margin, while arriving at the benchmark PLR. The benchmark PLR to continue to be the ceiling rate for credit limit up to Rs. 2 lakh.
- ii) The lending rate was restructured in respect of the undisbursed amounts of RIDF IV to VII with effect from October 1, 2003, in terms of which the state Governments would be required to pay 9 per cent on loans and the banks would be paid 8 per cent on their contribution.
- iii) Banks were allowed to determine rates of interest on loans and advances: i) for purchase of consumer durables, ii) to individuals against shares and debentures/bonds and iii) other non-priority sector personal loans without reference to PLR and regardless of the size of loan subject to the transparent policy.
- iv) The lending rate of interest on the undisbursed amounts of RIDF IV to IX were restructured with effect from November 1, 2003 in terms of which banks will be paid interest at 6 per cent per annum in respect of the undisbursed amount of RIDF IV to VII uniformly and at varying rates of interest between the Bank Rate and the Bank Rate minus 3 percentage points in respect of RIDF VIII and IX. The state Governments will be required to pay interest at 7 per cent per annum in respect of RIDF IV to VII uniformly and at Bank Rate plus 0.5 percentage points in respect of RIDF VIII and IX.

### **2004-05**

There was no relevant policy announcement during 2004-05.

### **2005-06**

- i) Indian Bank's Association (IBA) asked to review the benchmark prime lending rate (BPLR) system and issue transparent guidelines for appropriate pricing of credit.

### **2006-09**

There were no relevant policy announcements from 2006 to 2009.

### **2009-10**

- i) The benchmark PLR was fixed in the range of 11 to 12 per cent during the year.

### **2010-11**

- i) The BPLR was decided in between 7.5 and 8 per cent. <sup>(4)</sup>

## **5.2. DEPOSIT RATE**

For long, the Indian financial system has been characterized by an administered structure of interest rates. This was aimed at directing implicit subsidy to certain sectors, enabling them to obtain funds at concessionary rates of interest. Concessionary rates provided to some sectors were compensated by higher rates charged to other borrowers.

The regulation of lending rate, led to the regulation of deposit rates mainly to keep the cost of funds to banks in reasonable proportion to the rates at which they could lend. The reform of the interest rate structure has, therefore, constituted an integral part of the financial sector reform. We now have, only one administered rate on the deposit side, i.e. the maximum rate, which applies to term deposits of maturity up to one year.

The deposit rates of banks on savings deposits and fixed deposits of various maturities are fixed by the RBI and the deposit rates on post office savings deposits and fixed deposits are fixed by the Government. The interest rates on government bonds (securities) are also administered rates.

Although these financial assets have more or less tax advantages and have safety and liquidity, they are different in interest rates. The reason for relatively higher interest rates on small savings is that the government has deliberately decided to offer relatively more attractive rates on these assets in order to channelise household savings to the exchequer.

The changes in the deposit rates in the post-reform period are as follows:

**Table: V.2**  
**Deposit Rate during the period from 1991-92 to 2010-11**

Year	Deposit rate
1991-92	12-13
1992-93	11
1993-94	10
1994-95	11
1995-96	12-13
1996-97	11-13
1997-98	10.50-12.00
1998-99	9.00-11.50
1999-00	8.50-10.50
2000-01	8.50-10.00
2001-02	7.5-8.5
2002-03	4.25-6.25
2003-04	4.0-5.50
2004-05	5.25-6.25
2005-06	6.00-7.00
2006-07	7.50-9.00
2007-08	8.25-9.00
2008-09	7.75-8.75
2009-10	6.50-8.00
2010-11	6.00-7.50

*Source: RBI publications (various years)*



### **1992-93**

- i) Deposit interest rates were subject to only one ceiling rate.
- ii) Banks' Maximum deposit rate was reduced from 'not exceeding 13 per cent' effective from October 9, 1992 and further to 'not exceeding 11 per cent' effective from March 1, 1993.
- iii) The interest rate on savings deposits under the NRE scheme was raised from 5 to 6 per cent with effect from October 9, 1992.

### **1993-94**

- i) The minimum maturity of a term deposit under the Non-Resident (External) Rupee (NRE) Deposit scheme was raised upwards from 46 days to 6 months effective from May 16, 1994.
- ii) Effective from July 1, 1993 interest rate on savings deposits was reduced from 6 to 5 per cent.
- iii) Effective from April 8, 1993 maximum term deposit rate under NRE scheme was reduced from 'not exceeding 13 per cent' to 'not exceeding 12 per cent', and further to 'not exceeding 11 per cent' effective from October 12, 1993 and to 'not exceeding 10 per cent', effective from May 16, 1994.
- iv) Term deposits rate was reduced to 'not exceeding 10 per cent' effective from September 2, 1993.
- v) New FCNR (B) scheme was introduced effective from May 15, 1993 entailing the commercial banks to provide the exchange rate guarantee to depositors.

### **1994-95**

- i) Effective from November 1, 1994 the savings deposits rate for deposits including under NRE accounts was reduced to 4.5 from 5 per cent.

- ii) Effective from February 10, 1995 banks' maximum term deposits rate was increased to 'not exceeding 11 per cent' from 'not exceeding 10 per cent'.
- iii) Effective from October 18, 1994 term deposit rate for NRE accounts for maturity of 6 months to 3 years and above was reduced from 'not exceeding 10 per cent' to 'not exceeding 8 per cent'.

### **1995-96**

- i) Effective from April 18, 1995, the maximum term deposit rate of 46 days to 3 years and above was increased to 'not exceeding 12 per cent' from 'not exceeding 11 per cent' earlier.
- ii) Effective from October 1, 1995, banks were permitted to fix their own interest rates on domestic term deposits with a maturity of over two years.
- iii) With a view to maintain the differential between the interest rates on domestic term deposits and NRE term deposits, the maximum term deposit rate for NRE accounts of maturity of 6 months to 3 years and above was raised from 8 per cent to 10 per cent effective from October 1, 1995.
- iv) With a view to bring about a better alignment of the maturity structure of domestic term deposits and NRE term deposits, the interest rates on NRE term deposits of maturity of 6 months to 3 years and above was increased to 12 per cent effective from October 31, 1995.

### **1996-97**

- i) With a view to bring about a better alignment of the maturity structure of NRE term deposits with that on domestic term deposits, interest rates on NRE term deposits of over two years were freed effective from April 4, 1996.
- ii) With a view to provide greater flexibility in determining term deposit rates, effective from July 2, 1996, banks were given freedom to fix their own interest rates on

domestic term deposit with a maturity of over one year. Further, to provide some outlet for management of short-term surplus funds owing to the developments in the money market and the progressive move from the cash credit system to a loan system, the minimum period of term deposits was reduced from 46 days to 30 days and the interest rate on domestic term deposits of 30 days and up to one year was prescribed at 'not exceeding 11 per cent per annum.'

- iii) Effective from October 21, 1996, the maximum interest rate on domestic term deposits of banks of maturity between 30 days and one year was reduced to 'not exceeding 10 per cent per annum from 11 per cent earlier.

### **1997-98**

- i) Effective from April 1, 1997 banks were advised that on premature withdrawal of term deposits, the interest should be paid at the rate as applicable to the period for which the deposit remained with bank or at the contracted rate, whichever is lower, less one per cent penalty for premature withdrawal.
- ii) Effective from April 16, 1997, the interest rate on domestic term deposits of banks for maturity of 30 days and up to one year was changed from 'not exceeding 10 per cent' to 'not exceeding Bank Rate minus two percentage points per annum.' With Bank Rate at 11 per cent, this meant a rate 'not exceeding 9 per cent per annum'.
- iii) Effective from April 16, 1997, banks were free to determine interest rates on FCNR (B) deposits subject to a ceiling prescribed by the Reserve Bank from time to time. However, the minimum maturity period of such deposits should not be less than six months.
- iv) With a view to bring about a better alignment of the interest rate structure of term deposits under NRE Accounts with that on domestic term deposits, effective from April 16, 1997,

- v) The interest rates on term deposits under NRE accounts of over one year were freed, and
- vi) The interest rate offered under NRE term deposits of 6 months and up to one year was prescribed at 'not exceeding Bank Rate minus two percentage point' which worked out to 'not exceeding 9 per cent per annum'. It was further reduced to 'not exceeding 8 per cent per annum' effective from June 26, 1997.
- vii) Following a one percentage point cut in the Bank Rate on June 25, 1997 the effective ceiling rate was set at 8 per cent for term deposits of maturity up to one year.
- viii) Effective from September 13, 1997, banks were free to fix their own interest rates on NRE term deposits of 6 months and over with prior approval of their Boards.
- ix) With a view to provide further flexibility to banks, effective from October 22, 1997, banks have been allowed to offer interest rates on FCNR (B) deposits at rates not more than the LIBOR prevailing on the last working day of the previous week for the relevant maturity and currency. Accordingly, banks were allowed to offer either fixed or floating rate of interest.
- x) In order to give full freedom to banks to determine the interest rates on term deposits effective from October 22, 1997, banks were allowed to fix their own interest rates on term deposits of 30 days and over.

### **1998-99**

- i) Banks were provided greater flexibility in regard to certain aspects pertaining to deposit rates:
  - a. The minimum period of maturity of term deposits was reduced from 30 days to 15 days.
  - b. Banks were permitted to determine their own penal interest rates for premature withdrawal of domestic term deposits and NRE deposits as in the case of FCNR

- (B) deposits. This would apply in respect of fresh deposits and renewal of existing deposits. Banks would ensure that the depositors are aware of the applicable penal rate along with the deposit rate.
- c. The restriction on banks that they must offer the same rate on deposits of the same maturity irrespective of the size of such deposits was removed in respect of deposits of Rs. 15 lakh and above and bank boards were allowed to lay down policy in this regard, and
  - d. All advances against term deposits would be at an interest rate equal to PLR or less.
- ii) Taking into account the problems related to short-term external liabilities and large unhedged positions of corporate in some East Asian countries and to encourage the banks to mobilize long-term non- resident deposits,
  - iii) The interest rate ceiling on FCNR (B) deposits of one year and above was increased by 50 basis points and that on such deposits below one year was reduced by 25 basis points; and
  - iv) Banks were permitted to fix their own overdue interest rates in respect of FCNR (B) and NRE deposits, subject to these deposits being renewed.

### **1999-2000**

- i) It was decided that the Boards of Directors of banks could delegate necessary powers to Asset Liability Management Committee for fixing interest rates on deposits.
- ii) Banks have been allowed to pay interest at their discretion, at the time of conversion of NRE account into RFC account, even if the same has not run for a minimum maturity of six months provided that the rate of interest does not exceed the rate payable on savings deposits held under RFC account scheme and request for such conversion is received immediately on return of the NRE account holder to India.

### **2000-01**

- i) The Reserve Bank reduced the saving deposit rate of scheduled commercial banks from 4.5 to 4 per cent, effective from April 1, 2000.
- ii) It was decided to permit banks to offer, at their discretion, differential rates of interest also on NRE/ FCNR (B) term deposits on size group basis. For NRE term deposits banks were allowed to offer differential rates of interest on single term deposit of Rs.15 lakh and above as in the case of domestic deposits. For FCNR (B) deposits, it was decided to allow banks to have discretion to decide currency-wise minimum eligible quantum qualifying for such differential rates of interest. The interest rates so offered were, however, subject to the overall ceiling prescribed under the scheme. In order to make the market more 'on line', it was decided to give the banks the options to choose at their discretion, the current swap rates while offering FCNR (B) deposits.
- iii) Selected All India Financial Institutions (AIFIs) were given flexibility in the matter of fixing interest rates on term deposits.

### **2001-02**

- i) Banks permitted to formulate fixed deposits schemes for senior citizens at higher and fixed rate of interest as compared to normal deposits of any size.
- ii) Ceiling interest rate on FCNR (B) deposits revised downwards to LIBOR/SWAP rates.
- iii) In view of the market conditions and changes in other interest rates in the system, the maximum rate of interest that NBFCs can pay on their public deposits was reduced, effective from November 1, 2001 from 14 per cent to 12.5 per cent per annum.

### **2002-03**

- i) All banks were encouraged to put a flexible interest rate system on deposits (with a fixed rate option for depositors) in practice as early as possible. Banks to consider

paying the depositors at the contracted rate for the period of deposit already run and waive the penalty for premature withdrawal if the same deposit is renewed at the variable rate.

- ii) Banks to provide information to depositors and the Reserve Bank on:
  - a. Deposit rates for various maturities and effective annualized return to the depositors and
  - b. Maximum and minimum interest rates charged to their borrowers. The Reserve Bank to place the above information in public domain.
  - c. Ceiling interest rates on FCNR (B) deposits revised downwards from LIBOR/SWAP rates of corresponding maturities to LIBOR/SWAP minus 25 basis points.
- iii) The interest rate on savings account offered by banks was reduced to 3.5 per cent per annum from 4 per cent per annum with effect from March 1, 2003.

#### **2003-04**

- i) The minimum maturity period of fresh NRE deposits was raised to one year in line with FCNR (B) deposits.
- ii) All banks were advised that until further notice, interest rates on fresh repatriable non-resident external (NRE) deposits for one to three years contracted effective from July 17, 2003 should not exceed 250 basis points above the LIBOR/SWAP rates for the US dollar of corresponding maturity.
- iii) The interest rate payable on deposits to be made by contributing banks in RIDF-IX would be linked to the shortfall in lending to agriculture and at varying rates revising the prevailing Bank Rate plus/minus 1.5 per cent.

- iv) The interest rate on fresh repatriable NRE deposits for one to three years, contracted effective close of business on September 15, 2003 not to exceed 100 basis points above the LIBOR/SWAP rates for the US dollar of corresponding maturity.
- v) The deposit interest rate was restructured in respect of the undisbursed amounts of RIDF IV to VII with effect from October 1, 2003, in terms of which the state Governments would be required to pay 9 per cent on loans and the banks would be paid 8 per cent on their contribution.
- vi) The interest rate on fresh repatriable NRE deposits for one to three years, contracted effective close of business on October 18, 2003 not to exceed 25 basis points above the LIBOR/SWAP rates for the US dollar of corresponding maturity.
- vii) The interest rate on the deposits of foreign banks placed with the SIDBI towards their priority sector short fall was fixed at the Bank Rate effective from November 3, 2003.
- viii) The deposit rate of interest on the undisbursed amounts of RIDF IV to IX were restructured with effect from November 1, 2003 in terms of which banks will be paid interest at 6 per cent per annum in respect of the undisbursed amounts of RIDF IV to VII uniformly and at varying rates of interest between the Bank Rate and the Bank Rate minus 3 percentage points in respect of RIDF VIII and IX. The state Governments will be required to pay interest at 7 per cent per annum in respect of RIDF IV to VII uniformly and at Bank plus 0.5 percentage points in respect of RIDF VIII and IX.

#### **2004-05**

- i) In order to provide consistency in the interest rate offered to non-resident Indians (NRIs) the ceiling on interest rates on NRE deposits for one to three years maturity contracted effective close of business on April 17, 2004 was capped at LIBOR/SWAP rates for US dollar of corresponding maturity. Similarly, the interest rate on NRE saving deposits was capped at LIBOR/SWAP rates, instead of domestic savings deposit rate.



- ii) Entities other than authorized dealers (Ads) or authorized banks were prohibited from accepting deposits from NRIs either through fresh remittances or by debit to their NRE/FCNR (B) accounts.
- iii) Holding of the existing deposits would be permitted and renewed on repatriation or non-repatriation basis and the interest earned on such deposits would continue to be repatriable.
- iv) Ceiling on interest rates on NRE deposits raised by 50 basis points above the LIBOR/SWAP rates for the US dollar of corresponding maturities.
- v) Banks allowed fixing the ceiling on interest rates on FCNR (B) deposits on a monthly basis for the following month based on rates prevailing as on the last working day of the preceding month.
- vi) Banks allowed reducing the minimum tenor of retail domestic term deposits (under Rs. 15 lakh) from 15 days to 7 days. Banks have the freedom to offer differential rates of interest on wholesale domestic term deposits of Rs. 15 lakh and above.
- vii) Banks allowed reducing the minimum tenor of retail domestic/NRO term deposits (under Rs. 15 lakh) at their discretion from 15 days to 7 days. Similar guidelines were issued to all state and District central Co-operative banks.

#### **2005-06**

- i) The ceiling on interest rates on non-resident (external) rupee deposits for one to three years maturity raised by 25 basis points for US dollar of corresponding maturity with immediate effect.
- ii) The ceiling on interest rates on FCNR (B) deposits of all maturities raised by 25 basis points to 'not exceeding LIBOR/SWAP rate' from '25 basis points below the LIBOR/SWAP rates'.

- iii) The ceiling on interest rates on non- resident (External) rupee deposits for one to three years maturity raised by 25 basis points to LIBOR/SWAP rates plus 100 basis points for US dollar of corresponding maturity with immediate effect.

#### **2006-07**

- i) Ceiling interest rate on NR (E) RA deposits raised by 25 basis points to 100 basis points above LIBOR/SWAP rates for US dollar of corresponding maturity.
- ii) Ceiling interest rates on FCNR (B) and NR (E) RA deposits reduced by 25 basis points and 50 basis points, respectively to LIBOR/SWAP rates minus 25 basis points and LIBOR/SWAP rates for US dollar of corresponding maturity plus 50 basis points.
- iii) Ceiling interest rate on FCNR (B) deposits reduced by 50 basis points to LIBOR/SWAP rates minus 75 basis points for respective currency/maturities.
- iv) Ceiling interest rate on NR (E) RA deposits reduced by 50 basis points to LIBOR/SWAP rates for US dollar of corresponding maturity.

#### **2007-08**

- i) Ceiling interest rate on FCNR (B) deposits reduced by 50 basis points to LIBOR/SWAP rates minus 75 basis points for respective currency/ maturities.
- ii) Ceiling interest rate on NR (E) RA deposits reduced by 50 basis points to LIBOR/SWAP rates for US dollar of corresponding maturity.

#### **2008-09**

- i) The interest rate ceiling on FCNR (B) deposits of all maturities was increased, with immediate effect, by 50 basis points, i.e. to LIBOR/SWAP rates minus 25 basis points.
- ii) The interest rate ceiling on NR (E) RA for one to three years maturity was increased, with immediate effect, by 50 basis points, i.e. to LIBOR/SWAP rates plus 50 basis points.

- iii) The interest rate ceiling on FCNR (B) deposits of all maturities was increased with immediate effect by 50 basis points, i.e. to LIBOR/SWAP rates plus 25 basis points.
- iv) The interest rate ceiling on NR (E) RA for one to three years maturity was increased, with immediate effect, by 50 basis points, i.e. to LIBOR/SWAP rates plus 100 basis points.
- v) The interest rate ceiling on FCNR (B) deposits was increased by a further 75 basis points, i.e. to LIBOR/SWAP rates plus 100 basis points with immediate effect.
- vi) The interest rate ceiling on NR (E) RA deposits was increased by a further 75 basis points, i.e. to LIBOR/SWAP rates plus 175 basis points with immediate effect.

#### **2009-10**

- i) The average deposit rate was observed as between 6.5 per cent and 8 per cent during the year 2009-10.

#### **2010-11**

- i) The average deposit rate was found as between 6 per cent and 7.5 per cent in the current financial year. <sup>(5)</sup>

### **5.3. LIQUIDITY ADJUSTMENT FACILITY (LAF)**

The Liquidity Adjustment Facility (LAF) which was introduced on June 5, 2000 is playing a central role in RBI's liquidity management operations. The concepts of discretionary (DL) and autonomous (AL) liquidity measures make LAF a powerful instrument of monetary policy. The two-way causation between discretionary liquidity and the call money rate, which is a prime representative indicator of availability of liquidity in the system, clearly supports the use of DL and AL in the framework of the multiple indicator approach.

The primary concepts of the AL and DL measures were developed by Borio in 1997. In the Indian case, the RBI prefers the term ‘discretionary liquidity’ to indicate that the measures relating to its constituents are ‘discretionary’ and not ‘rule bound’. Autonomous liquidity (AL) comprises central bank balance sheet flows that stem from regular central banking functions as currency authority and banker to banks and the Government.

In India, DL would sum up the quantum effects of monetary policy action. Discretionary liquidity (DL) is the sum of balance sheet flows that arise out of the central banks money market operations. It will be noted that net liquidity (NL) the sum of AL and DL is simply the change in bank reserves. In case central banks can, and often do, predict AL and the demand for bank reserves, they could modulate DL to influence liquidity conditions. In case the central bank desired to maintain the liquidity position unchanged, it could offset AL with DL. Alternately, interest rates would change to clear the market for bank reserves.

LAF was conceived based on the recommendations of Narasimham committee. It had recommended that RBI’s support to the market should be through Liquidity Adjustment Facility only. Under this scheme, (1) repo auctions (for absorption of liquidity) and (2) reverse repo auctions (for injection of liquidity) are conducted on a daily basis (except Saturdays). With effect from October 29, 2004, nomenclature of repo and reverse repo has been interchanged as per international usage. Accordingly, effective from October 29, 2004, repo indicates injection of liquidity and reverse repo indicates absorption of liquidity.

In simple terms, it is a borrowing or lending by RBI against the collateral of Government securities, for liquidity management. The committee also stated that RBI should periodically, if necessary on daily basis reset its repo or reverse repo rates and provide a corridor for market play. Accordingly, LAF was introduced during June 2000 and has been proved successful. Before LAF, ILAF (interim Liquidity Adjustment

Facility) served as a transitional measure for providing reasonable access to liquid funds at set rates of interest which was subsequently replaced by LAF.

Simultaneously, the earlier Fixed Rate Auction system, ACLF for banks along with level II liquidity support for PDS were also replaced by LAF. The significant characteristic of LAF is that it is based on variable interest rate daily auction system. Only banks and PDs maintaining SGL and current accounts with RBI at Mumbai are eligible to participate. The minimum amount is Rs. 1 crore and multiples of Rs.1 crore. Multiple bids are also permitted.

Liquidity is injected by the RBI through Collateralized Lending Facility (CLF) to banks, export credit finance to banks and liquidity support to Primary Dealers (PDs). All these facilities are available subject to quantitative limits for specified duration and the Bank Rate.

LAF will emerge still stronger as all other corridors are being restricted. It already became a powerful instrument in the hands of the central bank for liquidity and interest rate maneuvering. The main problem being faced by the fund managers in this regard is certainty of acceptance of bids. However, it is not the intention of the RBI to supply any amount of liquidity under LAF and they are of the view that elastic supply of liquidity is fraught with danger. Otherwise, LAF becomes a regular source of finance from apex bank.

Thus it provides a mechanism by which liquidity would be injected at various interest rates and absorbed when necessary at the fixed repo rate, so that the volatility in the money market is minimized and the market operates within a reasonable range.

Now, we can have a look into the LAF changes during the period of our present study.

### **1999-2000**

- i) The Reserve Bank announced introduction of an Interim Liquidity Adjustment Facility (ILAF) through repos and lending against collateral of Government of India securities.

It provided a mechanism by which liquidity would be injected at various interest rates, and absorbed when necessary at the fixed repo rate. The features of this facility were:

1. The general refinance facility was withdrawn and replaced by a collateralized lending facility (CLF) up to 0.25 per cent of the fortnightly average outstanding aggregate deposits in 1997-98 which was available for two weeks at the Bank Rate.

An additional collateralized lending facility (ACLF) for an equivalent amount of CLF was made available at the Bank Rate plus 2 percentage points. CLF and ACLKF availed for periods beyond two weeks were subject to a penal rate of two per cent for an additional period of two weeks. There was a cooling period of two weeks thereafter. In order to facilitate systematic adjustment in liquidity, the restriction on participation in money market (during the period that such facilities were availed of) was withdrawn.

2. Scheduled commercial banks were made eligible for export credit refinance facility (ERF) at the Bank Rate i.e. 8 per cent per annum effective from April 1, 1999.
3. Liquidity support under Level 1 against collateral of government securities and Treasury bills, based on bidding commitment and other parameters was made available to PDs at the Bank Rate for a period of 90 days and the amounts remained constant throughout the year.

Liquidity support under Level 2 against collateral of government securities and Treasury bills was also provided to PDs for periods not exceeding two weeks at a time at the Bank Rate plus 2 percentage points.

- ii) It was observed that on account of provision of cooling period at the end of four weeks of availing CLF/ACLF, banks were not freely availing these facilities even during those periods when call rates were ruling high. Hence with a view to make the facilities more flexible and effective in meeting the liquidity requirements of banks and the system, the stipulation of cooling period was removed. Accordingly, banks

were provided CLF and ACLF for the first block of two weeks at the Bank Rate and Bank Rate plus two percentage points, respectively. An additional interest rate of two percentage points over the rates applicable for the first block was charged thereafter. The period of payment of the amount drawn under CLF/ACLF was not to exceed 90 days from the date of draw.

- iii) With a view to enable banks to meet any unanticipated additional demand for liquidity in the context of the century date change, a 'Special liquidity Support' for the period December 1, 1999 to January 31, 2000 was introduced, whereby banks were made eligible to avail of liquidity to the extent of their excess holdings of Central Government dated securities/ Treasury Bills over the required SLR. The rate of interest on this facility was 2.5 percentage points over the Bank Rate.

#### **2000-01**

- i) In order to facilitate the movement of short-term money market rate within a corridor, impart greater stability and facilitate the emergence of a short-term rupee yield curve, it was announced that a full-fledged Liquidity Adjustment Facility (LAF) operated through repos and reverse repos would be progressively introduced with effect from June 5, 2000. In the first stage, it was proposed that the Additional collateralized Lending Facility (ACLF) would be replaced by variable rate repo auctions with same day settlement; in the second stage, the collateralized Lending Facility (CLF) and Level-1 liquidity support would be replaced by variable rate repo auctions (some minimum support to PDs would be continued but at interest rate linked to variable rate in the daily repo auctions as determined by the Reserve Bank), and in the third stage, with full computerization of Public Debt Office and introduction of Real Time Gross Settlement System (RTGS), repo operations through electronic transfers would be introduced and in the final stage LAF would possibly be operated at different times of the same day.

#### **2001-02**

- i) The liquidity support available from the Reserve Bank split into two parts: a) Normal facility (constituting 2/3<sup>rd</sup> of the total limit of outstanding liquidity facilities) at the

Bank Rate and b) Backstop facility (constituting 1/3<sup>rd</sup> of the limit) at variable daily rate linked to cut off rates emerging in liquidity adjustment facility (LAF) auctions and in their absence to NSE-MIBOR as decided by the Reserve Bank depending upon the situation.

- ii) LAF operating procedures changed as follows (effective from May 8,2001): a) minimum bid size for LAF reduced to Rs.5 crore from the existing Rs.10 crore ; b) Option to switch over to fixed rate repos on overnight basis as and when felt necessary; c) Discretion to introduce longer-term repos up to 14 days; d) LAF auction timing advanced by 30 minutes and results by 12 noon; e) Data on SCBs aggregate cumulative cash balances during the fortnight to be disseminated with a lag of two days; and f) Multiple price auctions (in place of existing uniform price auction) to be introduced on an experimental basis during May 2001.
- iii) With effect from the fortnight beginning May 19, 2001, the collateralized Lending Facility (CLF) was provided in 2 blocks. Block 1 for the first 2 weeks and block 11 from 3<sup>rd</sup> week to 90 days with rate of interest at the Bank Rate and the Bank Rate plus 2 percentage points, respectively, for normal facilities and at daily variable rate (DVR) as announced by the Reserve Bank for back-stop facilities. Penal rate was applicable beyond 90 days till the date of repayment.
- iv) Multiple price auctions for LAF were made to continue till further announcement.

### **2002-03**

- i) Collateralized lending facility (CLF) was phased out with effect from the fortnight beginning October 5, 2002.
- ii) Apportionment of normal and back-stop facilities changed to one-half each (50:50) from the existing ratio of two-thirds to one-third, effective from the fortnight beginning November 16, 2002.

### **2003-04**

- i) The multiplicity of rates at which liquidity is absorbed/ injected under backstop facility was rationalized as under :
  1. The backstop interest rate will be at the reverse repo cut-off rate at the regular LAF auctions on that day;



2. In the case of no reverse repo in the LAF auctions, back stop will be at 2 percentage points above the repo cut-off rate ; and
  3. On days when no repo/reverse repo bids are received/ accepted, backstop rate will be decided by the Reserve Bank on an ad hoc basis.
- ii) The proportion of 'normal' and 'backstop' standing facilities changed to one - third to two -thirds (33:67) effective fortnight beginning December 27, 2003.
  - iii) The revised LAF scheme was activated effective from March 29, 2004. Normal facility and backstop facility were merged into a single facility to be made available at a single rate.

#### **2004-06**

There were changes in the repo and reverse repo rates under the LAF.

#### **2006-07**

- i) Second LAF, which was introduced from November 28, 2005, was withdrawn effective from August 6, 2007.

#### **2007-08**

- i) The second LAF which was introduced from November 28, 2005 was withdrawn with effect from August 6, 2007.
- ii) Second LAF was re-introduced on Reporting Fridays with effect from August 1, 2008.

#### **2008-09**

- i) Scheduled banks were allowed to avail additional liquidity support under the LAF to the extent of up to one per cent of their NDTL and seek waiver of penal interest.
- ii) The second LAF (SLAF) which was introduced with effect from August 1, 2008 on reporting Fridays was conducted on a daily basis with effect from September 17, 2008.
- iii) The standing liquidity facilities were made available at the revised repo rate.
- iv) The additional liquidity support exclusively for the purpose of meeting the liquidity requirements of mutual funds was extended and banks were allowed to avail liquidity support under the LAF through relaxation in the maintenance of SLR to the extent of up to 1.5 per cent of their NDTL. This relaxation in SLR is to be used exclusively for the purpose of meeting the funding requirements of NBFCs and MFs.

- v) Liquidity support under the LAF through relaxation in the maintenance of SLR to the extent of up to 1.5 per cent of their NDTL for the purpose of meeting the funding requirements of NBFCs, MMFs and HFCs which was available up to March 31, 2009 was extended to June 30, 2009.

#### **2009-10**

- i) Repo rate under the LAF was reduced by 25 basis points from 5 per cent to 4.75 per cent and Reverse repo rate under the LAF was reduced by 25 basis points from 3.5 per cent to 3.25 per cent with effect from April 21, 2009.
- ii) Reverse repo rate was kept unchanged at 3.25 per cent and Repo rate was kept unchanged at 4.75 per cent on February 27, 2010
- iii) Repo rate was increased by 25 basis points to 5 per cent and Reverse repo was increased to 3.5 per cent on March 19, 2010.
- iv) Extension of the special refinances facility and term repo facility up to March 31, 2010.

#### **2010-11**

- i) Effective from April 20, 2010, Repo rate was increased to 5.25 per cent from 5 per cent and the Reverse repo rate was increased to 3.75 per cent.
- ii) It was kept unchanged at 5.25 per cent on April 24, 2010.
- iii) The Repo rate was increased by 25 basis points to 5.5 per cent effective from July 2, 2010 and the Reverse repo rate was increased to 4 per cent.
- iv) Repo rate under LAF was further increased to 5.75 per cent and the Reverse repo rate was further increased by 50 basis points to 4.5 per cent, effective from July 27, 2010.<sup>(6)</sup>

## **5.4. CALL MONEY MARKET**

The call money market deals with loans of short duration. It mainly deals with one day loans which may or may not be renewed the next day. It refers to the market for very short period. Bill brokers and dealers in stock exchange usually borrow money at call from the commercial banks. These loans are given for a very short period of 24 hours. The loan period of call money market cannot exceed seven days under any circumstances. The call loans are generally made without any collateral securities. The call loans possess high liquidity; the borrowers are required to pay the loan as and when asked for at a very short notice. The rate at which the call loans are issued is the call Rate. The rate of interest on call loans is very low and changes several times during the course of the day. Call loans are useful to the commercial banks because these can be converted into cash at any time.

The changes in the call rates during the period (1991-2010) are given below:

### **1992-1996**

There were no policy announcements regarding call money from 1992 to 1996.

- i) With a view to facilitate a level playing field, effective from June 27, 1995, private sector mutual funds [approved by SEBI] were allowed to operate only as lenders in the call/ notice money/ bill rediscounting market .

### **1996-1997**

There was no policy announcement during 1996-1997

### **1997-1998**

- i) In April 1997, entities which are able to provide evidence to the Reserve bank of bulk lend able resources were extended the facility of routing call \ notice money transaction through all the P D S [earlier DFHI only] and the minimum size of operation per transaction was reduced from RS 20 Crore to Rs.10 crore.

- ii) ii) With a view to develop the money market and make it more efficient, a standing Advisory committee on money market [Chairman Dr Y.V Reddy Deputy Governor] was set up on April 28, 1997, to advise the Reserve Bank.
- iii) In October 1997, the minimum size of operation per transaction for entities which are able to provide evidence to the Reserve Bank of bulk lend able resources was further reduced to Rs. 5 crore from Rs.10 crore earlier.

**Table: V.3**  
**Call Money Rate during the period 1991-92 to 2010-11**

Year	Call money market rate
1991-92	19.57
1992-93	14.42
1993-94	6.99
1994-95	9.40
1995-96	17.73
1996-97	7.84
1997-98	8.69
1998-99	7.83
1999-00	8.87
2000-01	9.15
2001-02	7.16
2002-03	5.89
2003-04	4.62
2004-05	4.65
2005-06	5.60
2006-07	7.22
2007-08	6.07
2008-09	7.06
2009-10	3.22
2010-11	3.50-5.25

*Source: RBI publications (various years)*

### **1998-99**

- i) To develop an efficient money market, the minimum size of operation per transaction by entities routing their lending through PDs in the call money market was reduced from Rs.5 crore to Rs.3 crore.

### **1999-2000**

- i) The permission granted to non-bank entities to lend in the call/ notice money market by routing their transactions through PDs was extended from end – December 1999 to end June 2000.

### **2000-01**

- i) In order to make necessary transitional provisions in respect of non –bank institutions including FIs and MFs, before the call money market is confined to only banks/ PDs it was decided to constitute a Group to suggest smooth phasing out by a planned reduction in their access to call/ notice money market.
- ii) The Technical Group Report on phasing out of non-banks from call/ notice money market was submitted. It recommended three- stage reductions in call money lending by non-bank participants (including mutual funds and insurance companies ). In the first stage the recommendation was to permit lending up to 70 per cent of their average daily lending during 2000-01 for a period of three months after which the lending limit may be reduced to 40 per cent in the second stage. In the third stage by which time clearing corporation is expected to be operationalized, their lending may be reduced to 10 per cent for a period of three months to enable them to be familiar with the operations of the clearing corporation.

### **2001-2002**

- i) Gradual phasing out of non bank participation in call money market in four stages. In stage 1, effective from May 5, 2001, lending in call / notice money market

during the reporting fortnight by any non bank entity not to exceed, on an average 85 per cent of its daily average lending during year 2000 to 2001.

### **2002-2003**

- i) The daily borrowings of state co-operative banks and District Central Co-operative banks in the call / notice money market not to exceed 2 per cent of their aggregate deposit as at the end of March of the previous financial year .
- ii) Prudential limit stipulated on the exposure of scheduled commercial banks (S C B s) in call money market in two stages :
  1. In the first stage , effective from October 5, 2002, SCBs daily lending in the call / notice money market , on a fortnightly average basis, not to exceed 50 per cent of their owned funds as at the end of March of the previous financial year; their fortnightly average borrowing not to exceed 150 per cent of their owned funds or 2 per cent of aggregate deposits as at the end of March of the previous financial year, whichever is higher. However, they will be allowed to lend and borrow a maximum of 100per cent and 250per cent respectively of their owned funds on any day during a fortnight.
  2. In the second stage ,effective fortnight beginning December 14, 2002 SCBs fortnightly average lending in the call / notice money market not to exceed 25per cent of their owned funds; fortnightly average borrowings not exceed 100% of their owned funds or 2 per cent of aggregate deposits as at the end of March of the previous financial year, whichever is higher. They will be allowed to lend and borrow a maximum of 50 per cent and 125 per cent, respectively of their owned funds on any day during a fortnight.
  3. An increased access may be allowed for a temporary period in case of mismatches in liquidity position. If the bank has a fully functional Asset Liability Management (ALM) systems to the satisfaction of the Reserve

Bank, an increased access over the stipulated norm may be permitted for a longer period.

iii) Following the recommendations of the Working Group constituted to suggest the criteria for fixing limits for transactions of primary dealers (PDs) in call/notice money market as also to suggest a roadmap for phasing them out from call/notice money market, it was decided:

1. With effect from October 5, 2002, PDs will be permitted to lend in call/notice money market up to 25 per cent of their net owned funds (NOF)
2. Access of PDs to borrow in call/notice money market would be gradually reduced in two stages: In stage 1, PDS would be allowed to borrow up to 200 per cent of their NOF as at the end – March of the preceding financial year. In stage II, PDs would be allowed to borrow up to 100 per cent of their NOF. The limits under both the stages would not be applicable for the days on which Government dated securities are issued to the market. The date of implementation of the stage 1, to be notified later, would be operational upon the finalization of uniform accounting and documentation procedures for repos, allowing rollover of repos, introduction of tripartite repos or collateralized borrowing and lending obligations and permitting repos out of 'available for sale' category. Stage II will commence one month after permitting sale of repo securities.
3. On implementation of the real-time gross settlement (RTGS) system, the above exemptions would be reviewed.

#### **2003-04**

- i) Stage II of the transition to a pure inter-bank call/notice Money Market was to be effective from the fortnight beginning June 14, 2003 wherein non-bank participants would be allowed to lend on average in a reporting fortnight, up to 75 per cent of their average daily lending in the call/notice money market during 2000-01.

- ii) With effect from fortnight beginning May 3, 2003 reporting of all call/notice money market deals on Negotiated Dealing System (NDS) would be mandatory for all NDS members. Deals done outside NDS should also be reported within 15 minutes on NDS, irrespective of the size of the deal or whether the counter party is a member of the NDS or not.
- iii) Non-bank participants were allowed to lend on average in a reporting fortnight, up to 60 per cent of their average daily lending in the call/notice money market during 2000-01 effective fortnight beginning December 27, 2003.
- iv) The exemption given to scheduled commercial banks (SCBs) from the prudential limits specified for call/notice money transactions for rupee funds raised under the Reciprocal Line Facility on November 14, 2002 to be phased out from the fortnight beginning February 7, 2004.

#### **2004-05**

- i) Non-bank participants lending in call/notice money market reduced to 45 per cent of their average daily lending during 2000-01, effective June 26, 2004.
- ii) Non-bank participants lending in call/notice money market reduced to 30 per cent of their average daily lending during 2000-01, effective the fortnight beginning January 8, 2005.

#### **2005-06**

- i) With effect from the fortnight beginning June 11, 2005 non-bank participants, except primary dealers (PDs) allowed to lend on average in a reporting fortnight, up to 10 per cent of their average daily lending in call/notice money market during 2000-01. With effect from August 6, 2005 non-bank participants, except PDs to be completely phased out from the call/notice money market.



- ii) With effect from the fortnight beginning April 30, 2005, the bench mark for fixing prudential limits on exposures to call/ notice money market in the case of scheduled commercial banks (SCBs) linked to their capital funds (sum of Tier I and Tier II capital)

**2006-09**

There were no policy requirements from 2006 to 2009.

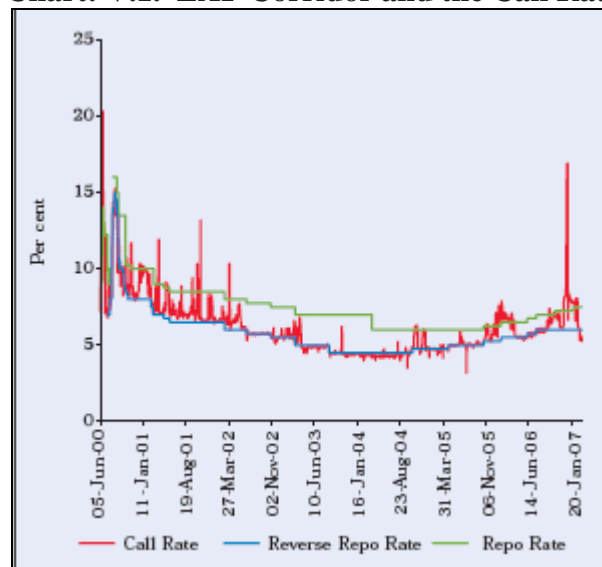
**2009-10**

The call money rate was found as 3.22 per cent during 2009-10.

**2010-11**

The call rate lies between 3.5 and 4.25 per cent in the current financial year. <sup>(7)</sup>

**Chart: V.1. LAF Corridor and the Call Rate**

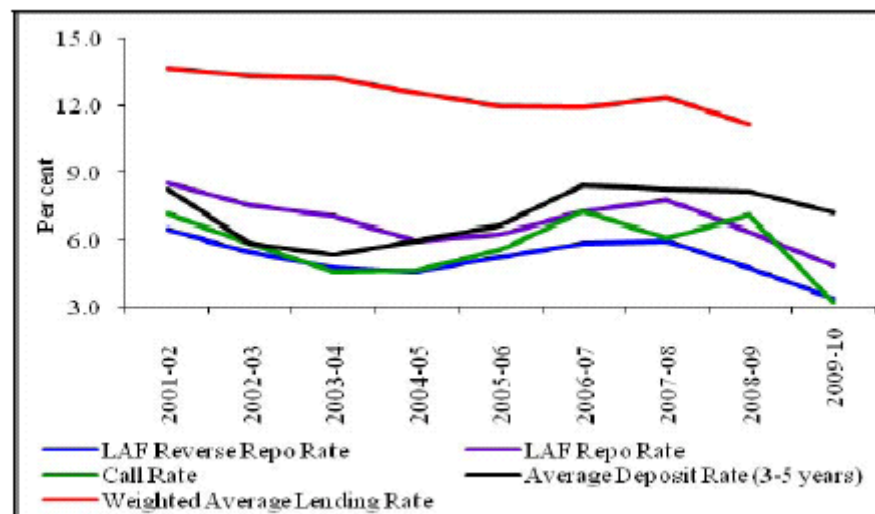


*Source: RBI Occasional paper (special edition, 2009)*

The dynamics of surplus liquidity in the recent period shows that the total surplus liquidity (comprising MSS, LAF and Government surplus) in the system increased to over Rs.1, 25,000 crore in August 2005. Reflecting such surplus conditions in the banking system, the call money rate hovered generally around the lower bound of the corridor (*i.e.*, the reverse repo rate), which (along with the repo rate) has emerged as the main instrument

of policy in the short-run (Chart: V.1.). The Bank Rate now serves the role of a signaling instrument for the medium term. Commensurate with these changes, the LAF has been further refined. Facilitated by the introduction of real time gross settlement (RTGS) system, it has now been possible to operate LAF at different times of the same day (Second LAF was introduced from November 28, 2005) providing market participants a second window to fine-tune the management of liquidity. This suggests active transaction through the Second LAF during periods of easy liquidity. <sup>(8)</sup>

**Chart: V.2. Transmission of Policy Rates to Lending Rate**



*Source: Deepak Mohanty, 2010. Implementation of Monetary Policy in India*

Notwithstanding many improvements at the short-end of the financial market spectrum, the transmission of the policy signals to banks' lending rates has been rather slow given the rigidities in the system, particularly the preference for fixed interest rate on term deposits. Against the backdrop of ample liquidity in the system more recently, as banks have reduced their deposit rates, the effective lending rates would have shown further moderation (Chart: V.2 ). <sup>(9)</sup>

## **5.5. CERTIFICATE OF DEPOSITS (CDS)**

Certificate of deposits emerged in Indian money market in 1989 with an objective of widening the range of money market instruments and to provide investors greater flexibility in the deployment of their short term simple funds.

Certificate of deposits are unsecured negotiable promissory notes issued by commercial banks and development financial institutions. When these certificates are issued by banks these are issued at a discount and the face value is payable at maturity by the issuing bank. On the other hand, certificate of deposits issued by financial institutions can be coupon bearing.

The initial guidelines stipulated that certificate of Deposits (CDs) could be issued only by scheduled commercial banks (excluding RRBs) in multiples of Rs.25 lakh subject to the minimum size of Rs. 1 crore. The maturity period of certificate of deposits ranges from 3 months to one year when issued by banks. In case of other financial institutions it ranges from one year to three years.

We can observe the changes in CDs as follows:

### **1992-93**

- i) Effective from May 2, 1992, CDs limits of banks were raised to 7 per cent (5 per cent earlier) of the fortnightly average outstanding aggregate deposits in 1989-90.
- ii) Effective from October 17, 1992, the CDs limits of banks were raised to 10per cent (7 per cent earlier) of fortnightly average outstanding aggregate deposits in 1989-90.

### **1993-94**

- i) Effective from April 17, 1993, the new limits were prescribed for each bank which were equivalent to 10 per cent of the fortnightly average outstanding aggregate deposits in 1991-92 ( instead of 1989-90 earlier)

- ii) Effective from October 16, 1993, bank-wise limits on issue of CDs were withdrawn.

### **1994-96**

There were no policy announcements from 1994 to 1996.

### **1996-97**

- i) In August 1996, it was clarified that banks were free to invest in CDs of other banks/ FIs and CDs were made freely transferable by endorsement and delivery after 30 days from the date of issue ( as against 45 days earlier)

### **1997-98**

- i) The minimum size of issue of CDs to a single investor was reduced from Rs.25 lakh to Rs.10 lakh and in multiple of Rs.5 lakh from April 26, 1997.
- ii) With a view to widen the money market, the minimum size of issue of CDs to a single investor was further reduced from Rs.10 lakh to Rs.5 lakh and in the multiple of Rs.1 lakh with effect from October 22, 1997.

### **1998-99**

- i) To develop an efficient money market, the minimum lock-in period for CDs was reduced from 30 days to 15 days effective from May 9, 1998.

### **1999-2000**

There was no policy announcement in 1999-2000.

### **2000-01**

- i) The minimum maturity of CDs was reduced from 3 months to 15 days in order to bring it at par with other instruments like CPs and term deposits.

- ii) With a view to provide flexibility and depth to the secondary market, it was decided to withdraw the restriction on transferability period for CDs issued by both banks and financial institutions.

**2001-05**

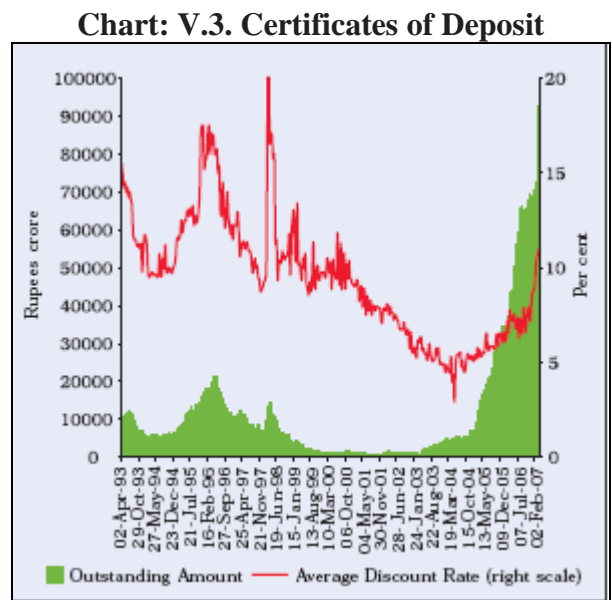
There were no policy announcements from 2001 to 2005.

**2005-06**

- i) The minimum maturity period of certificate of deposit (CDs) reduced from 15 days to 7 days with immediate effect.

**2006-09**

There were no policy announcements during 2006 to 2009. <sup>(10)</sup>



*Source: RBI Occasional paper (special edition, 2009)*

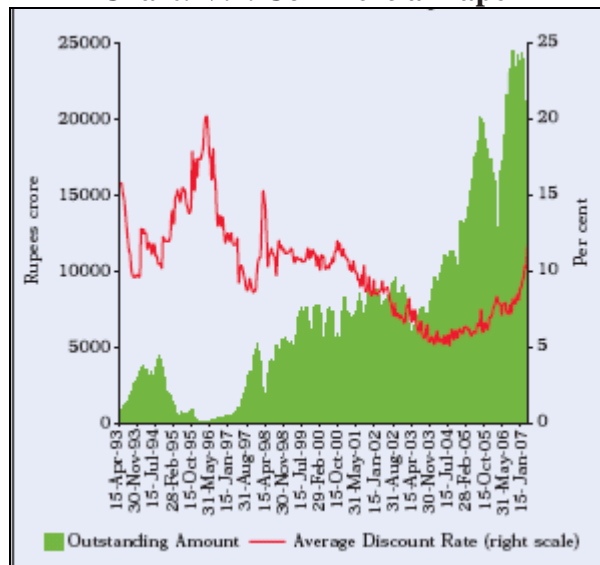
Activity in the CD market also mirrors liquidity conditions but unlike Commercial papers, the CD issuances by banks and FIs pick up during periods of tight liquidity. For instance, the average outstanding amount of CDs rose from Rs.8, 266 crore during 1992-93 to Rs.14, 045 crore during 1995-96. It further increased to Rs.21, 503 crore in June 1996 reflecting the credit pick-up. Another phase of tight liquidity during the East Asian crisis

led to increased market activity in this segment. Subsequently, the outstanding amount declined to Rs.949 crore during 2001-02, reflecting the state of easy liquidity on account of large capital inflows. The average outstanding amount of CDs increased again to Rs.64,814 crore during 2006-07 as banks continued to supplement their efforts at deposit mobilization in order to support the sustained credit demand. Interest rates on CDs softened in recent years in line with other money market instruments, although there was some hardening during 2006-07 (Chart: V.3).<sup>(11)</sup>

## 5.6. COMMERCIAL PAPER (CPs)

Commercial Paper is an important short term money market instrument that was introduced in India on the recommendation of Vaghul Working Group. Commercial paper is used as promissory note issued by a company. Commercial papers can be issued by a company whose tangible net worth is not less than Rs. 5 crore. Commercial paper may be sold either directly to investors or through agents like merchant bankers or security houses.

**Chart: V.4. Commercial Paper**



Source: RBI Occasional paper (special edition, 2009)

The issuance of CP has generally been observed to be inversely related to call money rates. Activity in the CP market reflects the state of market liquidity as its issuances

tend to raise amidst ample liquidity conditions when companies can raise funds through CPs at an effective rate of discount lower than the lending rate of banks. Banks also prefer investing in CPs during credit downswing as the CP rate works out higher than the call rate. Thus, the average outstanding amount of CPs declined from Rs.2, 280 crore during 1993-94 to Rs.442 crore during 1995-96 amidst tight liquidity but moved up to Rs.17, 285 crore during 2005-06. It increased further to Rs.21,314 crore during 2006-07. Leasing and finance companies continue to be the predominant issuers of CPs. Discount rates on CPs have firmed up in line with the increases in policy rates during 2005-06 and 2006-07 (Chart: V.4).<sup>(12)</sup>

We can have a look into the changes of CP during the period of our study.

### **1992-93**

CP was introduced in 1990. Companies with net worth of Rs.10 crore and an MPBF of Rs.25 crore could issue CPs up to a maximum limit of 20 per cent of MPBF. The initial guidelines stipulated maturity period of CPs between 91 days and 6 months could be issued in multiples of Rs.25 lakh subject to the minimum size of an issue of Rs.1 crore.

- i) In May 1992, the following relaxations were effected with regard to the issue of CPs:
  - a. The fund based working capital limit of company issuing CPs was further reduced to Rs.5 crore instead of Rs.10 crore earlier;
  - b. The ceiling of aggregate amount of CPs was raised to 75 per cent of Company's fund based working capital (from 30 per cent earlier)

### **1993-94**

- i) The changes effected from October 18, 1993, with regard to CPs' issue are as follows:
  - a. The eligibility of corporate for issue of CPs was lowered to RS.4 crore of minimum working capital limit(from Rs.5 crore earlier)as also the eligibility criteria of tangible net worth of the company was reduced from Rs.5 crore to Rs.4 crore;

- b. CPs could be issue for maturities between 3 months and less than one year (instead of the earlier stipulated of not more than 6 months);
- c. For the purpose of rating the issue of CPs, the Reserve Bank approved CARE as the approved agency, in addition to CRISIL and ICRA, effective from October 5, 1993.

#### **1994-95**

- i) To impart a measure of independence to CP as a money market instrument, the facility of the stand-by arrangement was abolished in October 1994. Thus, when CPs were issued, banks were required to effect a reduction in the cash credit limit and if at a later date, i.e. after issuance of CP, the corporate wished to have a higher cash credit limit, it would have to approach the bank for enhancement of the credit limit.

#### **1995-96**

- i) Consequent to introduction of the Loan system for Delivery of Bank Credit in April 1995, the extent of CP that could be issued was restricted to 75 per cent of the cash credit component instead of 75 per cent of the working capital (fund based) limit earlier.
- ii) In June 1996, the extent of CP that could be issued by a borrower with MPBF of Rs. 20 crore and above has been raised from 75 per cent to 100 per cent of cash credit component.

#### **1996-97**

- i) In July 1996, the Reserve Bank has approved DCR- INDIA as an agency for the purpose of rating the issue of CPs.
- ii) In September 1996, the primary Dealers (authorized by Reserve Bank of India for this purpose) are given access to short-term borrowings through CPs, by issuing a separate notification.



- iii) In November 1996, the extent of CP that can be issued by all eligible corporate has been raised to 100 per cent of the working capital credit limit.

### **1997-98**

- i) In consonance with the minimum term deposit period of 30 days, effective from April 15, 1997, the minimum period of maturity of CP was brought down from 3 months to 30 days.
- ii) In October 1997, the requirement of minimum current ratio of 1.33:1 for a company to be eligible for issue of CP has also been dispensed with in the light of the operational freedom given to banks in the matter of assessment of working capital. Banks are also given freedom to decide the manner in which restoration of the working capital limit should be done.

### **1998-2000**

There were no policy announcements from 1998 to 2000.

### **2000-2001**

- i) The Reserve Bank issued draft guidelines for the issue of commercial paper (CP). It was proposed to permit all India financial institutions to issue CPs, to allow issue of CPs in maturities ranging from 15 days to one year in denominations of Rs.5 lakh or its multiples, to facilitate corporate to issue CPs to the extent of 50 per cent of working capital (fund-based) limit under automatic route, to permit FIIs to invest in CP within their 30 per cent limit of debt instruments, to encourage issue/holding & CP in dematerialized form, to enable credit rating agencies (CRA) to have discretion on the validity period of the rating and to assign clear roles for issuer, financing banking company, issuing and paying agent and CRA.
- ii) New guidelines were released on issue of CPs, accounting for the suggestions on draft revised guidelines circulated in July 2000, for providing flexibility, depth and vibrancy

in the CP market while retaining the prudential safeguards and transparency. In particular, the guidelines were to enable companies in the service sector to more easily meet their short-term working capital needs. CP is now allowed to be issued as a ‘stand alone’ product. Banks and FIs would have the flexibility to fix working capital limits duly taking into account resource pattern of companies’ financing, including CPs.

**2001-04**

There were no policy announcements from 2001 to 2004.

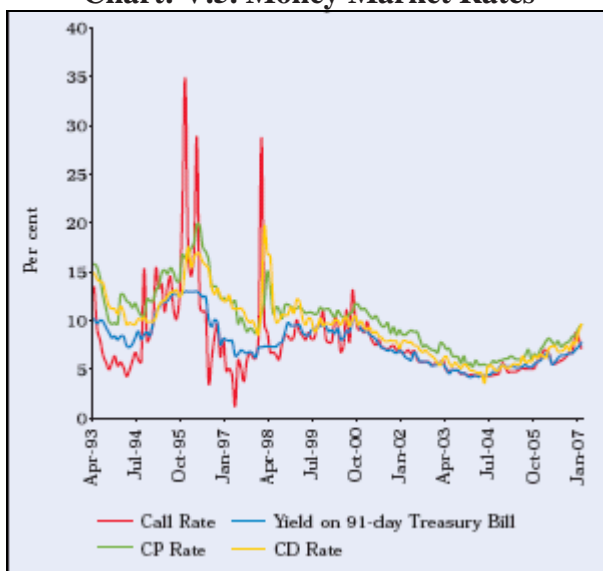
**2004-05**

The minimum maturity period of Commercial Paper (CP) reduced from 15 days to 7 days.

**2005-09**

There were no policy announcements from 2005 to 2009. <sup>(13)</sup>

**Chart: V.5. Money Market Rates**



*Source: RBI Occasional paper (special edition, 2009)*

The success of monetary policy depends on the speed of adjustment in money market rates in response to changes in the policy rates for effective transmission of monetary policy impulses to the economy. This, in turn, depends on the development and integration of various market segments. In line with the progress of financial sector reforms in India, various segments of the money market are getting increasingly integrated

as reflected in the close co-movement of rates in various segments. The structure of returns across markets has shown greater convergence after the introduction of LAF, differentiated by maturity, liquidity and risk of instruments (Chart: V.5) Strengthening of linkages amongst market segments suggests greater operational efficiency of markets as well as the conduct of monetary policy. The monetary policy reaction has been in terms of a combination of instruments, including regulatory action, to ensure the rapid restoration of stability in financial markets. <sup>(14)</sup>

## **5.7. MONEY MARKET MUTUAL FUNDS (MMMMFs)**

Money market mutual funds were introduced in 1992 with the aim of bringing it within the reach of individuals. These funds were introduced by banks and financial institutions. Narasimham committee has also suggested that well managed non-banking financial institutions and merchant banks should also be allowed to operate in the money market. It will widen the scope of money market.

Changes in the MMMFs during 1992-2009 and related policy measures are given below:

### **1992-95**

There were no policy announcements from 1992 to 1995.

### **1995-96**

- i) With a view to make the scheme of MMMFs more flexible and also provide greater liquidity and depth to the money market, the private sector institutions were allowed to set up MMMFs; the ceiling for raising resources and stipulation regarding minimum size of MMMFs was done away with and the prescription of limits on investments in individual instruments by them were withdrawn effective from November 23, 1995. The prudential guidelines that the exposure to CP issued by an individual company should not be more than 3 per cent of the resources mobilized by the MMMFs were, however, continued.

### **1996-97**

- i) In April 1996, the restriction on issue of units of MMMFs only to individuals was withdrawn and units could now be issued to corporate and others on par with all other mutual funds.
- ii) With a view to make the scheme of MMMFs more attractive to investors, effective from July 3, 1996 the minimum lock-in period was reduced from 46 days to 30 days.

### **1997-98**

- i) With a view to provide flexibility for MMMFs schemes, effective from October 22, 1997, MMMFs were permitted to invest in rated corporate bonds and debentures with a residual maturity up to one year. However, as a prudential measure, the exposure of MMMFs to CP issued by an individual company should not exceed 3 per cent of the resources of the MMMFs, has been continued though the ceiling now includes bonds and debentures also.

### **1998-99**

- i) To develop an efficient money market, the minimum lock-in period for units of MMMFs was reduced from 30 days to 15 days, effective from May 9, 1998.

### **1999-2000**

- i) MMMFs were permitted to offer 'cheque writing facility' to provide more liquidity to unit holders subject to certain safeguards prescribed in this regard. The 'cheque writing facility' was in the nature of a tie-up arrangement with a bank.
- ii) Effective from November 2, 1999 MMMFs were allowed to be set up as a separate entity in the form of a 'Trust' only and not in the form of a Money Market Deposit Account (MMDA)

- iii) Effective from November 2, 1999, scheduled commercial banks were permitted to offer 'cheque writing' facility to Gilt Funds and Liquid Income schemes of mutual funds which invest not less than 80 per cent of their corpus in money market instruments. The minimum lock-in period of 15 days applicable for MMMFs would not apply in the case of these schemes.
- iv) MMMFs were brought within the purview of SEBI regulations. Banks and FIs were required to seek clearance from the Reserve Bank for setting up of MMMFs.

### **2000-09**

There were no policy requirements from 2000 to 2009. <sup>(15)</sup>

## **5.8. CHANGES IN THE REFINANCE FACILITY**

Rediscount or refinance is used by central bank to relieve liquidity shortages in the system, control monetary & credit conditions and direct credit to selective sectors. This is an active instrument of monetary and credit regulation in India. The quantum and cost of refinance do play an important role in the liquidity management.

With the emergence of the Bank rate as the signaling rate of monetary policy stance, the present policy has been to keep the refinance rate linked to the bank rate.

Consistent with the goal of shifting monetary policy interventions from direct to indirect methods, the objectives has been to move towards a general refinance or LAF and doing away with all sector-specific and discretionary refinance facilities. Thus, currently, there are only three refinancing schemes in operation and available to banks- export credit refinance, general refinance and special liquidity support facility. Of these, special liquidity support is purely an ad hoc measure.

The policy changes during the period of our study are given below:

### **1992-93**

- i) Effective from April 22, 1992, 60 per cent of increase in export credit (rupee denominated) over the monthly average level for 1988-89 up to the monthly average level for 1989-90 plus 125 per cent of increase in export credit over the monthly average level for 1989-90 was eligible for refinance. The interest rate on export credit (rupee) refinance was raised from 9.5 per cent to 11 per cent per annum.

(When pre-shipment and post-shipment export credit interest rates were raised in August and October 1991, the export refinance rate was not raised so as to enable banks to have some time to phase in the new lending rates on export credit)

- ii) Effective from October 31, 1992, export credit (rupee) refinance was provided to the extent of 60 per cent of increase in outstanding export credit eligible for refinance over the monthly average level of 1988-89 up to the monthly average level for 1989-90 plus 110 per cent (as against 125 per cent earlier) of increase in export credit over the monthly average level for 1989-90.
- iii) Under refinance facility against PSCFC (introduced on January 3, 1992) banks were eligible for export credit refinance limits equivalent to 133-1/3 per cent of such credit provided to exporters. Effective from October 31, 1992 the limits were reduced to 120 per cent of such outstanding export credit.
- iv) A new refinance facility, viz, Government securities Refinance was introduced in October 1992. Under this facility, effective from October 31, 1992, banks were granted refinance to the extent of 0.5 per cent of the fortnightly average outstanding aggregate deposits in 1991-92 against the collateral of dated Government and other approved securities at the rate of 14 per cent per annum.

### **1993-94**

- i) Effective from May 15, 1993 export credit (rupee) refinance was provided to the extent of 60 per cent of increase in outstanding export credit eligible for refinance

over the monthly average level of 1988-89 up to the monthly average level of 1989-90 plus 100 per cent of increase in the export credit over the monthly average level for 1989-90 as against 110 per cent till then.

- ii) Effective from May 15, 1993 the export credit refinance limits against PSCFC were further reduced to 100 per cent of such credit provided by banks to exporters as against 120 per cent hitherto.
- iii) As the export credit refinance limits against PSCFC showed a phenomenal increase, effective from October 30, 1993 the refinance limits against PSCFC were reduced from 100 per cent to 90 per cent of such outstanding export credit.
- iv) Effective from October 30, 1993, the base year was brought forward by one year, i.e. from 1989-90 to 1990-91 and export credit (rupee) finance was provided to the extent of 60 per cent of increase in outstanding export credit eligible for refinance over the monthly average level of 1989-90 up to the monthly average level of 1990-91 plus 100 per cent of increase in export credit over the monthly average level for 1990-91.

#### **1994-95**

- i) Effective from May 28, 1994 the export credit refinance limits against PSCFC were further reduced to 80 per cent of such outstanding export credit provided by banks to exporters.
- ii) Effective from May 28, 1994, the base year was further brought forward by one year. The export credit (rupee) refinance was provided up to 60 per cent of increase in the outstanding export credit eligible for refinance over the monthly average level for 1990-91 up to the monthly average level for 1991-92 plus 100 per cent of increase in export credit over the monthly average level of outstanding export credit in 1991-92.

## **1995-96**

- i) Effective from April 29, 1995, banks were provided export credit (rupee) refinance to the extent of 100 per cent of increase in export credit eligible for refinance over the monthly average level of outstanding export credit in 1992-93.
- ii) As the refinance limits under PSCFC were very large and needed to be moderated, effective from April, 29, 1995 the export refinance limits were further reduced to 70 per cent of outstanding export credit provided by banks under PSCFC to exporters as against 80 per cent hitherto. Rate of interest on this refinance facility was raised from 5.5 per cent to 6.5 per cent per annum effective from April 18, 1995.
- iii) With a view to augment resources available under the Government securities refinance facility and imparting liquidity to the excess holdings of Government and other approved securities, effective from September 30, 1995, the base year for determining the refinance limits was brought forward from 1991-92 to 1994-95. Further the proportion of refinance was raised to one per cent of the fortnightly average outstanding aggregate deposits in 1994-95. The refinance limit was provided under two separate limits: (a) 0.5 per cent of the fortnightly average outstanding aggregate deposits in 1994-95 against the collateral of Treasury Bills of the rate of 12.5 per cent per annum and (b) 0.5 per cent of the fortnightly average outstanding aggregate deposits in 1994-95 against the collateral of Government dated and other approved securities at the rate of 14 per cent per annum.
- iv) Overdue PSCFC was made ineligible for refinance with effect from October 31, 1995.
- v) Effective from January 16, 1996 banks were made eligible for refinance under the PSCFC scheme against bills up to 90 days only and ineligible for refinance for bills beyond 90 days and up to 6 months from the date of shipment sanctioned.
- vi) With a view to remove the distortion in the effective interest rate on the SCFC facility which was significantly lower than under Foreign Currency Post-shipment credit,



PSCFC scheme was terminated effective from February 8, 1996. However the refinance limits against eligible PSCFC were allowed to continue till the respective due dates.

### **1996-97**

- i) As a part of rationalization of CRR and of refinance facilities from the Reserve Bank, sector specific refinance facilities were rationalized. Thus, the refinance formula for export credit was rationalized effective from April 13, 1996 whereby banks would be provided export credit refinance to the extent of 45 per cent of the outstanding export –credit eligible for refinance (Rupee credit and PSCFC taken together) up to the level of such credit as on February 16, 1996 plus 100 per cent refinance of the increase in such export credit over the outstanding level as on February 16, 1996. The rate of interest on such export credit refinance was fixed at 11 per cent per annum.
- ii) Effective from July 6, 1996 the refinance facility against the collateral of Treasury Bills and Government dated securities and other approved securities was withdrawn.
- iii) As a move towards further rationalization of CRR and refinance to banks, effective from November 9, 1996, 20 per cent of outstanding export credit of banks was made eligible for refinance up to the level of such credit as on February 16, 1996 plus 100 per cent of increase in outstanding export credit for refinance over the level as on February 16, 1996.

### **1997-98**

- i) In the context of introduction of a new General Refinance Facility, effective from April 26, 1997, base level export credit refinance limits at 20 per cent of export credit as on February 16, 1996 was withdrawn and banks were entitled for export credit refinance at the Bank Rate to the extent of 100 per cent of the increase in outstanding export credit eligible for refinance over the level of such credit as on February 16, 1996.

- ii) In the context of a move from sector-specific refinance facilities to a general refinance facility and also with a view to enable Bank Rate emerge as a reference rate, effective from April 26, 1997, banks were provided General Refinance to tide over temporary liquidity shortages equivalent to one per cent of each bank's fortnightly average outstanding aggregate deposits in 1996-97 in two blocks of four weeks each at Bank Rate for the first block of four weeks and at Bank Rate plus one percentage point for the second block of four weeks. Banks availing of this facility beyond eight weeks would face automatic debiting of their accounts with the Reserve Bank. Banks can avail of this facility a fresh if there is a gap of two weeks during which there is no borrowing under this facility.

### **1998-99**

- i) Export credit refinance was restored to 100per cent (as against the prevailing 50 per cent) of the increase in the outstanding export credit eligible for refinance over the level of such credit as on February 16, 1996 effective fortnight beginning May 9, 1998.
- ii) It was decided to effect a temporary revision in the interest rates charged up to March 31, 1999 by the scheduled commercial banks on pre-shipment and post-shipment rupee export credit. Scheduled commercial banks would be provided export-credit refinance at 2 percentage points below the Bank rate (i.e. 7 per cent per annum). The revised interest rates on export credit and export credit refinance would be applicable up to March 31, 1999.
- iii) Consequent to the reduction in the Bank Rate, scheduled commercial banks would be provided export credit refinance at 1 per cent below the Bank Rate, i.e. '7 per cent per annum' (instead of at the earlier rate of 2 per cent below the Bank Rate) up to March 31, 1999.
- iv) Export credit refinance to scheduled commercial banks was provided at Bank Rate (8 per cent) with effect from April 1, 1999.

### **1999-2000**

- i) The general refinance facility was withdrawn and replaced by a collateralized lending facility (CLF) up to 0.25 per cent of the fortnightly average outstanding aggregate deposits in 1997-98 which was available for two weeks at the Bank Rate.
- ii) Scheduled commercial banks were made eligible for export credit refinance facility (ERF) at the Bank Rate, i.e. 8 per cent per annum effective from April 1, 1999.

### **2000-01**

- i) All refinance limits available to banks (including those for CLF) as a temporary measure, would be reduced by 25 per cent each in two stages of the eligible limits as per the existing formula.

### **2001-02**

- i) Export credit refinance to scheduled commercial banks (SCBs) to be provided as per the new formula to the extent of 15 per cent of the outstanding export credit eligible for refinance, effective fortnight beginning May 5, 2001.

### **2002-03**

There was no major policy announcement during the year.

### **2003-04**

- i) Export credit refinance facility to continue for eligible export credit remaining outstanding under post-shipment credit beyond 90 days and up to 180 days.

### **2004-08**

There were no major policy announcements during 2004-08.

## **2008-09**

- i) A special refinance facility under section 17 (3 B) of the Reserve Bank of India Act, 1934 was introduced under which all SCBs (excluding RRBs) were provided refinance (which can be flexibly drawn and repaid) from the Reserve Bank equivalent to up to 1 per cent of each bank's NDTL as on October 24, 2008 at the LAF repo rate up to a maximum period of 90 days.
- ii) Special refinance facility up to 1 per cent of each bank's NDTL as on October 24, 2008 at the LAF repo rate was extended up to June 30, 2009.
- iii) Refinance facility of an amount of RS. 7,000crore was provided to SIDBI under the provisions of section 17 (44) of the Reserve Bank of India Act, 1934. This refinance facility will be available up to March 31, 2010.
- iv) Refinance facility of an amount of Rs.4, 000 crore was provided to the National Housing Bank (NHB) under the provisions of section 17 (4DD) of the Reserve Bank of India Act, 1934. This refinance facility will be available up to March 31, 2010.
- v) Refinance facility of an amount of Rs.5, 000 crore was provided to the EXIM Bank under the provisions of section 17 (47) of the Reserve Bank of India Act, 1934. This refinance facility will be available up to March 31, 2010.
- vi) The special refinance facility for SCBs under section 17 (3B) of the Reserve Bank of India Act, 1934 was extended up to September 30, 2009. <sup>(16)</sup>

## **5.9. EXPORT CREDIT**

Export credit policy refers to the measures influencing the level and composition of exports of a country. India's export policy has been primarily that of promoting exports. One of the important measures being adopted for export promotion in India is concessionary export credit.

Some of the policy measures related with export credit are given below:

### **1992-93**

- i) In order to make dollar-dominated export credit scheme more attractive, the rate of interest on refinance under this scheme was reduced from 7.5 per cent to 5.5 per cent per annum with effect from April 22, 1992.
- ii) In order to facilitate an environment for promotion of exports, effective October 9, 1992, interest rates on export credit (rupee) provided by banks were reduced by one percentage point across the board. Thus, the basic lending rate on export credit was reduced from 15 per cent to 14 per cent per annum.
- iii) Effective March 1, 1993, the interest rates on export credit (rupee) provided by banks were again reduced by one percentage point across- the- board. Thus, the basic lending rate on export credit was reduced to 13 per annum.

### **1993-94**

- i) With a view to ease the burden on the export sector, the Union Budget 1993-94 exempted payment of interest tax on export credit by banks from April 1, 1993 thereby reducing the effective interest rate on export credit by about one-half of one percentage points.
- ii) Following reduction in the MLR for advances of above Rs.2 lack by one percentage point to 16 per cent effective from June 24, 1993, the interest rates in respect of usance bills for periods beyond 90 days and up to six months and beyond six months were reduced from 17 per cent to 16 per cent and from 22 per cent to 21 per cent, respectively.

### **1994-95**

There were no new policy measures during 1994-95.

### **1995-96**

- i) Considering the increase in the US dollar LIBOR rate, the interest rate on post-shipment credit denominated in US dollars (PSCFC) was increased from 6.5 per cent to 7.5 per cent per annum effective from April 18, 1995.
- ii) With a view to rationalize the interest rates on PSCFC and encourage a quick turnaround of credit, interest rate on PSCFC in respect of usance bill for period beyond 90 days and up to six months from the date of shipment was enhanced from 7.5 per cent to 9.5 per cent per annum, and the interest rate on export credit, not otherwise specified for PSCFC, which was 9.5 per cent per annum, was freed effective from October 31, 1995.
- iii) With a view to facilitate a faster turnover of credit under the PSCFC scheme, effective from January 16, 1996, a rate of interest of 9.5 per cent per annum was prescribed on PSCFC for a total period of up to 90 days as against 7.5 per cent per annum earlier, and for credit of over 90 days banks were given freedom to fix their own interest rates.
- iv) With a view to remove the distortion in the effective interest rates on the PSCFC facility that was significantly lower than under Foreign Currency Post-Shipment Credit, the PSCFC was terminated effective from February 8, 1996.
- v) The interest rate on post-shipment export (rupee) credit for 90 days and up to 180 days was deregulated effective from February 8, 1996.

### **1996-97**

- i) Effective from October 21, 1996, interest rates on post-shipment export (rupee) credit were rationalized and banks were advised to charge interest rate of 15 per cent for the period beyond 90 days and up to 6 months and not from the date of advance.

### **1997-98**

- i) Effective from April 16, 1997, the interest rate, post-shipment export (rupee) credit for a period up to 90 days was changed from 13 per cent per annum to 'not exceeding 13 per cent per annum'.

- ii) As a measure to boost exports, effective from June 26, 1997, the interest rate on post-shipment export (rupee) credit was reduced by one percentage point i.e. for the period up to 90 days to 'not exceeding 12 per cent per annum' and for the period beyond 90 days and up to 6 months, the rate was reduced to 14 per cent (15 per cent earlier).
- iii) With a view to provide incentive for accelerated realization of export proceeds effective from September 13, 1997, interest rate on post-shipment export (Rupee) credit on demand bills (for transit period) and usance bills for a period up to 90 days was reduced to 'not exceeding 11 per cent' per annum and beyond 90 days and up to six months to 13 per cent per annum which would apply from the date of advance.
- iv) Effective from October 22, 1997, interest rates on pre-shipment export (Rupee) credit up to 180 days was reduced to 12 per cent per annum from 13 per cent per annum and for credit beyond 180 days and up to 270 days interest rate was reduced to 14 per cent per annum from 15 per cent per annum earlier.

### **1998-99**

- i) Interest rate on pre-shipment export credit up to 180 days was reduced from 12 per cent to 11 per cent, effective from April 30, 1998.
- ii) Interest rate against incentives receivable from Government covered by ECGC guarantee in respect of pre-shipment credit up to 90 days was reduced from the existing 12 per cent to 11 per cent, effective from April 30, 1998.
- iii) To enable exporters to avail of export credit in foreign currency more effectively at internationally competitive rates, banks were to charge a spread of not more than 1.5 percentage points over LIBOR.
- iv) Interest rates on export credit were revised upward, effective from April 1, 1999.

### **1999-2000**

There was no relevant policy announcement in 1999-2000.

### **2000-2001**

- i) The minimum rate for interest rate charge of 25 per cent on overdue export bills, in force since May 26, 2000 was withdrawn with effect from January 6, 2001 thereby giving banks the freedom to decide the appropriate rate of interest on overdue export bills.

### **2001-2002**

- i) Ceiling on interest rate on export credit in interest of all categories linked to banks' PLR. Ceiling rate on pre-shipment credit up to 180 days and post-shipment credit up to 90 days would be 1.5 percentage points below PLR.
- ii) Ceiling rate on foreign currency loans for exports reduced to LIBOR plus 1 percentage points.
- iii) Ceiling on interest rate for export credit reduced by 1 percentage points across the board for the period up to March 31, 2002. Accordingly, the maximum interest rate that the banks would charge on exporters was revised to 2.5 percentage points below its PLR for pre-shipment credit up to 180 days and for post-shipment credit up to 90 days.
- iv) The validity of the reduction in the ceiling on interest rate on pre-shipment and post-shipment export credit announced on September 24, 2001 extended up to September 30, 2002.

### **2002-2003**

- i) Banks to report to the Reserve Bank the minimum and maximum lending rates to Exporters, with effect from fortnight beginning June 15, 2002, for placing in public domain.
- ii) Ceiling interest rate on export credit in foreign currency reduced to LIBOR plus 0.75 percentage points from the existing LIBOR plus 1 percentage points.



### **2003-2004**

- i) The interest rate ceiling on pre-shipment rupee export credit up to 180 days and post-shipment credit up to 90 days stipulated at PLR minus 250 basis points to remain valid up to April 30, 2004.
- ii) Exporters were permitted, beginning January 1, 2004 to write off outstanding export dues on their own and extend the normal period of realization beyond 180 days on their own, provided the aggregate value of such write off and delay in realization does not exceed 10 per cent of their export proceeds in a calendar year.

### **2004-05**

- i) The validity period of the reduction in the interest rates charged by SCBs on pre-shipment rupee export credit up to 180 days and post-shipment rupee export credit up to 90 days announced on September 26, 2001 extended up to April 30, 2005.

### **2005-06**

- i) The ceiling interest rate on export credit in foreign currency raised by 25 basis points to LIBOR plus 100 basis points from LIBOR plus 75 basis points with immediate effect.
- ii) The validity of the interest rate ceiling stipulated at BPLR minus 2.5 percentage points on pre-shipment rupee export credit up to 180 days and post-shipment rupee export credit up to 90 days was extended up to October 31, 2006.

### **2006-07**

- i) Ceiling interest rate on export credit in foreign currency raised by 25 basis points to LIBOR plus 100 basis points.

## **2007-08**

- i) Validity of the interest rate ceiling stipulated at BPLR minus 2.5 per cent on pre-shipment Rupee export credit up to 180 days and post-shipment export Rupee credit up to 90 days extended to October 31, 2007.

## **2008-09**

- i) The period of entitlement of the first slab of pre-shipment rupee export credit, currently available at a concessionary interest rate ceiling of the benchmark prime lending rate (BPLR) minus 2.5 percentage points extended from 180 days to 270 days with immediate effect.
- ii) In view of the difficulties being faced by exporters on account of the weakening of external demand, the period of entitlement of the first slab of post-shipment rupee export credit, which was available at a concessionary interest rate ceiling of the BPLR minus 25 percentage points, was extended from 90 days to 180 days with effect from December 1, 2008.
- iii) The prescribed interest rate as applicable to post shipment rupee export credit (not exceeding BPLR minus 2.5 percentage points) was extended to overdue bills up to 180 days.
- iv) The ceiling rate on export credit in foreign currency was raised from LIBOR + 100 basis points to LIBOR + 350 basis points on February 5, 2009 subject to the condition that the banks would not levy any other charges. <sup>(17)</sup>

## **5.10. OTHER MONEY MARKET DEVELOPMENTS**

### **1992-93**

There were no relevant announcements.

### **1993-94**

- i) To provide flexibility to financial institutions (FIs) in October 1993, selected FIs namely, IDBI, ICICI, IRBI, SIDBI, EXIM Bank and NABARD were permitted to borrow from the term money market for periods in the maturity range of 3 months to 6 months within the stipulated limits for each institution.
- ii) Effective from October 12, 1993 the stipulation relating to the minimum rate of interest of 14 per cent per annum on IBP with risk-sharing was withdrawn and the issuing banks and the participating banks were free to determine the rate of interest on IBPs with risk sharing.

### **1994-95**

There were no relevant announcements.

### **1995-96**

- i) With a view to ensure that banks resort to rediscounting of commercial bills in accordance with the spirit of this facility, effective from April 29, 1995 rediscounting of commercial bills and derivative usance promissory notes were required to be for a minimum period of 15 days.

### **1996-97**

There were no relevant announcements.

### **1997-98**

- i) With a view to facilitate the development of a more realistic rupee yield curve and term money market inter-bank liabilities were exempted (except for a statutory minimum) from maintenance of CRR and SLR effective from April 26, 1997.

### **1998-99**

- i) The working Group on 'Money Supply: Analytics and Methodology of compilation' (Chairman: Dr.Y.V.Reddy) submitted its report to the Governor, Reserve Bank. The working Group examined the analytical aspects of monetary survey in the light of the

changing dimension of the financial sector consequent to the implementation of the financial sector reforms in India. The working Group proposed (1) compilation of comprehensive analytical surveys of the Reserve Bank, Commercial and Co-operative banks and the organized financial sector at regular intervals (2) compilation of four monetary aggregates M0 on a weekly basis and M1, M2, M3 on a fortnightly basis (3) compilation of three liquidity aggregate L1 and L2 on a monthly basis and L3 on a quarterly basis and (4) compilation of a comprehensive financial sector survey (FSS) on a quarterly basis.

### **1999-2000**

- i) It was decided that the RBI would provide accommodation to the state co-operative banks at the Bank Rate as against at 'Bank Rate plus 2.5 percentage points 'earlier'.
- ii) Scheduled commercial banks (excluding RRBs), PDs and All -India Financial Institutions (AIFIs) were permitted to undertake. Forward Rate Agreements/ Interest Rate swaps corporate were allowed to undertake these transactions only for hedging their own balance sheet exposures.
- iii) The Reserve Bank revised the interest rates on General Line of Credit to NABARD, effective July 1, 1999. Accordingly the interest rate on GLC I was revised to 'Bank Rate Minus 2 percentage points' (i.e. 6 per cent) from 'Bank Rate minus 3.5 percentage points' (i.e. 4.5 per cent). The interest rate on GLC II was also revised to 'Bank Rate minus 1.5 percentage point', (i.e. 6.5 per cent) from 'Bank Rate minus 3 percentage points', (i.e. 5 per cent).
- iv) The minimum interest rate of 20 per cent per annum on overdue export bills was withdrawn and banks were free to decide the appropriate rate of interest on these bills, keeping in view the PLR and spread guidelines.
- v) The interest rate surcharge of 30 per cent on import finance, in force since January 1998, was withdrawn to reduce the financing costs of imports for industry.

## **2000-01**

- i) In order to impart greater flexibility in the pricing of rupee interest rate derivatives and facilitate integration between money and foreign exchange markets, interest rates implied in the foreign exchange forward market could be used as a benchmark for FRA/IRS in addition to the existing domestic money and debt market rates.
- ii) An interest rate surcharge 50 per cent of the lending rate on import finance was imposed with effect from May 26, 2000. Essential categories were exempted from interest surcharge.
- iii) The Government of India reduced the interest rate payable on Relief Bonds issued under 9 per cent Relief Bonds, 1999, scheme from 9 per cent per annum to 8.5 per cent per annum with effect from March 15, 2001.

## **2001-02**

- i) Maintenance of daily minimum cash balance by banks with the Reserve Bank reduced from 65 per cent to 50 per cent for the first 7 days of the reporting fortnight with the minimum requirement of 65 per cent continuing for the following 7 days, with effect from the fortnight beginning August 11, 2001.
- ii) Interest rate on eligible cash balances of banks with the Reserve Bank aligned with the Bank Rate in two stages. In the first stage, effective fortnight beginning April 21, 2001 the interest rate was increased from 4 per cent to 6 per cent; at a subsequent stage, to be announced later, the interest rate would be at the Bank Rate.
- iii) Interest on eligible cash balances maintained with the Reserve Bank modified from the existing 6 per cent and linked to the Bank Rate (i.e. 6.5 per cent), effective fortnight beginning November 3, 2001.
- iv) Rationalization of current Account Facility by the Reserve Bank under examination.

### **2002-03**

- i) The limit on banks to borrow and invest from /in overseas market increased from 15 per cent to 25 per cent of their unimpaired Tier 1 capital within the bank's Open Position Limit and maturity mismatch limits (Gap limits)

### **2003-04**

- i) Less complex over-the counter (OTC) interest rate rupee options to be permitted.
- ii) Indian Bank Association (IBA) issued necessary instructions to banks for implementation of the scheme of benchmark PLR (BPLR) as early as possible.
- iii) All new loans granted by banks to non-banking financial companies (NBFCs) for the purpose of on lending to SSI sector to be reckoned under the priority sector lending.
- iv) An advisory committee was proposed to be set up to suggest appropriate changes in the institutional and procedural arrangements for smooth flow of credit to agriculture and capturing new technological developments for improving credit delivery.
- v) Keeping in view the credit needs of the SSI sector, a working Group was proposed to assess the progress made in the implementation of the recommendations of the Kapur Committee and the Gupta Committee and to suggest ways to improve credit flow considering in particular, the backward and forward linkages of this sector with large corporate.
- vi) Primary dealers (PDs) were allowed to borrow on average in a reporting fortnight, up to 200 per cent of their net owned funds (NOF) at end- March of the preceding financial year, effective from February 7, 2004.
- vii) All NDS members were required to report their deals as soon as they are concluded.

viii) A fully functional RTGS system was expected to be made operational by June 2004, which would be fully integrated with Integrated Accounting system of the Reserve Bank.

ix) With the commencement of RTGS system, the Reserve Bank would provide collateralized intra-day liquidity support to participants for any likely increase in their requirements of intra-day funds for a smooth and timely settlement process. Market participants were advised to device strategies for efficient cash flow management.

#### **2004-05**

i) Banks to take appropriate steps to increase the flow of credit to priority sector, agriculture and weaker sections, so as to achieve the stipulated targets and also observe the Reserve Bank directives on interest rates on loans.

ii) The interest on eligible cash balances maintained with the Reserve Bank reduced to 3.5 per cent from the Bank Rate (6 per cent) effective from September 18, 2004.

iii) The ceiling on the outstanding obligation of the Government under the market stabilization scheme (MSS) rose from Rs. 60,000 crore to RS.80, 000 crore. The threshold level of the ceiling for further review placed at Rs.70, 000 crore.

#### **2005-06**

i) From April 30, 2005, all negotiated dealing system (NDS) members required to report their term money deals on NDS platform.

ii) The reserve Bank to provide information on overnight rates and volumes for collateralized borrowing and lending operations (CBLO) and market repo, in addition to all money market, on its website.

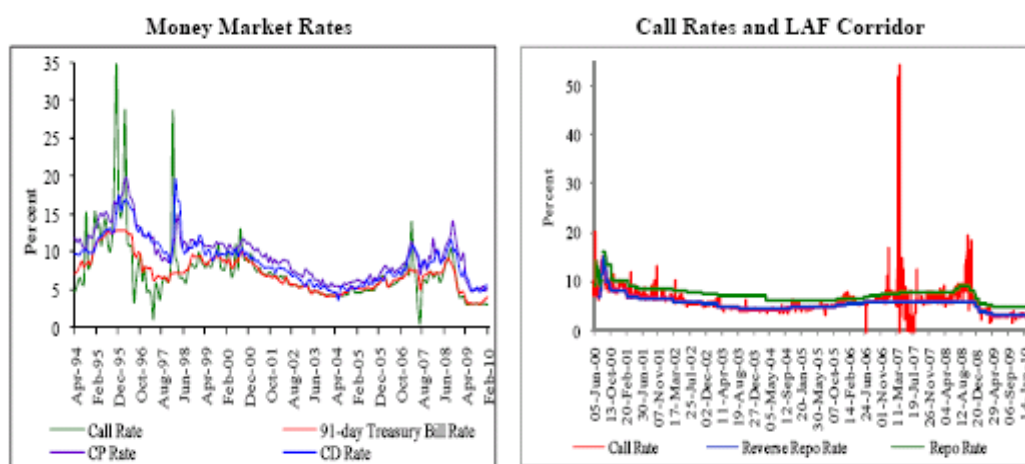
#### **2006-08**

There were no policy announcements.

## 2008-09

- i) Special Market Operations were put in place, for the smooth functioning of financial markets and for overall financial stability.
- ii) Banks were allowed to avail of additional liquidity support exclusively for the purpose of meeting the liquidity requirements of mutual funds to the extent up to 0.5 per cent of their NDTL purely as a temporary measure.
- iii) The mechanism of SMO for public sector oil marketing companies provided in June-July 2008 would be instituted when oil bonds become available.
- iv) The Reserve Bank permitted Indian corporate to prematurely buyback their FCCBs at prevailing discounted rates.
- v) The Reserve Bank announced OMO purchase of government securities of the order of Rs. 80,000 crore in the first half of 2009-10, of which Rs. 40, 000 crore is envisaged for the first quarter of 2009-10. <sup>(18)</sup>

**Chart: V.6. Money Market Integration and Policy Rates**



*Source: Deepak Mohanty, Implementation of Monetary Policy in India*

In response to the measures taken to develop the money market, over the years the turn over in various market segments increased significantly. All these reforms have also



led to improvement in liquidity management operations by the Reserve Bank as evident from the stability in call money rates, which also helped improve integration of various money market segments and thereby effective transmission of policy signals (Charts: V.6). The rule-based fiscal policy pursued under the Fiscal Responsibility and Budget Management (FRBM) Act, by easing fiscal dominance, contributed to overall improvement in monetary management. <sup>(19)</sup>

The money market forms the first and foremost link in the transmission of monetary policy impulses to the real economy. Policy interventions by the central bank along with its market operations influence the decisions of households and firms through the monetary policy transmission mechanism. The Reserve Bank constituted a Working Group on Benchmark Prime Lending Rate (Chairman: Shri Deepak Mohanty) to review the present benchmark prime lending rate (BPLR) system and suggest changes to make credit pricing more transparent. The Working Group has submitted its report in October 2009. Based on the recommendations of the Group and the suggestions from various stakeholders, it has been decided to mandate banks to switch over to the system of Base Rate from July 1, 2010. Guidelines on the Base Rate system were issued on April 9, 2010. It is expected that the Base Rate system will facilitate better pricing of loans, enhance transparency in lending rates and improve the assessment of transmission of monetary policy.

LAF has now emerged as the principal operating instrument of monetary policy. It has helped in stabilizing the regular liquidity cycles and, subsequently, the volatility of call money rates by allowing banks to fine-tune their liquidity needs as per the averaging requirements of CRR over the reporting period. Besides, it helped to modulate sudden liquidity shocks. More importantly, the LAF has emerged as an effective instrument for maintaining orderly conditions in the financial markets in the face of volatile capital flows. Thus, the LAF has imparted a much needed flexibility to the Reserve Bank in modulating the liquidity in the system and steering the interest rates in response to evolving market conditions.

The existence of a wide, deep and liquid money market is critical for the development of a smooth yield curve, which facilitates the conduct of monetary policy. As money market determines the cost of liquidity and anchors the short-end of the yield curve, the development of a deep and liquid money market is imperative for the emergence of a yield curve which would credibly transmit monetary policy signals. In this regard, the Reserve Bank has taken several measures since the mid-1990s to develop a short term yield curve with deep liquidity. <sup>(20)</sup>

These are:

- ii) exempting inter-bank liabilities from the maintenance of CRR;
- iii) operationalizing the LAF whereby the reverse repo and repo rates are used as policy instruments to modulate liquidity conditions and stabilize call rates within the LAF corridor;
- iv) transforming the call money market into a pure inter-bank market by phasing out the nonblank lenders;
- v) developing other market segments with adequate access for non-banks;
- vi) developing a relatively vibrant non-RBI repo market; and
- vii) developing the CBLO market as yet another instrument of overnight borrowing /lending facility.

Money market instruments facilitate transfer of large sums of money quickly and at a low cost from one economic unit (business, government, banks, non-banks and others) to another for relatively short periods of time. In this chapter, we have gone through the important market variables such as lending rate, deposit rate, call rate, MMMFs, CDs, CPs, export credit and changes in the refinance facility. Since these are all important variables that provide a healthy background for our economic growth, a well developed money

market and more or less stable interest rates for a long period can be considered as necessary conditions for the effective execution of monetary policy techniques.

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## **REFERENCES**

1. Chakrabarty Committee Report, 1985. Committee to Review the Monetary System, (Chairman: Sukhamoy Chakrabarty), [www.rbi.org.in](http://www.rbi.org.in)
2. Tarapore, S.S. 2001. Monetary Management and Institutional Reforms, UBSPD, New Delhi, p.30.
3. Reserve Bank of India: RBI Annual Report for 2001-02, Mumbai.
4. Reserve Bank of India: Report on Currency and Finance, Various Years. (1991-2010), Mumbai.
5. Reserve Bank of India: Report on Currency and Finance, Various Years. (1991-2010), Mumbai
6. Reserve Bank of India: Report on Currency and Finance, Various Years. (1991-2010), Mumbai
7. Reserve Bank of India: Report on Currency and Finance, Various Years. (1991-2010), Mumbai
8. Reserve Bank of India: RBI Occasional paper (special edition, 2009), Mumbai
9. Deepak Mohanty, 2010. Implementation of Monetary Policy in India, Speech Delivered at the Banker's Club, Bhubaneswar on 15<sup>th</sup> March. [www.rbi.org.in](http://www.rbi.org.in)
10. Reserve Bank of India: Report on Currency and Finance, Various Years. (1991-2010), Mumbai
11. Reserve Bank of India: RBI Occasional paper (special edition, 2009), Mumbai
12. Reserve Bank of India: RBI Occasional paper (special edition, 2009), Mumbai
13. Reserve Bank of India: Report on Currency and Finance, Various Years. (1991-2010), Mumbai
14. Reserve Bank of India: RBI Occasional paper (special edition, 2009), Mumbai

15. Reserve Bank of India: Report on Currency and Finance, Various Years. (1991-2010), Mumbai
16. Reserve Bank of India: Report on Currency and Finance, Various Years. (1991-2010), Mumbai
17. Reserve Bank of India: Report on Currency and Finance, Various Years. (1991-2010), Mumbai
18. Reserve Bank of India: Report on Currency and Finance, Various Years. (1991-2010), Mumbai
19. Deepak Mohanty, 2010. Implementation of monetary policy in India, Speech Delivered at the Banker's Club, Bhubaneswar on 15<sup>th</sup> March. [www.rbi.org.in](http://www.rbi.org.in)
20. Reserve Bank of India: RBI Occasional paper (special edition, 2009), Mumbai.

**CHAPTER –VI**

**MONETARY POLICY IN INDIA**

## **CHAPTER –VI**

### **MONETARY POLICY IN INDIA**

This chapter deals with two sections such as ‘Instruments of Monetary Policy in India’ and ‘Money, Prices and Output in India’. The former examines the first objective of the study, i.e. to understand the changing role and importance of monetary tools in India and the latter deals with the second and third objectives of the research work. Our second objective is to find out how much monetary policy ensures financial stability and third objective is to analyze its role in facilitating growth.

#### **SECTION-1**

##### **6.1. INSTRUMENTS OF MONETARY POLICY IN INDIA**

Being the first part of this analysis chapter, we are going to take a cautious step to enter into the area of ‘instruments of monetary policy in India’. Generally, there are two sub-divisions among the monetary policy techniques, such as quantitative and qualitative methods and they are popularly known as general and selective credit controlling measures.

Among the various techniques and methods, we have taken into account the most important and selected monetary instruments such as Bank rate, CRR, SLR, OMO, and Repo and Reverse Repo rates; the new members of monetary management, along with selective credit control measures.

###### **6.1.1. BANK RATE**

The dictionary meaning of Bank Rate is the discount rate of a central bank. Now it is known as the base rate and it is also called as the Minimum Lending Rate (MLR). It is the rate at which the central bank lent to the other banks.

According to M. Spalding, the bank rate is “the minimum rate charged by the central bank for discounting approved bills of exchange.” Hence, being the ‘lender of

last resort', the central bank helps the commercial banks by rediscounting the first class bills, i.e. by advancing loans against approved securities.

The Reserve Bank of India Act defines Bank Rate as "the standard rate on which it is prepared to buy or rediscounts bills of exchange or other commercial papers eligible for purchase under this Act". That is why Bank Rate is known as the 'Rediscount Rate'.

In India, the Bill market is not so well developed and the RBI makes advances to banks mainly in other forms such as against Government securities and as refinance. Hence, the bank rate is not the key lending rate, though it does form the basis for multiplicity of the RBI's lending rates charged for various types of advances. However, the efficiency of this as a tool of credit control has often been questioned. Bank Rate is usually, more sticky than other rates. Changes in it are always discontinuous. Since bank rate changes have 'announcement effect', i.e. effects or market reactions produced by the mere announcement of a change in the bank rate, central banks avoid making frequent changes in the bank rate, even though changing conditions may warrant such variations.

Generally, Bank rate policy aims at influencing the level of economic activity, the cost and availability of credit to the commercial banks, and the interest rates and money supply in the economy. There is a direct relationship between the bank rate and the market interest rates. A change in the bank rate leads to change in other interest rates prevailing in the market, although there is a clear cut distinction between the two. In this sense, bank rate can be considered as an effective rate in the market.

Changes in the bank rate influence the entire interest rate structure, i.e. short-term as well as long term interest rates. A rise in the bank rate leads to a rise in the other market interest rates, which implies a clear money policy increasing the cost of borrowing. Similarly, a fall in the bank rate results in a fall in the other market rates, which implies a cheap money policy reducing the cost of borrowing.

According to Hawtrey, the bank rate policy alters the short-term interest rates in the market, which influence the level of economic activity in the economy. When

the bank rate rises, short-term interest rates rise consequently. This discourages the traders to hold finished goods because now the cost of holding such stock has risen. They will curtail their existing stocks and hence it will reduce its production and employment. Unemployment will reduce general demand for goods and services and thereby their prices. Thus, a rise in bank rate adversely affects the economic activities.

Keynes, on the other hand, was of the view that the economic activity in the economy is influenced by the effect of the bank rate on the long-term interest rates. According to him, whenever bank rate rises, the short-term interest rates go up immediately and after a while long-term interest rates also move upward. As a result of rise in the long-term interest rates, given the marginal efficiency of capital, the businessmen will reduce their investment and the reduction in investment will result in contraction in economic activity, leading to a fall in production, employment and prices. Hence, Keynes emphasized the effects of change in the long-term interest rates on the level of economic activity.

But, according to De Kock, “the discount rate of central bank has nevertheless a useful function to perform in certain circumstances and in conjunction with other measures of control”.<sup>(1)</sup>

Though the bank rate policy suffers from serious limitations and though it has not proved very effective in both developed and in under developing countries, its importance as a useful weapon of credit control particularly in fighting inflationary pressures in the economy cannot be under estimated.

The significance of the bank rate policy is three fold. They are; the bank rate which indicates the rate at which the public can get accommodation against the approved securities from the banks, it indicates the rate at which the commercial banks can get accommodation from the central bank against the Government and other approved securities and it reflects the credit situation and economic condition in the county.

In India, the Reserve Bank has changed the bank rate from time to time to meet the changing conditions of the economy. It was raised from 3 to 3.5 per cent in



November 1951 and increases in the bank rate were adopted to reduce bank credit and control inflationary pressures.

As a part of financial sector reforms of 1990s, the Reserve Bank of India has decided to consider the Bank Rate as a policy instrument for transmitting signals of monetary and credit policy. Bank Rate now serves as a reference rate for other rates in the financial markets. With this new role assigned to the Bank Rate and to meet the growing demand for credits from all sectors of the economy under the liberalized economic conditions, the Bank Rate has been reduced in phases in subsequent years. As per the policy announced on April 29, 2003, the Bank Rate in India is 6 per cent. The changes in the bank rates during the period of our present study are as follows:

### **1992-97**

There were no relevant policy announcements related to bank rate from 1992 to 1997.

### **1997-98**

- i) In order to make the Bank Rate an effective signal rate as well as a reference rate, all interest rates on advances from the Reserve Bank as also the penal rates on short falls in reserve requirements which were specifically linked to the Bank Rate were revised. Interest rates on other categories of accommodation from the Reserve Bank as well as term deposit rates up to one year which were not linked to the Bank Rates, was linked to it. Effective from April 16, 1997, the Bank Rate was reduced by one percentage point, i.e. from 12 per cent per annum to 11 per cent per annum so that changes in the Bank Rate reflect the stance of monetary policy.
- ii) With a view to align the Bank Rate to the changing conditions, effective from June 26, 1997, the Bank Rate was further reduced from 11 per cent per annum to 10 per cent per annum. Simultaneously, the interest rate on deposits having maturity of 30 days and up to one year was reduced from 9 per cent to 8 per cent, i.e. Bank Rate minus two percentage points. All interest rates on advances from the Reserve Bank such as, Export Credit Refinance and General Refinance to banks which were

specifically linked to the Bank Rate was reduced to 10 per cent from 11 per cent per annum.

- iii) Effective from October 22, 1997, the Bank rate was further reduced by one percentage points to 9 per cent from 10 per cent per annum.
- iv) Effective from January 17, 1998, the Bank Rate was increased by 200 basis points to 11 per cent from 9 per cent. This was to control broad money expansion.
- v) Effective from March 19, 1998, the Bank Rate was reduced by 50 basis points to 10.5 per cent from 11 per cent. This was to stabilize the broad money.

### **1998-99**

- i) The Reserve Bank reduced the Bank Rate by one half of one percentage point to 10 per cent with effect from close of business on April 2, 1998.
- ii) The Bank Rate was further reduced by one percentage point to 9 per cent.
- iii) Effective from close of business of March 2, 1999, the Bank Rate was reduced by one percentage point to 8 per cent. As a consequence of this change, interest rates on special liquidity support and General Refinance Facility to banks and liquidity support to PDs against their holdings of securities in SGL accounts were reduced by one percentage point.

### **1999 – 2000**

There was no relevant policy change during 1999-2000.

### **2000 -2001**

- i) The Reserve Bank reduced the Bank Rate by 1.0 percentage point to 7 per cent, effective from the close of business on April 2, 2000.
- ii) After a review of the recent developments in the International and domestic financial markets, including the foreign exchange market, the Reserve Bank raised

the Bank Rate by 1 percentage points to 8 per cent with effect from the close of business on July 22, 2000.

- iii) The Reserve Bank reduced the Bank Rate by 50 basis point to 7.5 per cent effective from close of business on February 17, 2001.
- iv) On a further review, the Bank Rate was reduced from 7.5 per cent to 7.0 per cent effective from close of business on March 2, 2001.

#### **2001- 02**

- i) Bank Rate was reduced by 0.50 percentage point from 7 per cent to 6.50 per cent with effect from the close of business on October 23, 2001.

#### **2002- 03**

- i) A reduction in Bank Rate by 50 basis points to be considered by the Reserve Bank as and when necessary.
- ii) Bank Rate was reduced by 25 basis points to 6.25 per cent with effect from close of business on October 30, 2002.

#### **2003-04**

- i) Bank Rate was reduced by 0.25 percentage points to 6.0 per cent with effect from the close of business on April 29, 2003, with a policy bias to keep it stable until the mid-term Review of October 2003.

#### **2004-10**

There were no relevant policy changes during 2004-10. Bank Rate was kept unchanged at 6 Per cent. <sup>(2)</sup>

**Table VI.1**  
**Movements in Bank Rate during 1991-2010**

<b>Year</b>	<b>Effective since</b>	<b>Bank Rate</b>	<b>Change</b>	<b>Remarks</b>
1992-97		12		
1997-98	April 16, 1997	11	(-1.00)	To reflect the stance of monetary policy, being a signal rate
	June 26, 1997	10	(-1.00)	„
	Oct 22, 1997	9	(-1.00)	„
	Jan 17, 1998	11.00	(+2.00)	To control broad money expansion
	March 19, 1998	10.50	(-0.50)	
1998-99	April 3, 1998	10	(-0.50)	
	April 29, 1998	9	(-1.00)	
	March 2, 1999	8	(-1.00)	To reduce liquidity support to banks & PDs
1999-2000		8	No Change	„
2000-01	April 2, 2000	7	(-1.00)	„
	July 22, 2000	8	(+1.00)	To be align with international developments
	February 17, 2001	7.5	(-0.50)	
	March 2, 2001	7.0	(-0.50)	
2001-02	October 23, 2001	6.5	(-0.50)	
2002-03	October 30, 2002	6.25	(-0.25)	
2003-04	April 29, 2003	6	(-0.25)	To keep the rate stable, being a reference rate
2004-10		6	No Change	

*Source: RBI Publications (various years)*

Bank rate is the rate at which RBI allows finance to commercial banks and hence it is a tool, which the central Bank uses for short-term purposes. Any upward revision in Bank Rate is an indication that banks should also increase deposit rates as

well as prime Lending Rate. Thus, any revision in the Bank Rate could mean more or less interest on deposits as well as on borrowings.

History of Bank Rate in India is older than the Central Bank of our country. When the Reserve Bank of India started its functioning in 1935, it announced its Bank Rate as 3.5 per cent on July 5, 1935. At the starting of the reform period, i.e. in 1991-92, the rate was 12 per cent and the rate continued till the end of eighth plan period (1992-97). It started diminishing on April 16, 1997 with a rate of 11 per cent and by October 22, it reached 9 per cent. In the next year, i.e. in 1998, it was raised sharply to 11 per cent. (Table VI.1). It was to reflect the stance of monetary policy, being a signal rate.

From 1998 onwards, the Bank Rate was steadily brought down except in the year 2000. This was mainly to reduce liquidity support to banks & Primary Dealers. In the mid-way of 2000, it was slightly increased by one per cent, but again decreased after six months. This was to be align with international developments. Since April 29, 2003, it was kept constant at 6 per cent. So it can be understood that even though the Bank rate is a weapon of the monetary authority and playing the role of a reference rate, it was not so active during the beginning and ending of our present study.

### **6.1.2. CASH RESERVE RATIO (CRR)**

Anmol's Dictionary of Economics defines cash reserve ratio as the ratio which banks maintain between their holdings of cash and their deposit liabilities, and sometimes referred to as the Cash Ratio. <sup>(3)</sup>

Banks have to keep a certain proportion of their total assets in the form of cash, partly to meet the statutory reserve requirement and partly to meet their own day-to-day needs for making cash payments. Cash is held partly in the form of 'cash on hand' and partly in the form of 'balances with the RBI'. All such cash is cash reserves and can be classified into two such as required reserves and excess reserves. Required reserves are cash balances which a bank is required statutorily to hold with the RBI. They are calculated on average daily basis over a fortnight. Under the existing law enacted in 1962 the RBI is empowered to impose statutorily 'cash reserve ratio' (CRR)

on banks anywhere between 3 per cent and 15 per cent of their net demand and time liabilities (NDTL) as of the last Friday of the second preceding fortnight. It is this authority of the RBI to vary the minimum CRR which makes the variable reserve ratio a tool of monetary control.

Besides required reserves, banks also hold excess reserves which are reserves in excess of the required reserves. It is only these reserves which banks as a whole can use to meet their currency drains as well as clearing drains (i.e. net withdrawals and loss). A large part of the excess reserves banks hold in the form of 'cash on hand' or 'vault cash' with themselves. The remaining small part they hold as excess balances with the RBI. Banks always try to adjust their asset portfolio so that their actual excess reserves are equal to their desired excess reserves. This simple function can actually explain the behavior of monetary mechanism. <sup>(4)</sup>

The method of variable cash reserve ratio was first adopted by the Federal Reserve System of the U.S.A in 1935 in order to prevent injurious credit expansion or contraction. While the bank rate policy and the open market operations due to their limitations are appropriate only to produce marginal changes in the cash reserves of the commercial banks, the method of cash reserve ratio is a more direct and more effective in dealing with the abnormal situations when, for example there are excessive reserves with the commercial banks on the basis of which they are creating too much credit, leading to inflation. Thus, a change in cash reserves can affect the money supply in two ways, such as it can change the level of excess reserves and it changes the credit multiplier. So it is important to note that as a policy tool the changes in the CRR have been more successful in controlling credit in comparison to open market operations and bank rate.

The essential function of changes in the required reserve ratio is to bring about desired changes in effective or adjusted amount of high powered money (H) and through it in the amount of money and bank credit. Hence, in this sense, the method of variable reserve ratio can act both as a supplement and as an alternative to other methods of monetary control.

However, the method of variable cash reserve ratio is not free from limitations. This method is not effective when the commercial banks keep very large excessive cash reserves and possess large foreign funds. This method is appropriate only when big changes in the reserves of the commercial banks are required. The effectiveness of this method also depends upon the general background and climate of the business community in the economy. This method is discriminatory in nature, for it discriminates in favor of the big commercial banks. Frequent changes in the cash reserve ratio are not desirable because it creates the conditions of uncertainty. The method of CRR affects only the commercial banking system of the country avoiding the NBFIs. It is the most direct and immediate method of credit control and therefore has to be used very cautiously by the central bank. A slight carelessness in its use may produce harmful results for the economy. This method may have depressing effect on the securities market. As De Kock says, “while it is very prompt and effective method of bringing about the desired changes in the available supply of bank cash, it has some technical and psychological limitations which prescribe that it should be used with moderation & discretion and only under obviously abnormal conditions”.<sup>(5)</sup>

Despite the limitations, the variable cash reserve ratio is a useful method of credit control. It assumes special significance in the underdeveloped countries where the other monetary tool suffers from so many limitations. However, this method is to be used with utmost care and discretion.

The Reserve Bank used the technique of variable cash reserve ratio for the first time in June 1973 when it raised the ratio from 3 to 5 per cent and further to 7 per cent in September 1973. Since then, the Reserve Bank has raised or reduced the cash-reserve. Bank has raised or reduced the cash-reserve ratio many times. The Narasimham Committee in its report submitted in November 1991, was of the view that a high cash Reserve Ratio (CRR) adversely affects the bank profitability and thus puts pressure on banks to charge high interest rates on their commercial sector advances. The Government therefore decided to reduce the CRR over a four year period to a level below 10 per cent. As per the policy announced on April 24, 2010, the CRR in India is 6.00 per cent.

The variations in the cash reserve ratio during the period of our present study are as follows:

### **1992-1993**

The scheduled commercial banks were exempted from maintaining the 10 per cent incremental CRR for any increase in net demand and time liabilities (NDTL) over the level as on April 17, 1992.

One-third of additional cash balances maintained under the 10 per cent incremental CRR by each bank up to April 17, 1992 was released in three equal installments from the fortnight beginning October 17, November 14 and December 12, 1992.

Effective from the fortnight beginning October 17, 1992, no interest is being paid on the increase in eligible cash balances based on NDTL maintained after March 23, 1990 under the average 15 per cent CRR as well as on the eligible cash balances maintained under the 10 per cent incremental CRR.

### **1993-1994**

The average CRR on NDTL was reduced from 15 per cent to 14 per cent in two phases, i.e. 14.5 per cent from fortnight beginning April 17 and 14 per cent from May 15, 1993.

### **1994-95**

CRR was increased from 14 per cent to 15 per cent in three phases; 14.5 per cent, 14.75 per cent and 15 per cent from the fortnights beginning June 11, July 9 and August 6, 1994, respectively. These were to mop up excess liquidity and curtail inflation.

From the fortnight beginning January 7, 1995, banks were required to maintain at least 85 per cent of the CRR balances required to be maintained on each of the first 13 days of the reporting fortnight, failing which they would not be paid interest for that/those day /days even though there is no short fall in the maintenance of CRR. On



the 14<sup>th</sup> day of the reporting fortnight, banks were allowed to maintain less than 85 per cent of the required cash balances to adjust the average of daily balances to the required level.

### **1995-96**

With a view to avoid hardships to banks owing to intervening holidays, effective from September 30, 1995 banks were required to maintain a minimum level of 85 per cent of the CRR requirement from the first working day of the reporting fortnight.

Banks were allowed to adjust their cash balances on the last working day of the reporting fortnight to the required level. For this purpose, banks should reckon the holidays with reference to the centre where they have their principal account for maintenance of CRR.

The average CRR was reduced from 15 per cent to 14.5 per cent with effect from November 11, 1995.

The average CRR was reduced to 14 per cent effective from December 9, 1995.

### **1996-97**

With a view to augment the lendable resources of banks, the average CRR was further reduced from 14 per cent to 13.5 per cent from April 27, 1996 and further to 13 per cent from May 11, 1996.

Effective from July 6, 1996 the average CRR was reduced to 12 per cent from 13 per cent.

Consistent with the medium-term objectives of reduction in CRR, the average CRR was reduced by two percentage points from 12 per cent to 10 per cent in four phases of 0.5 percentage points each, i.e. 11.5 per cent effective from October 26, 1996, 11 per cent effective from November 9, 1996, 10.5 per cent effective from January 4, 1997 and 10 per cent from January 18, 1997.

Scheduled state Co-operative Banks (SCBs) and RRBs were required to maintain a minimum average CRR of 3 per cent of the NDTL up to December 1996. They were granted further extension of two years, i.e. from January 1, 1997 to December 31, 1998.

### **1997-98**

With a view to facilitate the development of a more realistic rupee yield curve and term money market, banks were exempted from average CRR on inter-bank liabilities from April 26, 1997.

In accordance with the stance of monetary policy of phased reduction in statutory pre-emption of banks' resources, a two percentage point reduction in average CRR was announced on October 21, 1997: 9.75 per cent from October 25, 1997, and 9.50 per cent from November 22, 1997 were implemented. However, reduction envisaged in CRR during the period was contingent on the monetary and price situation at that time.

As part of the rationalization measures, effective from October 25, 1997, interest paid by the Reserve Bank on eligible cash balances maintained under CRR of banks was raised to 4 per cent from the effective rate of interest of 3.5 per cent under the two- tier formula relevant at that time.

The CRR to be maintained, by the scheduled commercial banks against their net demand and time liabilities (NDTL), was increased from 9.50 to 10 per cent effective from fortnight beginning December 6, 1997.

The CRR to be maintained, by the scheduled commercial banks against their net demand and time liabilities (NDTL), was further increased from 10 per cent to 10.50 per cent effective fortnight beginning January 17, 1998. This was to maintain financial stability.

Effective from March 28, 1998, CRR was reduced from 10.50 per cent to 10.25 per cent.

## **1998 – 99**

The CRR to be maintained, by the scheduled commercial banks against their net demand and time liabilities (NDTL), was reduced from 10.25 to 10 per cent effective from fortnight beginning April 11, 1998.

The Reserve Bank decided to release the remaining two-third of the balances impounded during the period May 4, 1991 and April 17, 1992 under 10 per cent incremental CRR on NDTL, in twelve equal installments over the period May 1998 to March 1999. It may be mentioned that one-third of the amount impounded was released in three installments in October 1992.

As a temporary measure, in order to absorb excess liquidity, the CRR to be maintained, by the scheduled commercial banks against their net demand and time liabilities (NDTL), (excluding liabilities subject to zero CRR prescription) was increased from 10 per cent to 11 per cent effective fortnight beginning August 29, 1998.

Effective from fortnight beginning March 13, 1999, CRR to be maintained by scheduled commercial banks (excluding RRBs) was reduced by 0.5 percentage points to 10.5 per cent of the net demand and time liabilities (NDTL) ( excluding liabilities subject to zero CRR prescription).

## **1999-2000**

Effective from fortnight beginning May 8, 1999, CRR was reduced by 0.5 percentage points to 10 per cent, which augmented lendable resources of banks by about Rs. 3,250 crore.

With a view to encourage mobilization of domestic idle gold under the gold deposit scheme proposed to be introduced by authorized banks, banks participating under this scheme were exempted from maintaining CRR on liabilities under gold deposits mobilized in India. However, the effective CRR to be maintained by authorized banks on total net demand and time liabilities including liabilities under gold deposit scheme should not be less than 3 per cent. Banks were required to convert

the liabilities and assets denominated in terms of gold into rupees for the purpose of compliance with reserve requirements/ capital.

CRR to be maintained by Scheduled commercial banks (excluding RRBs) was reduced in two stages of half a percentage points each, effective from the fortnights beginning November 6 and 20, 1999 to 9.5 per cent and 9 per cent respectively.

Effective from fortnight beginning November 6, 1999 the liabilities under FCNR (B) scheme were exempted from the maintenance of incremental CRR of 10 per cent (over the level as on April 11, 1997).

In order to improve the cash management by banks, a lag of two weeks in the maintenance of stipulated CRR by banks was introduced, effective from November 6, 1999. Thus, the prescribed CRR during a fortnight would be maintained by a bank based on its NDTL as on the last Friday of the second preceding fortnight.

To enable banks to tide over the contingency of additional demand for bank notes during the millennium change, 'cash in hand' with banks was allowed to be included in the calculation of CRR during December 1, 1999, to January 31, 2000.

Incremental CRR of 10 per cent on the increase in liabilities under FCNR (B) scheme over the level prevailing as on April 11, 1997 was withdrawn effective from the fortnight beginning November 6, 1999.

## **2000-01**

CRR was reduced by 1.0 percentage point to 8 per cent in two stages of 0.5 percentage points each, from the fortnights beginning April 8 and April 22, 2000 respectively.

In order to provide more deployment avenues within the country and at the same time to exploit the synergy between the lending expertise of a few banks with the vast branch network of the others, it was decided that gold mobilized under the Gold Deposit scheme could be lent to other authorized banks for similar use as per the specified guidelines. Such borrowings of gold would be treated as inter-bank liabilities and be exempted from CRR.

With a view to provide further flexibility to banks and enabling them to choose an optimum strategy of holding reserves depending upon their intra-period cash flows, the requirement of minimum 85 per cent of the CRR balances on the first 13 days to be maintained on a daily basis was reduced to 65 per cent from the fortnight beginning May 6, 2000.

It was announced that the CRR would be hiked by 0.5 percentage points to 8.5 per cent in two stages of 0.25 percentage points each, effective from the fortnights beginning July 29 and August 12, 2000, respectively.

The Reserve Bank lowered the CRR by 50 basis points to 8 per cent in two stages of 0.25 percentage points each effective from fortnights beginning February 24 and March 10, 2001, respectively.

### **2001-02**

Inter-bank term liabilities with original maturity of 15 days to one year exempted from the prescription of minimum Cash Reserve Ratio (CRR) requirement of 3 per cent, effective fortnight beginning August 11, 2001.

CRR reduced by 0.50 percentage points from 8 per cent to 7.5 per cent effective fortnight beginning May 19, 2001, augmenting lendable resources of banks by about Rs. 4,500 crore.

CRR was rationalized through (a) reduction by 200 basis points from 7.50 per cent to 5.50 per cent and (b) withdrawal of exemptions on all liabilities except inter-bank for the computation of net demand and time liabilities (NDTL) for the purpose of maintenance of CRR, with effect from the fortnight beginning November 3, 2001.

### **2002-03**

CRR was reduced from 5.5 to 5 per cent effective from fortnight beginning June 15, 2002.

The CRR reduction by 0.5 percentage point from the then existing level of 5.5 per cent, initially proposed to be effective from fortnight beginning June 15, 2002, was advanced to reporting fortnight beginning June 1, 2002.

CRR was further reduced by 25 basis points to 4.75 per cent, effective from fortnight beginning November 16, 2002.

With a view to provide flexibility to banks in choosing an optimum strategy of holding reserves depending upon their intra-period cash flows, the requirements of daily maintenance of minimum 80 per cent of the CRR balances was reduced to 70 per cent with effect from the fortnight beginning December 28, 2002.

#### **2003-04**

CRR was reduced by 0.25 percentage points from 4.75 per cent to 4.50 per cent with effect from fortnight beginning June 14, 2003.

Interest on eligible CRR balances maintained by banks with the Reserve Bank to be paid on a monthly basis (as against the existing practice of quarterly basis) starting from April 2003.

Regarding computation of NDTL for the purpose of maintenance of CRR/SLR, banks were advised to reckon the liability in respect of arrangement with correspondent banks as follows. i) The balance amount in respect of the drafts issued by the accepting bank on its correspondent bank under the remittance facility scheme and remaining unpaid amount should be reflected in the accepting banks' books as an outside liability and the same should be taken into account for computation of NDTL for CRR/SLR purpose. and ii) The amount received by correspondent banks to be shown as 'Liabilities to the Banking System' by them and not as 'Liabilities to others' and this liability could be netted off by the correspondent banks against their inter-bank assets. Likewise, sums placed by banks issuing drafts/ interest/ dividend warrants are to be treated as 'Assets with Banking system' in their books and can be netted off from their inter-bank liabilities.

### **2004-05**

- i) Cash reserve ratio (CRR) was increased by one-half of one percentage points of Net Demand and Time Liabilities (NDTL) in two stages- 4.75 per cent effective from September 18, 2004 and 5 per cent effective from October 2, 2004.

### **2005-06**

There was no change in the CRR during 2005-06.

### **2006-07**

- i) CRR was raised by 50 basis points in two stages (25 basis points each) effective from the fortnights beginning from December 23, 2006 (to 5.25 % ) and January 6, 2007 ( to 5.5 %). These were to rein inflation.
- ii) CRR was further raised by 50 basis points in two stages (25 basis points each), effective from the fortnights beginning from February 17, 2007 ( to 5.75 %) and March 3, 2007 ( to 6 %)

### **2007-08**

- i) CRR was raised by 50 basis points in two stages ( 25 basis points each), effective from the fortnights beginning from April 14, 2007 (6.25 per cent) and April 28, 2007 (6.50 per cent)
- ii) CRR raised by 50 basis points to 7 per cent effective from the fortnight beginning August 4, 2007.
- iii) All SCBs (excluding RRBs) were advised to increase the CRR by 50 basis points of their NDTL in two stages to 6.25 per cent and 6.50 per cent, respectively effective from the fortnights beginning April 14, 2007 and April 28, 2007. However, the effective CRR maintained by SCBs on total demand and time liabilities should not be less than 3 per cent, as stipulated under the RBI Act, 1934. With effect from the fortnight beginning April 14, 2007 the SCBs were paid

interest at the rate of 0.50 per cent per annum on eligible cash balances maintained with the Reserve Bank under CRR requirement.

- iv) All SCBs (excluding RRBs) were informed that they were exempted from maintaining average CRR with effect from April 1, 2007 on: i) liabilities to the banking system in India as computed under clause (d) of the explanation to section 42, (i) of the RBI Act, 1934; (ii) credit balances in ACU (US\$) accounts (iii) transactions in collateralized borrowing and lending obligation (CBLO) with CCIL; and (iv) demand and time liabilities in respect of their Offshore Banking Units (OBUs).
- v) All SCBs were directed to increase the CRR by 50 basis points to 7 per cent with effect from the fortnight beginning August 4, 2007.
- vi) All SCBs (excluding RRBs) were directed to increase the CRR by 50 basis points to 7.5 per cent of their NDTL with effect from the fortnight beginning November 10, 2007. Similar circular was also issued for RRBs on October 31, 2007.

### **2008-09**

- i) CRR of scheduled banks were increased by 50 basis points of their NDTL in two stages of 25 basis points each to 7.75 and 8 per cent (effective from April 26 and May 10, 2008)
- ii) CRR of scheduled banks were increased further to 8.25 per cent with effect from the fortnight beginning May 24, 2008.
- iii) The CRR of the SCBs, RRBs, scheduled State co-operative banks and scheduled primary UCBs was increased by 50 basis points to 8.75 per cent in two stages ( 25 basis points each) effective from the fortnights July 5, 2008 and July 19, 2008 respectively)
- iv) CRR increased by 25 basis points to 9 per cent with effect from the fortnight beginning August 30, 2008.



- v) The CRR was proposed (October 6, 2008) to be reduced from the existing level of 9 per cent of NDTL by 50 basis points to 8.5 per cent of NDTL with effect from the fortnight beginning October 11, 2008. This was for expanding credit to deal with global financial crisis.
- vi) But the CRR was again reduced by 150 basis points to 7.5 per cent of NDTL with effect from the fortnight beginning October 11, 2008.
- vii) CRR was further reduced by 100 basis points to 6.5 per cent of NDTL with effect from October 11, 2008.
- viii) The CRR was kept unchanged at 6.5 per cent on October 20, 2008.
- ix) The CRR of scheduled banks was reduced by 100 basis points from 6.5 per cent to 5.5 per cent of NDTL which were effected in two stages: by 50 basis points retrospectively with effect from the fortnight beginning October 25 and by a further 50 basis points prospectively with effect from fortnight beginning November 8, 2008.
- x) The CRR of scheduled banks was again reduced by 50 basis points from 5.5 per cent to 5 per cent of NDTL with effect from the fortnight beginning January 17, 2009 releasing around Rs. 20,000 crore into the system.
- xi) CRR was kept unchanged at 5 per cent on March 4, 2009.

### **2009-10**

- i) Effective from February 13, 2010, CRR was increased by 50 basis points to 5.50 per cent.
- ii) CRR was further increased to 5.75 per cent on February 27, 2010. These were to control inflation.

### **2010-11**

- i) The CRR was kept unchanged at 5.75 per cent on April 20, 2010.

ii) Effective from April 24, 2010, CRR was increased by 25 basis points to 6 per cent.

iii) The CRR was kept unchanged at 6 per cent on July 2, 2010. <sup>(6)</sup>

**Table VI.2**  
**Movements in CRR during 1991-2010**

<b>Year</b>	<b>Effective since</b>	<b>CRR (%)</b>	<b>Change</b>	<b>Remarks</b>
1992-93	April 17, 1992	15.00		
	Oct 17, 1992	15.00	No change	
1993-94	April 17, 1993	14.50	(-0.50)	To reflect the stance of monetary policy
	May 15, 1993	14.00	(-0.50)	„
1994-95	June 11, 1994	14.50	(+0.50)	To mop up excess liquidity and curtail inflation
	July 9, 1994	14.75	(+0.25)	„
	Aug 6, 1994	15.00	(+0.25)	„
1995-96	Nov 11, 1995	14.50	(-0.50)	For facing disinflation
	Dec 9, 1995	14.00	(-0.50)	„
1996-97	April 27, 1996	13.50	(-0.50)	To augment the lendable resources of banks
	May 11, 1996	13.00	(-0.50)	„
	July 6, 1996	12.00	(-1.00)	„
	Oct 26, 1996	11.50	(-0.50)	„
	Nov 9, 1996	11.00	(-0.50)	„
	January 4, 1997	10.50	(-0.50)	„
	January 18, 1997	10.00	(-0.50)	„

Source: RBI Publications (various years)

**Table VI.2(Contd.)**

<b>Year</b>	<b>Effective since</b>	<b>CRR (%)</b>	<b>Change</b>	<b>Remarks</b>
1997-98	Oct 25,1997	9.75	(-0.25)	On contingent basis(subject to chance)
	Nov, 22,1997	9.50	(-0.25)	„
	Dec 6, 1997	10.00	(+0.50)	To maintain financial stability
	Jan 17, 1998	10.50	(+0.50)	„
	Mar 28, 1998	10.25	(-0.25)	To modulate credit availability
1998-99	April 11, 1998	10.00	(-0.25)	„
	Aug 29, 1998	11.00	(+1.00)	To absorb excess liquidity temporarily for preventing speculative measures
	March 13, 1999	10.50	(-0.50)	To modulate liquidity
1999-2000	May 8, 1999	10.00	(-0.50)	„
	Nov 6, 1999	9.50	(-0.50)	
	Nov 20, 1999	9.00	(-0.50)	
2000-01	April 8, 2000	8.50	(-0.50)	
	April 22, 2000	8.00	(-0.50)	
	July 29, 2000	8.25	(+0.25)	For stabilizing broad money expansion
	Aug 12, 2000	8.50	(+0.25)	„
	Feb 24, 2001	8.25	(-0.25)	To release more money
	March 10, 2001	8.00	(-0.25)	„
2001-02	May 19, 2001	7.50	(-0.50)	
	Nov 3, 2001	5.75	(-1.75)	For getting the rate rationalized
	Dec 29, 2001	5.50	(-0.25)	„
2002-03	June 1, 2002	5.00	(-0.50)	To expand credit
	Nov 16, 2002	4.75	(-0.25)	„
2003-04	June 14, 2003	4.50	(-0.25)	

Source: RBI Publications (various years)

**Table VI.2(Contd.)**

2004-05	Sept 18, 2004	4.75	(+0.25)	To rein inflation
	Oct 2, 2004	5.00	(+0.25)	„
2005-06		5.00	No Change	
2006-07	Dec 23, 2006	5.25	(+0.25)	
	January 6, 2007	5.50	(+0.25)	
	Feb 17, 2007	5.75	(+0.25)	
	March 3, 2007	6.00	(+0.25)	
2007-08	April 14, 2007	6.25	(+0.25)	
	April 28, 2007	6.50	(+0.25)	
	August 4, 2007	7.00	(+0.50)	
	Nov 10, 2007	7.50	(+0.50)	To absorb excess liquidity
2008-09	April 26, 2008	7.75	(+0.25)	„
	May 10, 2008	8.00	(+0.25)	
	May 24, 2008	8.25	(+0.25)	
	July 5, 2008	8.50	(+0.25)	
	July 19, 2008	8.75	(+0.25)	
	Aug 30, 2008	9.00	(+0.25)	
	Oct 11, 2008	6.50	(-2.50)	For expanding credit to deal with global financial crisis
	Oct 25, 2008	6.00	(-0.50)	„
	Nov 8, 2008	5.50	(-0.50)	„
	Jan 17, 2009	5.00	(-0.50)	
2009-10	Feb 13, 2010	5.50	(+0.50)	To control inflation
	Feb 27, 2010	5.75	(+0.25)	„
	April 24, 2010	6.00	(+0.25)	For financial stability

Source: RBI Publications (various years)

When the Reserve Bank started its functioning, as per section 42 of the RBI Act, 1934, the Cash Reserve Ratio (CRR) was decided as 13.5 per cent on July 5, 1935. Accordingly, each and every commercial bank has been keeping a particular

percentage of their net demand and time liabilities as liquid cash (cash reserve) with the RBI. In order to improve cash management by banks, CRR is required to be maintained by every scheduled commercial bank based on its NDTL as on the last Friday of the second preceding fortnight.

As a part of rationalization of the rate, the CRR was reduced sharply from 7.5 to 5.5 per cent during 2001-02. Again, during 2008-09, for expanding credit to deal with global financial crisis, the rate was sharply reduced at a time from 9 to 6.5 per cent. There was a decline of 275 basis points in the range of CRR from 7.75 to 5 per cent during the year. In the previous years, it was only in 1996-97, the CRR showed such a diminishing trend and variation, i.e. it fell down from 13.50 to 10 per cent in that single financial year. The CRR was kept unchanged only in two years in the period of our study, i.e. in the beginning (1992-93) and during 2005-06.

If one looks at the movement of CRR, from 1935 onwards till 2010, one would find that the CRR was showing a more than fifty per cent downward trend (15 per cent - 6 per cent). It was progressively reduced from the maximum rate of 15 per cent in 1992 to 6 per cent in 2010. It never made a move above that level during the entire period. However, there were frequent variations in the ratio, most often, many times during a single financial year (Table VI.2).

Taking the trend of CRR as a whole, we can understand that it has been playing a very active role during the post-reform period and it seems to be the most frequently used one among the monetary weapons. It acts mainly two roles quite well; as a financial stabilizer by curtailing inflation and at the same time by helping to provide credit, it contributes positively to economic growth.

### **6.1.3. STATUTORY LIQUIDITY RATIO (SLR)**

Every bank is required to maintain a minimum percentage of their net demand and time liabilities as liquid assets in the form of cash, gold and unencumbered approved securities. This ratio of liquid assets to demand and time liabilities is known as statutory Liquidity Ratio (SLR). At present, SLR is 25 per cent in India. RBI is empowered to increase this ratio up to 40 per cent.

This method of credit control was developed during the Second World War. This was first developed by Belgium in 1946 and later it was adopted by Italy in 1947 and France in 1948. Then other countries also adopted it from time to time.

The difference between CRR and SLR is that cash Reserves are to be kept with the Central Bank whereas statutory ratio is maintained by the commercial banks concerned.

The SLR operates as an instrument of monetary control in two distinct ways. One is by affecting the borrowings of the government from the RBI and the other is by affecting the freedom of banks to sell government securities or borrow against them from the RBI. In both the ways the creation of High powered money is affected and thereby variations in the supply of money.

The SLR has been a flexible tool of monetary policy as all these years it has been changed in only one, namely downward, direction due to the continuous pressure for transferring more and more bank funds to the government. For aggregate monetary control, it works indirectly rather than directly. Therefore, its role as a monetary control is not fully understood. The chief direct role of the SLR is to govern, how so ever imperfectly, the allocation of total bank credit between the government and the commercial sector. The indirect role of monetary control is played through this direct role.

There are two reasons for raising statutory liquidity requirements by the Reserve Bank of India:

- (1) To reduce commercial banks' capacity to create credit and thus help to check inflationary pressures.
- (2) To make larger resources available to the government.

The experience of the Reserve Bank had been that wherever it raised the CRR, the commercial banks defeated the purpose by increasing their liquidity power through the sale of Government securities. With a view to check this tendency, the SLR was raised to 25 per cent in 1962, 30 per cent in November 1972 and 38.5 per cent on 22

September 1990. In view of the Narasimham Committee Report, the government decided to reduce SLR in stages from 38.5 per cent to 25 per cent. The variations in the SLR during the report of our present study are as follows:

### **1992-93**

- i) It was announced on February 29, 1992 that up to the level of the outstanding domestic NDTL as on April 3, 1992, SLR was frozen at 38.5 per cent and for any increase in domestic NDTL over April 3, 1992 level, the SLR will be reduced from 38.5 per cent to 30 per cent.
- ii) SLR on the level of outstanding NDTL as on April 3, 1992 was reduced from 38.5 per cent to 37.75 per cent in three phases, i.e. 38.25 per cent effective from the fortnight beginning January 9, 38 per cent from February 6 and 37.75 per cent from March 6, 1993.

### **1993-94**

- i) SLR on domestic NDTL as on April 3, 1992 (base date) was reduced to 37.5 per cent from August 21 and 37.25 per cent from September 18, 1993.
- ii) The base date for SLR on domestic NDTL was brought forward from April 3, 1992 to September 17, 1993 and SLR was fixed at 34.75 per cent of domestic NDTL up to the level as on September 17, 1993.
- iii) SLR for any increase in domestic NDTL over the level as on September 17, 1993 (base date) was reduced from 30 per cent to 25 per cent.

### **1994-95**

- i) SLR on the level of domestic NDTL as on September 17, 1993 was reduced from 34.75 per cent to 34.25 per cent effective from August 20, 1994 and 33.75 per cent effective from September 17, 1994.
- ii) The base date for SLR on domestic NDTL was brought forward from September 17, 1993 to September 30, 1994 and SLR was fixed at 31.5 per cent and for any increase in domestic NDTL over the level as on September 30, 1994 (new base date), the SLR was fixed at 25 per cent.

### **1995-97**

There was no change in SLR during 1995-97.

### **1997-98**

- i) With a view to facilitate the development of a more realistic rupee yield curve and term money market, banks were exempted from maintenance of SLR on inter-bank liabilities from April 26, 1997.
- ii) Effective from October 22, 1997, the multiple prescriptions of SLR were withdrawn and SLR was further reduced to 25 per cent which is the statutory minimum requirement applicable on the entire net liabilities.

### **1998-99**

There was no change in SLR during 1998-99.

### **1999-2000**

- i) Recalling the announcement made on March 14, 1998 that gold borrowed by authorized banks from abroad would form part of the time and demand liabilities and would be subject to CRR and SLR, it was decided on a review that the gold borrowed from abroad and lent to jewellery exporters in India for the purpose of exports would be exempted from the CRR and SLR requirements with effect from the fortnight beginning July 31, 1999. It is with the condition that the effective SLR maintained by the banks on total NDTL, including the liabilities under gold borrowed from abroad and lent to jewellery exporters in India for the purpose of exports should be 25 per cent.
- ii) It was decided that the effective SLR maintained by the nominated banks on total NDTL including the liabilities under Gold Deposit Scheme should not be less than 25 per cent.

### **2000-03**

There was no change in SLR from 2000 to 2003.

### **2003-2004**

- i) Regarding computation of NDTL for the purpose of maintenance of CRR/SLR, banks were advised to reckon the liability in respect of arrangement with



correspondent banks as follows. i) The balance amount in respect of the drafts issued by the accepting bank on its correspondent bank under the remittance facility scheme and remaining unpaid amount should be reflected in the accepting banks' books as an outside liability and the same should be taken into account for computation of NDTL for CRR/SLR purpose and ii) the amount received by correspondent banks to be shown as 'Liabilities to the Banking System' by them and not as 'Liabilities to others' and this liability could be netted off by correspondent banks against their inter-bank assets. Likewise, sums placed by banks issuing drafts/ interest/ dividend warrants are to be treated as 'Assets with Banking System' in their books and can be netted off from their inter-bank liabilities.

#### **2004-07**

There was no change in SLR from 2004 to 2007.

#### **2007-08**

- i) All RRBs and their sponsor banks were advised that the exemption from mark to market norms in respect of their investments in SLR securities was extended by one more year, i.e. for the financial year 2007-08. Accordingly, RRBs could classify their entire investment portfolio of SLR securities under HTM for the financial year 2007-08, with valuation on book value basis and amortization of premium, if any, over the remaining life of securities.
- ii) All SCBs (excluding RRBs and local area banks) were allowed to invest in unrated bonds of companies engaged in infrastructure activities within the ceiling of 10 per cent for unlisted non-SLR securities to encourage the flow of credit to infrastructure sector.

#### **2008-09**

- i) The SLR was reduced to 24 per cent of NDTL with effect from the fortnight beginning November 8, 2008.
- ii) The additional liquidity support exclusively for the purpose of meeting the liquidity requirements of mutual funds was extended and banks were allowed to avail liquidity support under the LAF through relaxation in the maintenance of

SLR to the extent of 1.5 per cent of their NDTL. This relaxation in SLR is to be used exclusively for the purpose of meeting the funding requirements of NBFCs and MFs.

- iii) Liquidity support under the LAF through relaxation in the maintenance of SLR to the extent of 1.5 per cent of their NDTL for the purpose of meeting the funding requirements of NBFCs, MFs and HFCs, which was available up to March 31, 2009, was extended to June 30, 2009.

### **2009-10**

Effective from November 7, 2009, SLR was increased by 100 basis points to 25 per cent from 24 per cent.<sup>(7)</sup>

**Table VI.3**  
**Movements in SLR during 1991-2010**

<b>Year</b>	<b>Effective since</b>	<b>SLR (%)</b>	<b>Change</b>	<b>Remarks</b>
1992-93	April 3, 1992	38.50		
	Jan 9, 1993	38.25	(-0.25)	For getting access to liquidity
	Feb 6, 1993	38.00	(-0.25)	„
	Mar 6, 1993	37.75	(-0.25)	„
1993-94	Aug 21, 1993	37.50	(-0.25)	„
	Sept 18, 1993	37.25	(-0.25)	„
	Oct 10, 1993	34.75	(-2.50)	„
1994-95	Aug 20, 1994	34.25	(-0.50)	„
	Sept 17, 1994	33.75	(-0.50)	„
	Oct 29, 1994	31.50	(-2.25)	„
1995-97		31.50	No change	„
1997-98	Oct 22, 1997	25.00	(-6.50)	As a part of executing the Narasimham Committee Recommendation
1998-2008		25.00	No change	„
2008-09	Nov 8, 2008	24.00	(-1.00)	For withstanding global crisis
2009-10	Nov 7, 2009	25.00	(+1.00)	For curtailing inflation and keeping the ratio stable

Source: RBI Publications (various years)

The Section 24 of the Banking Regulation Act, 1949 deals with the maintenance of statutory Liquidity Ratio (SLR). The statutory liquidity ratio started its ride on March 16, 1949 with a rate of 20 per cent. Accordingly, each and every bank had to keep twenty percentage of its total net demand and time liabilities (NDTL) as liquid asset. Since then, it had a steady rise until the value reached at 38.50 per cent on September 22, 1990. For the next two years, there was no change in the value of SLR, but it started its declining trend by January 9, 1993. Then the value of SLR was 38.25per cent (Table VI.3). From that period, there is a steady fall in the rate until it reached at 25 per cent on October 25, 1997. It remained there for a long period, i.e. ten years from 1997 to 2007. After that, it has been further reduced by 1 percentage points and it reached at 24 per cent on November 8, 2008. It was reduced as a precaution to the global financial crisis which already started up during the period. Again, during the last financial year (2009-10) in order to fight with rising prices and inflation, it has been increased to the previous position, i.e. to 25 per cent on November 7, 2009. It is still continuing the rate. This shows that after a steady decrease and stagnant position, SLR is regaining its role and it is active now among the monetary techniques and policies.

#### **6.1.4. OPEN MARKET OPERATIONS**

According to De Kock, “open market operations imply the purchase and sale of securities by central bank in the open market”.<sup>(8)</sup>

To R.A.Young, “Open Market operations consist of central banks’ purchases or sales of securities in the open market”.

The term, ‘open market operations’ stands for the purchase and sale of Government securities by the RBI from/to the public and banks on its own account. In its capacity as the Government’s banker and as the manager of public debt, the RBI buys all the unsold stock of new Government loans at the end of the subscription period and thereafter keeps them on sale in the market on its own account. Such purchases of Government securities by the RBI are not genuine market purchases, but constitute only an internal arrangement between the Government and RBI whereby the

new Government loans are sold, not directly by the Government but through the RBI as its agent. <sup>(9)</sup>

The open market operation policy is that policy by which the central bank contracts or expands the credit by sale or purchase of securities in the open market. Hence, it attempts to increase or decrease the credit in the system by directly influencing the cash reserves with the banking system. In recent times, open market operations are being used increasingly as an instrument of credit control.

During inflation, the RBI sells securities in the market. The individual buyers make payments by withdrawing their deposits with banks. If the buyers are commercial banks, their cash holding with the central bank gets reduced. So the banks are forced to stop grant fresh loans and recall loans already granted. The investment activity in the economy gets slackened and the inflationary situation is reduced.

During depression or crisis, the central bank purchases securities from the open market, in which banks are also included. The RBI pays cash in return to the sellers of the securities. The public deposits their money with the banks. This increase the cash balances of commercial banks which are used to give fresh loans. There will be a rise in the level of economic activity and consequent increase in the level of investment, employment and price.

During the post-reform period, the RBI makes use of open market operations as an effective instrument for liquidity management. Through the instrument of open market operations, together with LAF, RBI is able to withdraw liquidity or inject liquidity in the system as part of a conscious policy of monetary control.

In broader sense, open market operations are said to cover purchases and sales of equities, gold and foreign exchange, besides Government securities. But in most countries, these operations are confined to the sales and purchases of Government securities. It is generally adopted to achieve the following objectives.

- 1) To influence the cash reserves with the banking system.
- 2) To influence interest rates.

- 3) To stabilize the securities market by avoiding undue fluctuations in the prices and yields of securities.
- 4) To control the extreme business situations of inflation and deflation.
- 5) To achieve a favorable balance of payments position.
- 6) To supplement the bank rate policy and thus to increase its efficiency.

Open market operation as an instrument of monetary control is quite simple to understand. Every open market purchase by the RBI increases High-powered money (H) by equal amount; every sale decreases it. Thereafter the money multiplier process takes over and affects the supply of money in the standard way. It matters little whether the RBI buys or sells securities from/to banks or the non-bank public except that in the former case the reserves of banks are affected directly, in the later case indirectly. We are, of course, assuring that the banks remain fully loaned up all the time; that is, their actual excess reserves are always equal to their desired excess reserves. There are side effects too, via changes in the Government bond rates of interest. But in India, because of the captive nature of the Government bond market and the RBI's monopoly position, these effects are rather small.

In developed countries like USA and UK, open market operations are regarded as technically the most efficient instruments of monetary policy, because they are highly flexible. They can be used continuously in widely-varying amount one way or the other as required and at the option of the central bank, they are easily reversible in time, they involve no public announcement as changes in the other policy rates do, and do not carry 'announcement effects' with them. Their direct effect on it is immediate and the amount of it directly created or destroyed by them is determined precisely. These are all the merits of open market operations.

According to Keynes, the policy of open market operation is sufficient to control credit as it can be practiced in independently. But according to Hawtrey, open market operation policy cannot operate independently. It can succeed only when supported by bank rate policy.

Another opinion of Clark is that from the stand point of credit, open market operations are complementary to bank rate policy. These two policies are complementary to each other and hence, one must back up the other for the desired effect. In modern times, open market operations are more direct, potent and effective techniques of credit control as compared to the other monetary tools.

However, the open market operations suffer from certain limitations. The success of the policy of open market operations requires the existence of a well-organized and well developed securities market in the country. The policy will be successful only if there is a sufficient stock of suitable securities with the central bank. It also requires that the commercial bank should keep reserves just sufficient to satisfy the legal requirements. Credit expansion and contraction by banks depend more or less on the attitudes of the investors. The policy may become ineffective due to the operation of some extraneous factors in the economy like unfavorable balance of payments or decrease in the velocity of circulation. For the success of the policy, the commercial banks should have no direct access to the central bank. The success of the open market operations is also limited by the willingness of the central bank to incur losses. The policy is more successful in controlling an expansion of credit during inflation rather than a contraction of credit during depression.

The reforms in the Government securities market with its various objectives and outcomes in different years are given in the following Chart (VI.4.). We can observe the relevant changes in the market and policy variables, if we are going through it.

Table: VI.4

<b>Reforms in the Government Securities Market</b>			
<b>Year</b>	<b>Reform Initiated</b>	<b>Objective</b>	<b>Outcome</b>
1	2	3	4
June 1992	Introduction of auction method for issue of Central Government securities	To make yields on government securities market determined.	Price discovery has improved over a period of time.
January 1994	Zero Coupon Bond was issued for the first time. Securities Trading Corporation of India (STCI) commenced operations	To add new instruments and intermediaries.	STCI and other PDs have become important intermediaries in the government securities market.
August 1994	Agreement between the Reserve Bank and Government of India on limiting issue of <i>ad hoc</i> Treasury Bills.	To do away with automatic monetization.	Cash management of Government has improved.
March 1995	Primary Dealer system introduced.	To strengthen the market Intermediation and support primary issue.	PD system has evolved as an important segment of government securities market.
July 1995	Delivery <i>versus</i> Payment (DvP) system in government securities was introduced.	To reduce settlement risk.	Transition from DvP-I method (funds and securities settlement on gross basis) to DvP-III method (funds and securities settlement on net basis) has been made.
September 1995	Floating Rate Bonds (FRBs) introduced.	To add more instruments.	FRBs were discontinued after the first issuance due to lack of market enthusiasm. FRBs were reintroduced in November 2001 but were again discontinued in October 2004.
January 1997	Technical Advisory Committee (TAC) was constituted.	To advise Reserve Bank on developing government securities, money and forex markets.	Plays a pivotal role in implementing the Reserve Bank's reform agenda based on a consultative approach.

(Contd.)

Table: VI.4. (Contd.)

<b>Reforms in the Government Securities Market</b>			
<b>Year</b>	<b>Reform Initiated</b>	<b>Objective</b>	<b>Outcome</b>
March 1997	Introduction of WMA system for Centre.	Discontinuation of automatic monetization.	Transparency and pricing has improved. Has imparted greater autonomy in monetary policy making.
April 1997	FIMMDA was established.	Introduction of self regulation and development of market practices and ethics.	Market practices have improved.
July 1997	Foreign Institutional Investors (FIIs) were permitted to invest in government securities.	To broaden the market.	FIIs have become important players in the market, particularly in the Treasury Bill segment.
December 1997	Capital Indexed Bonds were issued.	To help investors hedge inflation risk.	Efforts are being made to revitalize this product.
April 2000	Sale of securities allotted in primary issues on the same day.	To improve secondary market.	This has also helped in managing the overnight risk.
February 2002	Clearing Corporation of India Limited (CCIL) was established.	To act as a clearing agency for transactions in government securities.	Stability in market has improved, greatly mitigating the settlement risk.
June 2002	PDs were brought under the jurisdiction of Board for Financial Supervision (BFS).	For integrated supervision of market.	The position is being reported periodically to BFS.
October 2002	Trade data of NDS made available on Reserve Bank website.	To improve transparency.	The measure is helping the small investors as well.
January 2003	Retail trading of government securities permitted on stock exchanges.	To facilitate easier access and wider participation.	This has not taken off very well. Efforts are being made to improve the position.
February 2003	Regulated constituents permitted participation in repo markets.	To widen the market.	Activity in the repo market has improved.

(Contd.)



Table: VI.4. (Contd.)

<b>Reforms in the Government Securities Market</b>			
June 2003	Interest Rate Futures were introduced.	To facilitate hedging of interest rate risk.	These futures have not taken off.
July 2003	Government Debt buyback scheme was implemented.	To reduce interest burden of government and help banks offload illiquid securities.	Other measures for active consolidation being considered.
March 2004	Introduction of DvP III.	To obtain netting efficiency and to enable rollover of repos.	Running successfully.
April 2004	Introduction of RTGS.	To provide real time, online, large value inter-bank payment and settlements.	Running successfully.
August 2005	The Negotiated Dealing System-Order Matching (NDS-OM), an anonymous order matching system which allows straight-through processing (STP) was established.	To provide the NDS members with a more efficient trading platform.	Over 60 per cent of transactions in government securities are done through NDS-OM.
February 2006	Intra-day short selling permitted. This was later extended to five trading days, effective January 31, 2007.	To improve liquidity in market, particularly in the rising interest rates phase.	Is in a nascent stage of development.
August 2006	Commencement of 'When Issued' trading.	Efficient price discovery and distribution of auctioned stock.	Is in a nascent stage of development.
August 2006	Government Securities Act, 2006 passed by the Parliament.	To facilitate wider participation in government securities market and create the enabling provisions for issue of Separately Traded Registered Interest and Principal Securities (STRIPS).	Proceeding with the new Rules.

Source: RBI Occasional paper (special edition, 2009)

A brief summary of the policy changes in government securities market in India during the pre-reform and post- reform period are given below.

### **Central Government Securities Market: Pre-Reform Period**

- Impact
  - Preemption of Financial Savings
  - No possibility of Price Discovery
  - Dormant Debt Market
  - Features
    - Administered and Low Interest Rates
    - High Statutory Liquidity Ratio (SLR)
    - Automatic Monetization of Budget Deficit
    - High Cash Reserve Ratio (CRR)

### **Reforms in the Central G-Securities Market**

- Three Phases
  1. First Phase (1992-95)
    - Creation of Enabling Environment
      - Elimination of Automatic Monetization
      - Introduction of Auctions
      - SLR reduced
  2. Second Phase (1995-2000)
    - Institutional Development
      - DvP
      - Primary Dealers
      - FIMMDA and PDAI
    - Instrument Diversification
      - Floating Rate Bonds
      - Capital Indexed Bonds
  3. Third Phase (2000 onwards)
    - Enhance Liquidity and Efficiency
    - Indicative Auction Calendar
    - Non-Competitive Bidding Facility
    - Liquidity Adjustment Facility
    - Repo and collateralized borrowing lending system

- Negotiated Dealing System (NDS), STP and CCP
- Interest Rate derivatives
- Market Stabilization Scheme
- Foreign investment in local currency debt instruments
- Conversion of special securities into marketable debt

Sections (178) and 17 (2) (a) of Reserve Bank of India Act authorize the Reserve Bank to purchase and sell the Government securities, treasury bills and other approved securities. However, due to under developed security market the open market operations of the Reserve Bank are restricted to Government securities. These operations have also been used as a tool of public debt management. They assist the Indian Government in raising borrowings. Generally, the RBIs annual sales of securities have exceeded the annual purchases because of the reason that the financial institutions are required to invest some portion of their funds in Government and approved securities.

Prior to November 1951, the Reserve Bank was following the policy of comparatively free purchase of securities. This policy was changed in November 1951. Since then the Banks purchase of securities have been mostly ‘switch operations’, i.e. purchasing one security against the sale of another and vice versa to maintain an orderly pattern of yields. The open market operations have been more flexible and purposeful after 1961.

The Indian gilt-edged market is narrow and a sizeable portion of the public debt is held by a few large institutions. There are, however, no continuous buying and selling of securities that are so essential for an active market. Moreover, the gilt-edged market in India is mainly a broker’s market rather than a dealers market. In view of these limitations the open market operations in India have not performed the role of a full-fledged instrument of credit policy.

Since 1992-93, steps have been taken to develop a Government securities market in the country; for example, the introduction of dated securities, zero-coupon Bonds, 91-day Treasury bills, 364-day Treasury Bills etc. Normally, the sale of securities by the Reserve Bank of India exceeds their purchases. For example, during

1993-94, in order to tackle the problem of excess liquidity resulting from large foreign exchange inflows the Reserve Bank sold Government securities worth Rs.9,717 crore while its purchases amounted to Rs. 1,142 crore during this period. When the foreign exchange inflows slowed down in 1994-95, the Reserve Bank sold securities worth Rs.2, 291 crore and purchased securities worth Rs. 1,440 crore.

Open market operations involve the sale or purchase of Government securities by the Central Bank. When the Central Bank sells Government securities in the market it withdraws a part of the deposit resources of the banking sector thereby reducing resources available with the bank for lending. At any given time, the banks' capacity to create credit (give fresh loans) depends upon its surplus cash i.e. the amount of cash resources in excess of the statutory cash reserve ratio (stipulated by the Central Bank). Open market sale of Government securities reduces the surplus cash resources of banks, contracting the base for credit creation. Once free reserves are eliminated banks have to contract their credit supply so as to generate some cash reserves to meet the statutory CRR. As a result, the supply of bank credit which involves the creation of demand deposit falls, and money supply contracts. The opposite happens when the Central Bank undertakes open market purchase of government securities from the market. The stock of securities with the seller bank is reduced and the free surplus cash expands, thus augmenting their credit creation capacity. The result is therefore an expansion in the supply of bank credit and an increase in money supply.

Open market sale involves sale of Government securities owned by RBI and the proceeds eventually appear as a reduction in the bank's cash balances and other deposits held by RBI (a decrease in balance sheet deposits). Open market operations do not alter the total stock of Government securities but change the proportion of securities held by the Central Bank and commercial and co-operative banks. Open market sales will result in fall in Net RBI credit to Government (NRCG) and an increase in other (commercial and co-operative) bank's credit to Government (OBCG) without affecting the budget (or fiscal) deficit in any way.

The Central Bank as the manager of the issue of public debt also sells Government securities in the market on behalf of the Central Government. As a public

debt manager the RBI is merely selling securities owned by the Government. The total supply of Government securities expand in this case.

Financial reform has paved the way for emergence of open market operations and interest rates as important instruments in the conduct of monetary policy. The RBI has noted that there is growing integration of financial markets and linkage among money, Government securities and foreign exchange markets. Institutional measures have been undertaken to promote greater integration of financial markets.

Based on the recommendation of Narasimham Committee (II) on banking sector reforms, RBI announced number of decisions. These decisions relate to phased introduction of risk weight for Government approved securities also.

In short, Government securities operations in the secondary market at market related prices is OMO while the RBI would need time in order to ensure the success of such operations, OMO in the long run depends on the market demand for Government paper, which in turn depends on SLR requirements and the liquidity situation.

Gilt edged securities are the Government securities or the securities guaranteed by the Government. The term 'gilt edged' means 'of the best quality'. The Government securities are regarded as of best quality because these securities are highly liquid and can be easily sold in the market at the prevailing price. These 'Gilt Edged' securities include long-term bonds like National Saving Certificate, Gold Bonds, Railway Bonds, and Special Bearer Bonds, issued by the central and state Governments to borrow long term funds.

A Securities Trading Corporation of India has been set up to deal in Government securities. The Government securities have become very important credit instrument of Indian Capital Market. These Government Securities are managed by the Reserve Bank of India.

The Treasury bill market deals in treasury bills which are the short-term i.e. 91, 182 and 364 days liability of the Government of India. Theoretically, these bills are issued to meet the short-term financial requirements of the Government. But, in reality, they have become a permanent source of funds to the Government. Every year, a

portion of treasury bills are converted into long-term bonds. Treasury bills are two types: ad hoc and regular. Ad hoc treasury bills are issued to the state Governments, semi-Government departments and foreign central banks. They are not sold to the banks and the general public and are not marketable. The regular treasury bills are sold to the banks and public and are freely marketable. Both types of ad hoc and regular treasury bills are sold by Reserve Bank of India on behalf of the central Government.

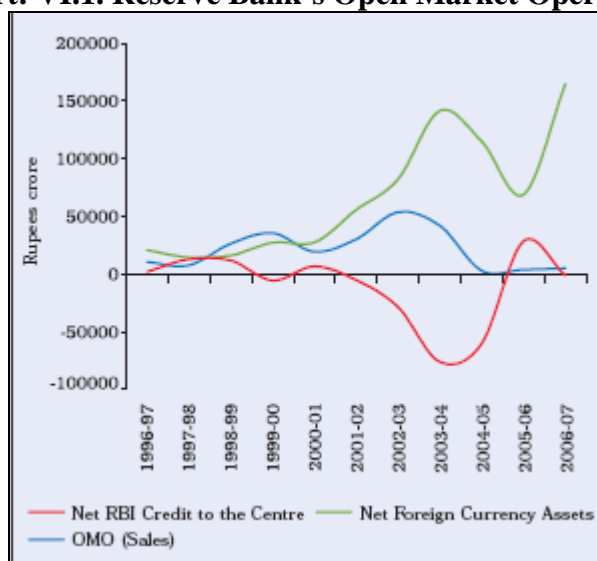
The Treasury bill market in India is under developed as compared to the Treasury bill markets in U.S.A and the U.K. In the U.S.A and U.K the treasury bills are the most important money market instrument. Treasury bills provide a risk-free profitable and highly liquid investment outlet for short-term surpluses of various financial institutions. Treasury bills form an important source of raising fund for the Government and for the central bank. The treasury bills are the main instrument of open market operations.

The Indian Treasury bill market has no dealers except the Reserve Bank of India. Besides the Reserve Bank, some treasury bills are held by commercial banks, State Government and semi-Government bodies. But, these treasury bills are not popular with the non-bank financial institutions, corporations and individuals mainly because of absence of a developed Treasury bill market.

Open market operations conducted by central banks are usually guided by a complex mix of liquidity, monetary and interest rate objectives especially given a backdrop of large fiscal deficits. The critical problem in case of the policy instruments such as open market operations and refinance facilities is that while the RBI often determines either the price or the potential quantity of the instrument and at times both, the precise utilization of the facility depends on banks and primary dealers (PDs). In case of refinance facilities, in quantum terms, the potential amount of liquidity could be taken to be one method of quantification. We have, however, taken the precise utilization levels which would essentially be a function of the 'enabling' conditions, in both price and quantity terms which reflect the RBIs multiple policy measures rather than utilization limits. At the same time given that the actual availing depends on

banks and PDs, these policy instruments act as ‘ in-built stabilizers’ at times when the prices are not changed.

**Chart: VI.1. Reserve Bank’s Open Market Operations**



*Source: RBI Occasional paper (special edition, 2009)*

The Open Market Operations (OMOs) have been effectively used by the Reserve Bank since the mid-1990s for sterilizing the monetary impact of capital flows by offloading the stock of government securities to the market (Chart: VI.1). The net open market sales increased from Rs.10, 464 crore in 1996-97 to Rs.53, 781 crore in 2002-03. However, repeated recourse to OMOs for sterilization purposes during this period depleted the stock of government securities held by the Reserve Bank from Rs.52, 546 crore at end-March 2003 to Rs.40, 750 crore at end-March 2004, despite the conversion of the available stock of non-marketable special securities (of Rs.61, 818 crore), created out of past *ad hoc* and Tap Treasury Bills, into tradable securities during the year. Accordingly, the burden of sterilization shifted to the LAF, which was essentially designed as a tool of adjusting marginal liquidity. As a result, the open market sales by the Reserve Bank as a proportion of the accretion of securities to its gilt portfolio dropped to about 50 per cent during 2003-04 from an average of 90 per cent in the preceding five years following a switch to LAF operations (RBI, 2004).<sup>(10)</sup>

Given the finite stock of government securities in its portfolio and the legal restrictions on issuing its own paper, the Reserve Bank felt that instruments other than

LAF and OMO were needed to fulfill the objective of absorbing liquidity of a more enduring nature. This resulted in the introduction of the market stabilization scheme (MSS) in April 2004 as a special arrangement, following the recommendations of the Working Group on Instruments of Sterilization, 2003 (Chairperson: Smt. Usha Thorat). Under this arrangement, the Government issued Treasury Bills and/or dated securities in addition to the normal borrowing requirements for absorbing excess liquidity from the system. The ceiling amount, which was initially fixed at Rs.60,000 crore was raised to Rs. 80,000 crore on October 14, 2004 but reduced to Rs.70,000 crore on March 24, 2006 and again raised to Rs. 80,000 crore for 2007-08. The MSS proceeds are held in a separate identifiable cash account by the Government (reflected as equivalent cash balances held by the Government with the Reserve Bank) and are appropriated only for the purpose of redemption and/or buyback of the Treasury Bills and/ or dated securities issued under the MSS. Thus, while it provided another tool for liquidity management, it was designed in such a manner that it did not have any fiscal impact except to the extent of interest payment on the outstanding amount under the MSS.

As part of unwinding, fresh issuances under the MSS were suspended between November 2005 and April 2006. In several subsequent auctions during 2006-07, only partial amounts were accepted under the MSS. Subsequently, the amount absorbed under the MSS increased again to Rs. 62,974 crore in March 2007. The MSS has, thus, provided the Reserve Bank the necessary flexibility to not only absorb liquidity but also to ease liquidity through its unwinding, if necessary. With the introduction of the MSS, the pressure of sterilization on LAF has declined considerably and LAF operations have been able to fine-tune liquidity on a daily basis more effectively. Thus, the MSS empowered the Reserve Bank to undertake liquidity absorptions on a more enduring but still temporary basis and succeeded in restoring LAF to its intended function of daily liquidity management. Furthermore, the build up and volatility in Government's cash balances with the Reserve Bank in previous years have significantly impacted the liquidity conditions.

The Working Group on Instruments of Sterilization favored revisiting the 1997 agreement so that Government's surpluses with the Reserve Bank are not



automatically invested and can remain as interest free balances, thereby releasing government securities for further sterilization operations. Accordingly, the arrangement of allowing the Central Government to invest the surplus funds in its own paper since 1997 (to give a notional return on such balances) was discontinued temporarily from April 8, 2004. However, following the introduction of the MSS, it was partially restored with a ceiling amount in to the system. While the Government's surplus cash balances may have enabled the Reserve Bank to sterilize the monetary impact of excess liquidity, at times, it has also resulted in sudden transition in liquidity conditions. The build up of large and unanticipated cash surpluses of the Government with the Reserve Bank and its depletion over a short period poses fresh challenges for liquidity management and maintenance of stable conditions in the money market. The dynamics of surplus liquidity in the recent period shows that the total surplus liquidity (comprising MSS, LAF and Government surplus) in the system has increased over the years. Reflecting such surplus conditions in the banking system, the call money rate hovered generally around the lower bound of the corridor (*i.e.*, the reverse repo rate), which (along with the repo rate) has emerged as the main instrument of policy in the short-run.

As noted above, open market operations are therefore classified among the array of policy instruments, available to the RBI. Let us now discuss about the special features of Repos and Reverse Repos along with LAF which works as a part of open market operations under the supervision of the Central Bank.

### **6.1.5. REPO RATE**

Repo is a money market instrument, which enables collateralized short-term borrowing and lending through sale or purchase operations in debt instruments. Under a repo transaction, a holder of securities sells them to an investor with an agreement to repurchase at a pre-determined date and rate.

In short, Repo rate is the rate at which the RBI lends short term money to banks. When the repo rate increases, borrowing from RBI becomes more expensive. Therefore, we can say that in case, RBI wants to make it more expensive for the banks

to borrow money, it increases the repo rate. Similarly, if it wants to make it cheaper for banks to borrow money, it reduces the repo rate.

A repurchase agreement also known as repo, allows a borrower to use a financial security as collateral for cash loan at a fixed rate of interest. In a repo the borrower agrees to sell immediately a security from the lender at a fixed price at some later date.

A repo is equivalent to a cash transaction which results in transfer of money to the borrower in exchange for the legal transfer of the security to the lender; while the forward contract ensures repayment of the loan to the lender and return of the collateral of the borrower. The difference between the forward price and spot price is the interest on the loan, while the settlement date of the forward contract is the maturity date of the loan.

The repo gains glory in the recent years by adding more and more features and dominate other instruments. In order to activate the repo market essentially to be an equilibrating force between the money market and the Government securities market, the Reserve Bank gradually extended repo facility to all central Government dated securities and Treasury bills of all maturities. Repos help to manage liquidity conditions at the short- end of the market spectrum. It signifies lending on a collateralized basis and the inflow of cash from repo is used to meet temporary cash requirement.

In India, there are two types of repos currently in operation –

1. Inter bank Repos
2. RBI Repos

The second one is used as LAF against the collateral of Government securities.

Besides banks, PDs are allowed to undertake repo transactions. Repo under auction system was first conducted by the RBI during December 1992 for 1-14 days period. Later they were discontinued due to tightness in the market. Daily repos on fixed rate basis were reintroduced on November 29, 1997 for 3-4 day cycle. Now we can go through the progress of repo rates in India.

### **1992-93**

During the year, an active debt management policy was introduced to prudently influence the composition, maturity structure and yield of Government securities which by reducing monetized deficit and effectively controlling money supply enhanced the efficacy of monetary policy. Accordingly, many reform measures were introduced such as:

- a) Auctions of 364 day and 91-day Treasury Bills,
- b) Auction of Government dated securities of varied maturities and
- c) Repurchase Agreement (Repo) auction

### **1993-94**

There were no prominent policy measures during 1993-94.

### **1994-95**

- i) Repo facility with RBI in Government dated securities was extended to STCI and DFHI to provide liquidity support to their operations.

### **1995-96**

- i) Effective from September 30, 1995 the minimum period for Repos in Treasury Bills and Government dated securities was stipulated to be 3 days in order to ensure that banks resort to Repos not as call money but in accordance with the spirit of this facility.

### **1996-97**

There was no policy measures during 1996- 97.

### **1997-98**

- i) In order to activate the repo market so that it serves as an equilibrating force between the money market and the securities market, repo/ reverse repo

transactions among institutions were extended in respect of all Central Government dated securities.

- ii) The Reserve Bank announced a scheme of fixed rate repos commencing on November 29, 1997. The Repo rate was fixed at 4.5 per cent.
- iii) The Reserve Bank raised the repo rate from 4.5 per cent to 5 per cent on December 3, 1997.
- iv) The Reserve Bank raised the repo rate by 1.5 percentage points to 6.5 per cent on December 4, 1997.
- v) The Reserve Bank raised the repo rate by 0.5 percentage points to 7 per cent on December 11, 1997.
- vi) The Reserve Bank raised the repo rate by 2 percentage points to 9 per cent, effective from January 17, 1998.
- vii) The Reserve Bank reduced the repo rate by one percentage points to 8 per cent, effective from March 18, 1998.

### **1998-99**

- i) The Reserve Bank reduced the fixed repo rate by one percentage points to 7 per cent on April 3, 1998.
- ii) The fixed repo rate was reduced by one percentage points to 6 per cent on April 30, 1998.
- iii) The Reserve Bank reduced the fixed repo rate by one percentage points from 6 per cent to 5 per cent, effective from June 15, 1998.
- iv) The fixed repo rate was increased by three percentage points to 8 per cent from 5 per cent on August 21, 1998.
- v) The fixed repo rate was reduced by two percentage points to 6 per cent, effective from March 2, 1999.

## **1999-2000**

- i) The Reserve Bank announced introduction of an interim Liquidity Adjustment Facility (ILAF) through repos and lending against collateral of Government of India securities. It provided a mechanism by which liquidity would be injected at various interest rates, and absorbed when necessary at the fixed repo rate.
- ii) Non-bank entities which were specifically permitted to undertake reverse repos were allowed to borrow money through repo transactions on par with banks and PDs.
- iii) 35 non-bank entities along with those non-bank entities which were earlier allowed to undertake reverse repo were permitted both to lend and borrow through repo transactions.

## **2000-01**

- i) The Reserve Bank reduced the fixed repo rate by 1 percentage points from 6 per cent to 5 per cent, effective from April 1, 2000.
- ii) In order to facilitate the movement of short –term money market rate within a corridor, impart greater stability and facilitate the emergence of a short-term rupee yield curve, it was announced that a full-fledged Liquidity Adjustment Facility (LAF) operated through repos and reverse repos would be progressively introduced with effect from June 5, 2000.

In the first stage, it was proposed that the Additional Collateral Lending Facility (ACLF) would be replaced by variable rate repo auctions with same day settlement; in the second stage, the Collateral Lending Facility (CLF) and Level-1 liquidity support would be replaced by variable rate repo auctions (some minimum support to PDs would be continued but at interest rate linked to variable rate in the daily repo auctions as determined by the Reserve Bank), and in the third stage, with full computerization of Public Debt Office and introduction of Real Time Gross settlement System (RTGS), repo operations through electronic transfers would be

introduced and in the final stage LAF would possibly be operated at different timings of the same day.

#### **2001-02**

- i) LAF operating procedures changed as follows with effect from May 8, 2001. As per the norms, there is
  - (a) Option to switch over to fixed rate repos on overnight basis as and when felt necessary and
  - (b) Discretion to introduce longer-term repos up to 14 days.
- ii) The repo rate was cut by 25 basis points from 7 per cent to 6.75 per cent on April 27, 2001.
- iii) The repo rate was cut by 25 basis points to 6.5 per cent on May 28, 2001.
- iv) One day fixed rate repo conducted at 6 per cent on March 5, 2002.

#### **2002-03**

- i) The repo rate was cut by 25 basis points to 5.75 per cent from 6 per cent on June 27, 2002.
- ii) Repo rate under the LAF was reduced by 25 basis points to 5.50 per cent on October 29, 2002.
- iii) The LAF repo rate was reduced to 5 per cent from 5.5 per cent effective from March 3, 2003.

#### **2003-04**

- i) The one-day and 14-day repo rate under the Reserve Bank's Liquidity Adjustment Facility (LAF) was reduced to 4.5 per cent from 5 per cent effective from August 25, 2003.

- ii) It was decided that the facility to non-bank entities for routing transactions through Primary Dealers (PDs) would be extended from end- June 2000 to end December 2000 and simultaneously steps will be initiated to extend repo facility to such entities through subsidiary General Ledger (SGL) II Accounts.
- iii) In order to facilitate operational flexibility to existing lenders to adjust their asset liability structure by widening the repo market and improve the participation of the non-bank entities, a time bound program of withdrawing permission to non-bank entities for lending in call/notice money market coinciding with the development of the repo market was announced.
- iv) Following the recommendations of Narasimham Committee II, the Reserve Bank widened the repo market by permitting the non-bank participants maintaining current and SGL accounts with the Reserve Bank to undertake both repos and reverse repos, reducing the minimum maturity of repo transactions to 1 day, making state Government securities eligible for repos and opening of its purchase window to impart liquidity to Government securities whenever situation warrants. As suggested by the committee, it was necessary to move towards a pure inter-bank call money market as early as possible. However, as the repo market was not yet broad-based and deep, the permission granted to select co-operates for routing call money transactions through PDs was further extended from December 2001 to June 2001.

#### **2004-05**

- i) Repo rate increased by 25 basis points to 4.75 per cent effective from October 27, 2004. The nomenclature of repo was changed, consistent with international usage. Effective from October 29, 2004, repo rate would be 6 per cent and repo indicates injection of liquidity.
- ii) The revised LAF scheme administered with overnight fixed rate repo effective from November 1, 2004; and the 7-day and 14 –day repos discontinued.

### **2005-06**

- i) The fixed repo-rate under LAF retained at 6 per cent on April 28, 2005.
- ii) An electronic trading platform for conduct of market repo operations in Government securities, in addition to the existing voice based system, was to be facilitated.
- iii) Repo rate increased by 25 basis points to 6.25 per cent on October 26, 2005.
- iv) The fixed repo rate increased by 25 basis points to 6.5 per cent on January 24, 2006.

### **2006-07**

- i) Fixed repo rate under LAF raised by 25 basis points to 6.75 per cent on June 9, 2006.
- ii) Fixed repo rate under LAF raised by 25 basis points to 7 per cent on July 25, 2006.
- iii) Fixed repo rate under the LAF raised by 25 basis points to 7.25 per cent on October 31, 2006.
- iv) Fixed repo rate under the LAF raised by 25 basis points to 7.50 per cent on January 31, 2007.
- v) Fixed repo rate under the LAF increased by 25 basis points to 7.75 per cent on March 30, 2007.

### **2007-08**

- i) Fixed repo rate under the LAF kept unchanged at 7.75 per cent during 2007-08.

### **2008-09**

- i) Repo rate kept unchanged at 7.75 per cent until June 11, 2008.



- ii) The repo rate under the LAF was increased by 25 basis points to 8 per cent from 7.75 per cent with effect from June 12, 2008. The standing Liquidity facilities i.e. ECR and collateral liquidity support provided to banks and PDs respectively were made available at the revised repo rate (i.e. at 8 per cent) from June 12, 2008.
- iii) The repo rate under the LAF was increased from 8 per cent to 8.5 per cent with effect from June 24, 2008. The standing liquidity facilities were made available at the revised repo rate, i.e. 8.5 per cent.
- iv) The repo rate under the LAF was increased by 50 basis points from 8.5 per cent to 9 per cent with an immediate effect from June 30, 2008.
- v) A special 14 day repo at 9 per cent per annum for notified amount of Rs. 20,000 crore was announced with a view to, enables the banks to meet the liquidity requirements of mutual funds.
- vi) The repo rate under the LAF was reduced, by 100 basis points to 8 per cent with immediate effect from October 20, 2008.
- vii) The repo rate under the LAF was reduced by 50 basis points to 7.5 per cent with effect from November 3, 2008.
- viii) The special term repo facility introduced for the purpose of meeting the liquidity requirements of MFs and NBFCs was decided to continue till end-March 2009. Banks can avail of this facility either on incremental or on rollover basis with in their entitlement of up to 1.5 per cent of NDTL.
- ix) The repo rate under the LAF was reduced by 100 basis points from 7.5 per cent to 6.5 per cent, effective from December 8, 2008.
- x) Reduced the repo rate under the LAF by 100 basis points from 6.5 per cent to 5.5 per cent, effective from January 05, 2009.
- xi) The special term repo facility under LAF for the purpose of meeting the liquidity requirements of MFs, NBFCs and HFCs was extended up to September 30, 2009.

- xii) The repo rate under the LAF was reduced by 50 basis points from 5.5 per cent to 5 per cent with effect from March 5, 2009.

### **2009-10**

- i) Repo rate under the LAF was reduced by 25 basis points from 5 per cent to 4.75 per cent with effect from April 21, 2009.
- ii) Extension of the special refinances facility and term repo facility up to March 31, 2010.
- iii) Repo rate was kept unchanged at 4.75 per cent on February 27, 2010
- iv) Repo rate was increased by 25 basis points to 5 per cent on March 19, 2010.

### **2010-11**

- i) Effective from April 20, 2010, Repo rate was increased to 5.25 per cent from 5 per cent.
- ii) It was kept unchanged at 5.25 per cent on April 24, 2010.
- iii) The Repo rate was increased by 25 basis points to 5.5 per cent effective from July 2, 2010.
- iv) Repo rate under LAF was further increased to 5.75 per cent with effect from July 27, 2010. <sup>(11)</sup>

**Table VI.5  
Movements in Repo Rate during 2000-2010**

<b>Year</b>	<b>Effective since</b>	<b>Repo Rate (%)</b>	<b>Change</b>	<b>Remarks</b>
2000-01	June 5, 2000	9.05		
	June 7, 2000	9.00	(-0.05)	As a part of LAF to reflect monetary policy
	June 9, 2000	9.05	(+0.05)	„
	June 12, 2000	9.25	(+0.20)	
	June 13, 2000	9.55	(+0.30)	
	June 14, 2000	10.85	(+1.30)	To maintain economic stability
	June 19, 2000	13.50	(+2.65)	„
	June 20, 2000	14.00	(+0.50)	
	June 21, 2000	13.50	(-0.50)	
	June 22, 2000	13.00	(-0.50)	
	June 23, 2000	13.05	(+0.05)	
	June 27, 2000	12.60	(-0.45)	
	June 28, 2000	12.25	(-0.35)	
	July 13, 2000	9.00	(-3.25)	To deal with deceleration of growth
	July 21, 2000	10.00	(+1.00)	
	Aug 09, 2000	16.00	(+6.00)	As a part of liquidity management
	Aug 30, 2000	15.00	(-1.00)	
	Sept 06, 2000	13.50	(-1.50)	For meeting economic slowdown
	Oct 13, 2000	10.25	(-3.25)	„
	Nov 06, 2000	10.00	(-0.25)	„
	March 09, 2001	9.00	(-1.00)	

*Source: RBI Publications (various years)*

**Table VI.5 (contd)**

<b>Year</b>	<b>Effective since</b>	<b>Repo Rate (%)</b>	<b>Change</b>	<b>Remarks</b>
2001-02	April 30, 2001	8.75	(-0.25)	
	June 07, 2001	8.50	(-0.25)	
	March 28, 2002	8.00	(-0.50)	
2002-03	Nov 12, 2002	7.50	(-0.50)	
	March 07, 2003	7.10	(-0.40)	
	March 19, 2003	7.00	(-0.10)	
2003-04	March 31, 2004	6.00	(-1.00)	
2004-05		6.00	No change	
2005-06	Oct 26, 2005	6.25	(+0.25)	As a precaution to inflationary expectations
	Jan 24, 2006	6.50	(+0.25)	„
2006-07	June 09, 2006	6.75	(+0.25)	No bid for repo
	July 25, 2006	7.00	(+0.25)	„
	Oct 31, 2006	7.25	(+0.25)	For credit control
	Jan 31, 2007	7.50	(+0.25)	„
	March 30, 2007	7.75	(+0.25)	
2007-08		7.75	No change	
2008-09	June 11, 2008	8.00	(+0.25)	As a part of contraction in monetary stance
	June 25, 2008	8.50	(+0.50)	„
	July 30, 2008	9.00	(+0.50)	„
	Oct 20, 2008	8.00	(-1.00)	To deal with liquidity crunch & adverse forex
	Nov 3, 2008	7.50	(-0.50)	„
	Dec 8, 2008	6.50	(-1.00)	„
	Jan 05, 2009	5.50	(-1.00)	„
	March 05, 2009	5.00	(-0.50)	„
2009-10	April 21, 2009	4.75	(-0.25)	„
	March 19, 2010	5.00	(+0.25)	To curtail inflation
2010-11	April 20, 2010	5.25	(+0.25)	„
	July 02, 2010	5.50	(+0.25)	„
	July 27, 2010	5.75	(+0.25)	„

Source: RBI Publications (various years)

During the year 1992-93, an active debt management policy was introduced to prudently influence the composition, maturity structure and yield of Government securities which by reducing monetized deficit and effectively controlling money supply, enhanced the efficiency of monetary policy. Among the reform measures, introduced, Repurchase Agreement (Repo) auction was an important one.

In order to make Repo an effective measure of monetary control, the RBI approached the tool with liberal attitude and provided more freedom and scope to its financial dealers. As part of that, the RBI announced a scheme of fixed rate repos commencing on November 29, 1997 and the rate was fixed at 4.5 per cent. RBI changed the rate many times in the succeeding years. Again, in 1999-2000, the RBI announced introduction of an interim Liquidity Adjustment Facility (ILAF) through repos and lending against collateral of Government of India securities. It provided a mechanism by which liquidity would be injected at various interest rates, and absorbed when necessary at the fixed repo rate. In order to facilitate the movement of short-term money market rate within a corridor, impart greater stability and facilitate the emergence of a short-term rupee yield curve, a full fledged Liquidity Adjustment Facility (LAF) operated through repos and reverse repos was progressively introduced with effect from June 5, 2000. It was executed in different stages and the collateral Lending Facility was replaced by variable rate repo auctions and the interest rate was determined in the daily repo auctions by the RBI.

Table VI.5 shows the movements in Repo rate during 1991-2010. It shows continuous and frequent changes in the rate along the ride. We can observe both negative and positive changes even in continuous days. The rate varied in a percentage range of 9.05 to 5.75 during the period of our study. It increased by 2.65 per cent (from 10.85 to 13.50) on June 19, 2000, as a part of monetary stabilization. Then, there has been a sharp decline in the rate by 3.25 per cent (from 12.25 to 9) on July 13, 2000. This was a deliberate step to deal with deceleration in growth. As a part of liquidity management, it has been increased tremendously to 16 per cent from 10 percentages on August 9, 2000. Again, on October 13, 2000, it has been reduced by 3.25 per cent. So we can observe sudden rises and falls in the repo rate during the same (2000-01) financial year.

However, in 2004-05, there was no change in the Repo rate and it has been increased to 6.75 and further to 7 per cent in June and July, 2006, just because there was no bid for repo in those months.

The repo rate continued its variation throughout the years and very recently on July 27, 2010 it has been increased to 5.75 per cent as a measure to curtail inflation playing an active role in the LAF corridor along with other monetary tools.

### **6.1.6. REVERSE REPO RATE**

Reverse repo rate is the rate at which banks park their short-term excess liquidity with the RBI. The RBI uses this tool when it feels that there is too much money floating in the banking system. An increase in the reverse repo rate means that the RBI will borrow money from the banks at a higher rate of interest. As a result, banks would prefer to keep their money with the RBI. Thus, we can say that repo rate signifies the rate at which liquidity is injected into the banking system by the RBI, where as reverse repo rate signifies the rate at which the central bank absorbs liquidity from the banks.

Thus Reverse repo rate is the rate at which RBI borrows money from banks. Banks are always happy to lend money to RBI, since their money is in safe hands with a good interest. An increase in reverse repo rate can cause the banks to transfer more funds to RBI due to these attractive interest rates. It can cause money to be drawn out of the banking system. Due to this fine-tuning of RBI using its tools of CRR, Bank Rate, Repo Rate and Reverse Repo rate, our banks adjust their lending or investment rates for common man. As on March 21, 2010 the repo rate is 5 per cent and reverse repo rate is 3.5 per cent. We can have a look into the rates relevant to the period of study.

#### **1992-96**

There were no policy announcements from 1992-93 to 1995-96.

#### **1996-97**

- i) With a view to encourage schemes of mutual funds dedicated to Government securities and creating a wider investor base for Government securities, the

Reserve Bank announced liquidity support to mutual securities either by way of outright purchases or reverse repos in Central Government securities up to 20 per cent of outstanding investments.

- ii) The rate of interest at which liquidity support in the form of reverse repo transactions would be provided to primary dealers (PDs) by the Reserve Bank was reduced to 10.50 per cent per annum in respect of 91 day auction Treasury Bills as against 11.50 per cent earlier, and to 11 per cent in respect of Central Government dated securities from 13 per cent earlier.

### **1997-98**

- i) In order to activate the repo market so that it serves as an equilibrating force between the money market and the securities market, non-bank holders of SGL Account with the Reserve Bank were allowed entry into reverse repo (but not into repos) transactions with banks/PDs, Treasury Bills of all maturities and all Central Government dated securities.
- ii) Effective fortnight beginning January 17, 1998; the facility to provide liquidity support to primary Dealers in Government securities at Bank rate through reverse repo with the Reserve Bank would be available at Bank Rate on Discretionary basis, subject to the Reserve Bank stipulation relating to their operations in the call money market.

### **1998-99**

There was no policy announcement during 1998-99.

### **1999-2000**

Non-bank entities which were specifically permitted to undertake reverse repos were allowed to borrow money through repo transactions on par with banks and PDs. 35 non-bank entities along with those non-bank entities which were earlier allowed to undertake reverse repos were permitted both to lend and borrow through repo transactions.

### **2000-03**

There were no policy announcements from 2000 to 2003.

### **2003-04**

- i) The multiplicity of rates at which liquidity is absorbed / injected under backstop facility was rationalized as under:

- 1) The backstop interest rate will be at the reverse repo cut-off rate at the regular LAF auctions on that day.
  - 2) In the case of no reverse repo in the LAF auctions, backstop will be at 2 percentage points above the repo cut-off rate and
  - 3) On days when no repo/ reverse repo bids are received/ accepted, backstop rate will be decided by the Reserve Bank on an ad hoc basis.
- ii) The revised LAF scheme was executed effective from March 29, 2004. In terms of the revised LAF scheme, the reverse repo rate was reduced to 6 per cent with effect from March 29, 2004. Normal facility and backstop facility were merged into a single facility to be made available at a single rate.

#### **2004-05**

- i) Entire export credit refinance was made available at reverse repo rate.
- ii) The fixed reverse repo rate under the LAF left unchanged at 6 per cent. Reverse repo indicates absorption of liquidity.
- iii) The revised LAF scheme was implemented with overnight fixed rate reverse repo effective from October 29, 2004, consistent with international usage. Accordingly, reverse repo rate was 4.75 per cent.
- iv) The revised LAF scheme administered with overnight fixed rate reverse repo was effective from November 1, 2004.

#### **2005-06**

- i) The fixed reverse repo rate under Liquidity Adjustment Facility (LAF) of the Reserve Bank increased by 25 basis points to 5 per cent effective from April 29, 2005.
- ii) The fixed reverse repo rate increased by 25 basis points to 5.25 per cent, effective from October 26, 2005.
- iii) The fixed reverse repo rate increased by 25 basis points to 5.50 per cent, effective from January 24, 2006.

#### **2006-07**

- i) The fixed reverse repo rate increased by 25 basis points to 5.75 per cent, effective from June 9, 2006.
- ii) The fixed reverse repo rate increased by 25 basis points to 6 per cent, effective from July 25, 2006.



### **2007-08**

- i) Withdrawal of the ceiling of Rs. 3,000 crore on daily reverse repo under the LAF with effect from August 6, 2007.
- ii) Fixed reverse repo rate under the LAF was kept unchanged at 6 per cent during 2007-08.

### **2008-09**

- i) The reverse repo rate under the LAF was reduced by 100 basis points from 6 per cent to 5 per cent, effective from December 8, 2008.
- ii) Reduced the reverse repo rate by 100 basis points from 5 per cent to 4 per cent, effective from January 03, 2009.
- iii) The reverse repo rate under the LAF was reduced by 50 basis points from 4 per cent to 3.5 per cent with effect from March 5, 2009.

### **2009-10**

- i) Reverse repo rate under the LAF was reduced by 25 basis points from 3.5 per cent to 3.25 per cent with effect from April 21, 2009.
- ii) Reverse repo rate was kept unchanged at 3.25 per cent on February 27, 2010.
- iii) It was increased to 3.5 per cent on March 19, 2010.

### **2010-11**

- i) The Reverse repo rate was increased to 3.75 per cent on April 20, 2010.
- ii) With effect from July 2, 2010, Reverse repo rate was increased to 4 per cent.
- iii) The Reverse repo rate was further increased by 50 basis points to 4.5 per cent, effective from July 27, 2010. <sup>(12)</sup>

**Table VI.6**  
**Movements in Reverse Repo Rate during 2000-2010**

<b>Year</b>	<b>Effective Date</b>	<b>Reverse Repo Rate (%)</b>	<b>Change</b>	<b>Remarks</b>
2000-01	July 10, 2000	7.00		
	July 24, 2000	8.00	(+1.00)	As a part of LAF to stance monetary policy
	Aug 03, 2000	8.25	(+0.25)	„
	Aug 04, 2000	11.50	(+3.25)	As a part of liquidity management
	Aug 07, 2000	12.50	(+1.00)	„
	Aug 08, 2000	14.00	(+1.50)	„
	Aug 09, 2000	15.50	(+1.50)	„
	Aug 10, 2000	15.00	(-0.50)	To deal with deceleration of growth
	Aug 14, 2000	14.50	(-0.50)	„
	Aug 30, 2000	14.25	(-0.25)	
	Aug 31, 2000	13.50	(-0.75)	
	Sept 04, 2000	12.00	(-1.50)	For meeting economic slowdown
	Sept 07, 2000	11.00	(-1.00)	„
	Sept 08, 2000	10.50	(-0.50)	„
	Sept 11, 2000	10.00	(-0.50)	„
	Sept 15, 2000	10.00	No change	
	Oct 03, 2000	9.75	(-0.25)	
	Oct 04, 2000	9.50	(-0.25)	
	Oct 05, 2000	9.25	(-0.25)	
	Oct 06, 2000	9.00	(-0.25)	
	Oct 09, 2000	8.75	(-0.25)	
	Oct 10, 2000	8.50	(-0.25)	
	Oct 24, 2000	8.25	(-0.25)	
	Oct 25, 2000	8.00	(-0.25)	
	Feb 20, 2001	7.50	(-0.50)	
	March 02, 2001	7.00	(-0.50)	
2001-02	April 27, 2001	6.75	(-0.25)	
	May 28, 2001	6.50	(-0.25)	
	March 05, 2002	6.00	(-0.50)	

*Source: RBI Publications (various years)*

**Table VI.6 (Contd)**

<b>Year</b>	<b>Effective Date</b>	<b>Reverse Repo Rate (%)</b>	<b>Change</b>	<b>Remarks</b>
2002-03	June 06, 2002	5.75	(-0.25)	
	Oct 30, 2002	5.50	(-0.25)	
	March 03, 2003	5.00	(-0.50)	
2003-04	Aug 25, 2003	4.50	(-0.50)	
2004-05	Oct 27, 2004	4.75	(+0.25)	To check liquidity overhang
2005-06	April 29, 2005	5.00	(+0.25)	As a precaution to inflationary expectations
	Oct 26, 2005	5.25	(+0.25)	„
	Jan 24, 2006	5.50	(+0.25)	„
2006-07	June 9, 2006	5.75	(+0.25)	Comfortable liquidity position
	July 25, 2006	6.00	(+0.25)	„
2007-08		6.00	No Change	
2008-09	Dec 8, 2008	5.00	(-1.00)	To deal with liquidity crunch & adverse foreign exchange
	Jan 03, 2009	4.00	(-1.00)	„
	March 05, 2009	3.50	(-0.50)	„
2009-10	April 21, 2009	3.25	(-0.25)	„
	March 19, 2010	3.50	(+0.25)	For absorption of liquidity
2010-11	April 20, 2010	3.75	(+0.25)	„
	July 02, 2010	4.00	(+0.25)	„
	July 27, 2010	4.50	(+0.50)	„

*Source: RBI Publications (various years)*

The variations in the rates of reverse repo given in Table VI.6 are quite similar to that of repo. As a part of LAF to stance monetary policy, the reverse repo rate has been changed continuously and frequently, sometimes to deal with deceleration in growth and economic slowdown and sometimes as an active member of liquidity management. Whatever be the role, its prominence is increasing day by day in the money market along with other important monetary techniques.

### **6.1.7. SELECTIVE CREDIT CONTROL METHODS**

Apart from the general or quantitative methods of credit control, there are selective or qualitative methods of credit control for specific purposes. While the general credit controls relate to the total volume of credit (changing High-powered money) and the cost of credit, selective credit controls operate on the distribution of total credit. Selective credit control measures have positive and negative aspects. Measures can be used to encourage greater channeling of credit into particular sectors, as is being done in India in favor of designated priority sectors, is the positive aspect. On the negative side, measures are taken to restrict the flow of credit to particular sectors or activities. Most of the time, the term is used in this aspect.

Quantitative credit control measures do not control the quality of credit and do not influence the purpose for which loans and advances are used. On the other hand, selective credit control methods control the uses of bank credit. The quantitative credit control methods operate primarily by affecting the cost, volume and availability of bank reserves, and thereby, tend to regulate the total supply of credit. The selective measures on the other hand, are meant to regulate the terms on which credit is granted in specific sectors. They seek to control the demand for credit for different uses by determining minimum down payments and regulating the period of time over which the loan is to be repaid.

The different selective credit controls are given below:

#### **(1) Varying Margin Requirement**

It is an important qualitative method of credit control. This method was initially used in America in 1929. The banks keep a certain margin while lending

money against securities. Banks do not advance money to the full value of the security pledged for the loan.

Margin requirement = Value of security- Amount advanced.

According to Ritter, “Marginal requirement is the difference between the value of the security and the amount of the loan sanctioned against that security”.

This method of credit control is very simple and easy to operate. It controls the credit in the speculative area and in this way demand for speculative credit is controlled. So it helps to diversify the credit and directs its flow into the desired channels. This technique of credit control is contributed to stabilize the economy and minimize cyclical disturbances.

### **(2) Regulation of Consumer Credit**

This method was first used by the Federal Reserve System of the United States in 1941. It helps to regulate the terms and conditions under which the credit repayable in installments could be extended to the consumers for purchasing the durable goods.

Under the consumer credit system, a certain percentage of the price of the durable goods is paid by the consumer in cash. The balance is financed through the bank credit which is repayable by the consumer in installments. The central bank can control the consumer credit (a) by changing the amount that can be borrowed for the purchase of the consumer durables and (b) by changing the maximum period over which the installments can be extended.

This method seeks to check the excessive demand for durable consumer goods and thereby to control the prices of these goods. The method is helpful in controlling inflationary trends in developed countries where the consumer credit system is widespread. In countries like India, however, this method has little significance.

### **(3) Rationing of Credit**

The central bank can also adopt the rationing of credit as a selective measure. Under this method, the central bank can fix a limit for the credit facilities available to

commercial bank. This is to control and regulate the purpose for which the credit is granted by the banks. It can be implemented in four ways:-

- (1) It can deny giving loans to a particular bank.
- (2) It can scale down the amount of loans to be given to different banks.
- (3) It can fix quota of the credit to be given to different banks. and
- (4) It can fix the limits of loans to be given to different industries and traders.

Thus, Credit can also be controlled by the mechanism of rationing. This helps to credit contraction. With the introduction of this method, banks are cautious in matter of advancing loans even though they dislike such restrictions.

#### **(4) Direct Action**

Direct action refers to direct dealings with the individual bank which adopt policies against the policies of the central bank. Under this method, the central bank may be obliged to take action against the defaulting banks, if they do not follow the policy laid down by the central bank. So direct action includes all types of restrictions imposed upon the commercial banks by central bank concerning lending and investment. This is the most extensively used method and is not used in isolation; it is often used to supplement other methods of credit control.

Under this system, (1) the central bank may refuse to rediscount the bills of exchange of the commercial banks (2) it may charge a penal rate of interest over and above the bank rate and (3) the central bank may refuse to grant more credit to the particular banks.

#### **(5) Moral Persuasion**

Moral suasion means advising, requesting and persuading the commercial banks to co-operate with the central bank in implementing its general monetary policy. This method is a psychological method and its effectiveness depends upon the immediate and favorable response from the commercial banks.

According to Chandler, “in many countries with only a handful of commercial banks, the central bank rely heavily on moral suasion to accomplish its objectives”.<sup>(13)</sup>

Moral persuasion is not a statutory obligation. Hence, the success of this selective method depends on the prestige and influence enjoyed by the central bank.

#### **(6) Publicity or Propaganda**

It is another technique of credit control that is used by the central bank. It gives wide publicity to its credit policy through the media, periodicals and journals.

Through publicity the central bank seeks.

- (1) To influence the credit policies of the commercial banks.
- (2) To educate people regarding the economic and monetary condition of the country and
- (3) To influence the public opinion in favor of its monetary policy.

The central bank regularly publishes the statement of its assets and liabilities, reviews of credit and business conditions, reports on its own activities, money market and banking conditions etc.

The method of publicity is not very useful in the less developed countries where majority of the people are illiterate and do not understand the significance of banking. However, the success of this technique of credit depends upon the extent to which central bank is able to build up public opinion.

#### **(7) Credit Authorization Scheme**

Credit Authorization Scheme (CAS) is a type of selective credit control introduced by the Reserve Bank of India in November 1965. Under this scheme, the commercial bank had to obtain Reserve Bank’s authorization before granting any fresh credit of Rs.1 crore or more to any single party. The limit was later raised gradually to Rs.4 crore in November 1983, in respect of borrowers in private as well as public sector. The limit was further raised to Rs.6 crore with effect from April 1986. Under

this scheme, the Reserve Bank requires the commercial banks to collect, examine and supply detailed information regarding the borrowing concerns. They are also required to ascertain the working of the borrowing concerns on matters such as inter corporate lending and investment, excessive inventory build-up, diversion of short-term funds for acquiring fixed asset , etc. The main purpose of this scheme is to keep a close watch on the flow of credit to the borrowers. It requires that the bank should lend to the large borrowing concerns on the basis of credit appraisal and actual requirement of the borrowers. Since July 1987, the CAS has been liberalized to allow for greater access to credit to meet genuine demands in production sectors without the prior sanction of the RBI.

In modern times, the selective credit controls have become very popular, particularly in the developing countries. Its importance and advantages can be illustrated with the help of a chart:

**Advantages of Selective Credit Controls**

Effective and Direct Method
Flexibility
Wide Effect
Balanced Growth
Removal of sector wise imbalances
Precise Control
Supports Monetary Policy

This selective credit control methods are not free from limitations. It has the following demerits:

- (1) It would be difficult for the central bank to identify essential and non-essential sectors for the purpose of enforcing selective credit controls.
- (2) It is difficult to ensure that the borrowers make use of the loans and advances obtained by them for the purpose for which it is borrowed.

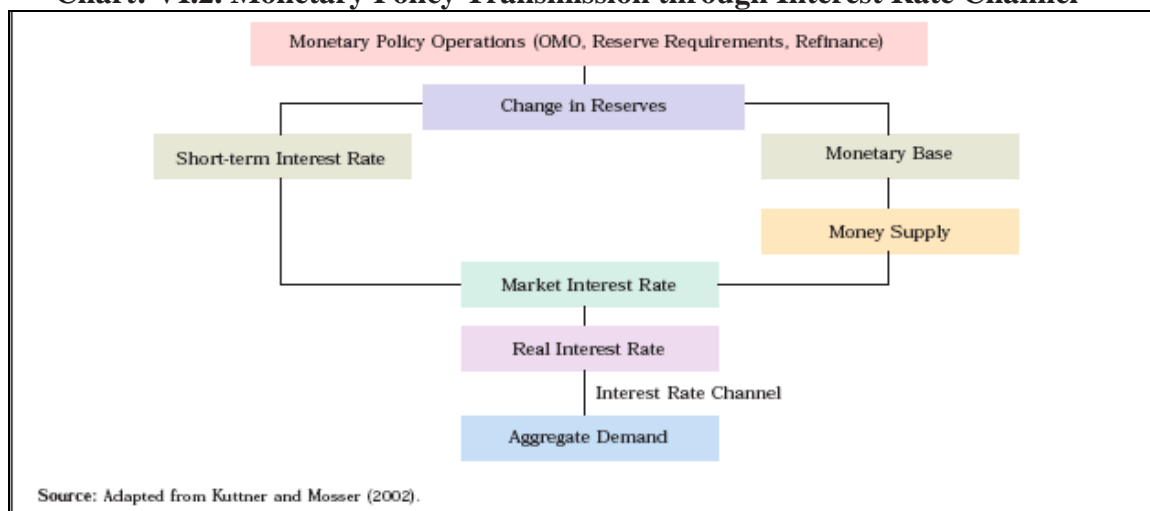


- (3) Though the banks ensure that loan amount is properly used, they have no control over the additional income created by the original investment.
- (4) The commercial banks may advance loans for the purpose of earning profits. This may be against the policy of the central bank.
- (5) Selective bank controls are applicable only to commercial banks. Other sources of financing such as issues of shares and debentures, ploughing back of profits and borrowing from non-banking financial institutions are not covered by selective credit controls.

Despite these limitations, the selective methods are an important tool with the central bank and are extensively used as a method of credit control. However, for effective and successful monetary management, both the quantitative and qualitative credit control methods are to be combined judiciously. The two types of credit control are not competitive; they are supplementary to each other.

The Reserve Bank of India has undertaken the selective credit controls to check speculative activities and inflationary pressures and extended credit in developmental lines following Section 21 of the Banking Regulation Act 1949. The RBI has been operating these controls since 1956, and these have now become a regular feature of its policy of credit control. However, these controls have been under continuous review and changes have been made in response to emerging situations and trends in prices. The selective credit controls can be effective only when they are operated in the frame work of overall credit restrictions. In fact the Reserve Bank has also admitted the fact that these controls have been only marginally effective in checking the rise in prices. The existence of unaccounted sector in the economy mainly comes in the way.

**Chart: VI.2. Monetary Policy Transmission through Interest Rate Channel**



Source: RBI Occasional paper (special edition, 2009)

The interest rate channel is the primary mechanism of monetary policy transmission in conventional macroeconomic models where an increase in nominal interest rates, given some degree of price stickiness, translates into an increase in the real rate of interest and the user cost of capital (Chart: VI.2). These changes, in turn, lead to a postponement in consumption or a reduction in investment spending thereby affecting the working of the real sector, *viz.*, changing aggregate demand and supply, and eventually growth and inflation in the economy (Kuttner and Mosser, 2002). This is the mechanism embodied in conventional specifications of the “IS” curve, both of the “Old Keynesian” variety and the “New Keynesian” models developed during the 1990s. However, the macroeconomic response to policy induced interest rate changes is considerably larger than that implied by conventional estimates of the interest elasticities of consumption and investment. This suggests that mechanisms, other than the interest rate channel, may also be at work in the transmission of monetary policy.<sup>(14)</sup>

Interest rates can influence the monetary policymaking process in three distinct ways (Friedman, 2000). The first role of interest rates is as an instrument variable that the central bank sets in order to implement its chosen policy. A second potential role for interest rates in the monetary policy process is again as an instrument variable, but as an instrument that the central bank varies not for influencing output and inflation directly but rather for targeting the money stock. Finally, most central banks use short-

term interest rate as their monetary policy instrument variable based on long-term interest rate movements, which are taken as more of an information variable about potential future developments.

Financial sector reforms since the early 1990s have provided a strong impetus to the development of financial markets, which, along with interest rate deregulation, paved the way for introduction of market-based monetary policy instruments. With financial innovations, money demand was seen as less stable and more viable. Thus, the disequilibrium in money markets got reflected in short-term interest rates. Accordingly, since the adoption of the multiple indicator approach in 1998, although monetary aggregates continue to be an important information variable, interest rates have emerged as the operational instrument of policy – initially the Bank Rate and then the repo/reverse repo rates under the liquidity adjustment facility (LAF) from June 2000. This shift in emphasis from money to interest rates has been spurred by increased financial liberalization, greater trade openness and capital flows, and innovations in payment and transactions technologies. Such a shift was gradual and a logical outcome of measures implemented in the reform period since the early 1990s and an array of new money market instruments such as commercial paper, certificates of deposit and repos has been introduced in order to broaden the money market. Furthermore, with increased sophistication of financial markets, the risk profiles of financial market participants also changed, necessitating introduction of derivative instruments as effective risk management tools.

## **SECTION - 2**

### **6.2. MONEY, PRICES AND OUTPUT IN INDIA**

Monetary policy refers to the use of monetary instruments within the control of the central Bank, to influence the level of aggregate demand for goods and services, by regulations the total money supply and credit in the economy. The expansion of money supply depends on the creation of high powered money (H) and the multiplier rate (M<sub>0</sub>) in the economy. Hence, we will have to discuss about the Reserve Money, money multiplier and money supply in general and then the relationship between

inflation and economic growth and prices and output in particular, before entering into the core of the study with data analysis.

### **6.2.1. RESERVE MONEY**

Reserve money is also referred to as monetary base, high powered money (H), base money, primary money or government money. Reserve money or high-powered money refers to the money made available the monetary authority of a country. In India, the Reserve Bank of India and the Government of India produce high-powered money. The Reserve Bank of India calls high-powered money as monetary base or reserve money. High- powered money includes (i) currency with the public (C) + (ii) cash reserves of banks (R) + (iii) 'other deposits' with the Reserve Bank of India (OD).

The monetary authority has the power to determine cash reserves (R) on the basis of which the banks produce demand deposits (DD). In fact, the whole process of multiple credit creation rests upon high-powered money. The stock of reserve money is influenced by the following factors:

- (a) Net Reserve Bank Credit to Government
- (b) Reserve Bank Credit to banks
- (c) Reserve Bank credit to development banks
- (d) Net foreign exchange assets of the Reserve Bank and
- (e) Net non-monetary liabilities of the Reserve Bank ( it has a negative effect on H)

Now, it is proposed to discuss the policy implications of various components of Reserve Money. Currency is an important component of both money supply and monetary base. The term 'public' is defined to include all economic units i.e. households, firms and institutions, except the producers of money. Currency with the public consists of paper currency, rupee coins and small coins in active circulation. The Reserve Bank of India issues currency notes of the denomination of rupees two and above. The Government of India issues rupee notes, rupee coins and coins of small denomination. These coins and rupee notes are the direct liability of the Government of India, but they are put into circulation by the Reserve Bank of India as the agent of

the Central Government. The supply of currency is subject to certain statutory restrictions. Variations in currency are not possible except over comparatively long period. Thus, changes in currency do not play an important role in the formulation of monetary policy.

‘Other deposits’ of the Reserve Bank include demand deposits of quasi-government institutions like the IDBI, foreign central banks and Governments, the IMF and the World Bank, etc. These ‘other deposits’ constitute a very small proportion of H. Therefore, they do not have any significant role to play in the monetary policy formulation.

Changes in Cash reserves (R) have important policy implications. The banks have to maintain certain cash reserves. If the supply of R is more than its demand, the banks will have excess reserves (ER), which they may use for loans and advances or may invest in marketable securities. Thus, changes in R have significant influence on the level of economic activity of the country. The monetary authority can regulate and control the magnitude and flow of credit by changing R.

Components of Reserve Money (H) include currency in circulation, Banker’s deposits with RBI and other deposits with RBI. When we examine these components during 1991 to 2010 period, we can see an increase in each component over the years, except in certain years (Table VI.7). Currency in circulation is the major component contributing the largest portions where as the ‘other deposits with RBI’ is the smallest. Among the three, the most important one which is relevant to monetary policy implementation is the second one, i.e. Banker’s deposits with RBI. This is because, by changing the cash reserves only, monetary authorities can influence the real economic variables. It cannot directly influence the other two components of reserve money. There was a decline in the ‘Banker’s deposits with RBI during two years i.e. in 1996-97 and 2008-09 (Chart VI.3). This can be considered as a part of the expansionary monetary policy measures that have been adopted by the monetary authorities during the period.

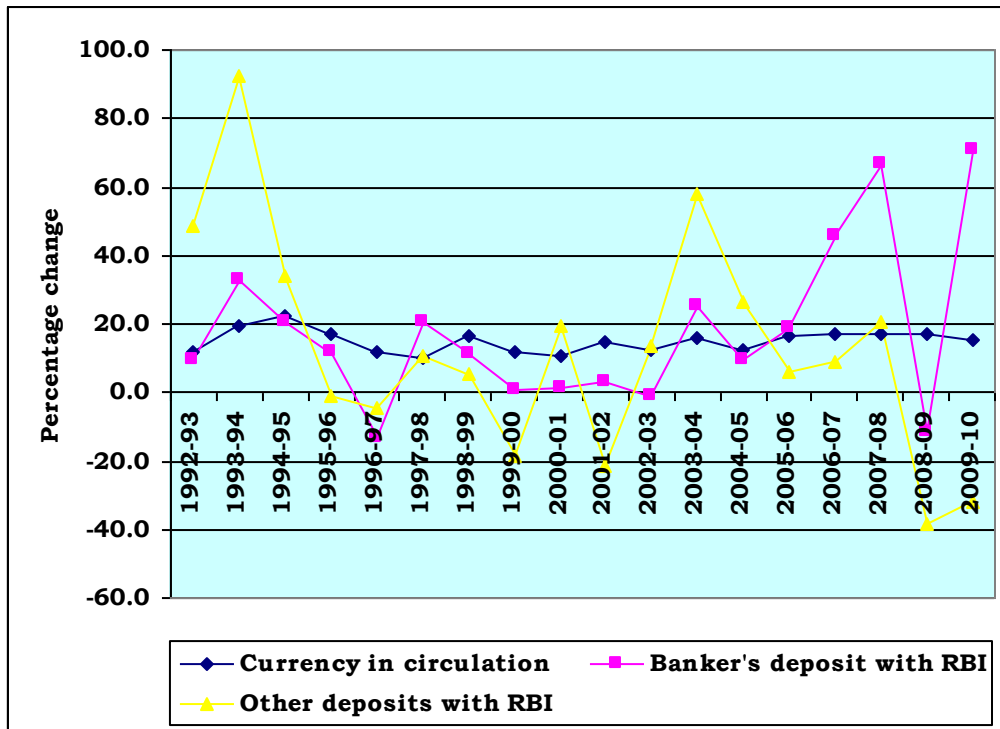
**Table VI.7**  
**Components of Reserve Money (H) during 1991 to 2010**

Year	Currency in Circulation		Banker's deposits with RBI		Other deposits with RBI	
	Amount (Rs. Crores)	Annual change (%)	Amount (Rs. Crores)	Annual change (%)	Amount (Rs. Crores)	Annual change (%)
1991-92	63738		34882		885	
1992-93	71326	11.9	38140	9.3	1313	48.4
1993-94	85396	19.7	50751	33.1	2525	92.3
1994-95	104681	22.6	61218	20.6	3383	34.0
1995-96	122569	17.1	68544	12.0	3344	-1.2
1996-97	137217	12.0	59574	-13.1	3194	-4.5
1997-98	151056	10.1	71806	20.5	3541	10.9
1998-99	175846	16.4	79703	11.0	3736	5.5
1999-00	197061	12.1	80460	0.9	3034	-18.8
2000-01	218205	10.7	81477	1.3	3630	19.6
2001-02	250974	15.0	84147	3.3	2850	-21.5
2002-03	282473	12.6	83346	-1.0	3242	13.8
2003-04	327028	15.8	104365	25.2	5119	57.9
2004-05	368661	12.7	113996	9.2	6478	26.5
2005-06	429578	16.5	135511	18.9	6869	6.0
2006-07	504099	17.3	197295	45.6	7496	9.1
2007-08	590801	17.2	328447	66.5	9054	20.8
2008-09	691153	17.0	291275	-11.3	5573	-38.4
2009-10*	799289	15.6	497627	70.8	3791	-32.0

\* Data for 2009-10 are provisional

Source: RBI Publications ( various issues)

**Chart VI.3. Annual Percentage Variation in the Components of Reserve Money during 1991- 2010**



It can be noted that during the two years, currency in circulation has showed an increasing trend, indicating an increase in money supply. The RBI has used all the weapons such as CRR, SLR, Repo and Reverse Repo rates intensively to augment the lendable resources of banks and to reflect the stance of monetary policy, facing the economic slowdown.

As a result of the right remedial measures from the monetary authorities, the succeeding years (1997-98 and 2009-10) of economic slowdown has exhibited tremendous progress in the monetary aggregates (Table VI.8). Reserve money increased by 13.2 percent and 16.9 percent respectively, during the years (Chart VI.4).

**Table: VI.8****Reserve Money Variations (Amount in Rs. Crores)**

Year	Outstanding as on March 31 2009	Absolute variation	Variation in %
1991-92	99505		
1992-93	110779	11274	11.3
1993-94	138672	27893	25.2
1994-95	169283	30611	22.1
1995-96	194457	25174	14.9
1996-97	199985	5528	2.8
1997-98	226402	26417	13.2
1998-99	259286	32884	14.5
1999-00	280555	21269	8.2
2000-01	303311	22756	8.1
2001-02	337970	34659	11.4
2002-03	369061	31091	9.2
2003-04	436512	67451	18.3
2004-05	489135	52623	12.1
2005-06	571958	82823	16.9
2006-07	708890	136932	23.9
2007-08	928302	219412	31.0
2008-09	988001	59699	6.4
2009-10*	1155281	167280	16.9

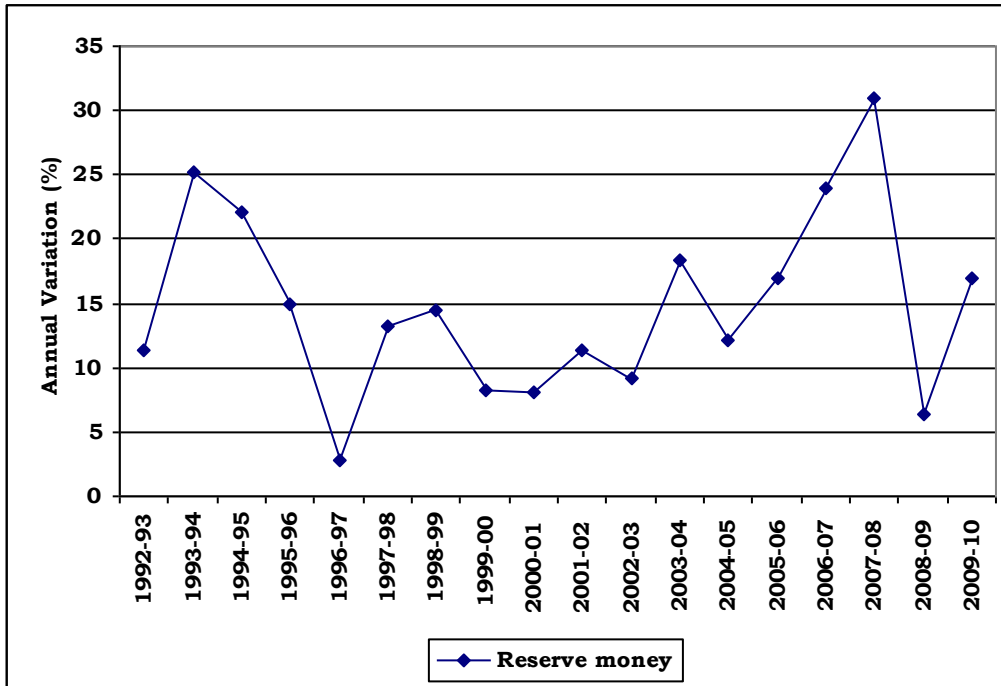
\* Data for 2009-10 are provisional

Source: RBI Publications ( various issues)



Chart VI.4.

Annual Percentage Variation in Reserve Money during 1991- 2010



### 6.2.2 MONEY MULTIPLIER

As the name mentions, money multiplier multiplies the money in an economy. The central bank can change the money supply changing the required reserve ratio. By changing reserve requirements, the central bank alters the money multiplier, thereby changing the amount of money generated from a given monetary base. An increase in the required reserve ratio reduces the money multiplier and therefore leads to a reduction in the money supply whereas a decrease in required reserves has the opposite effect.

Money multiplier is very important because it shows how the total stock of money is a multiple of the monetary base. The multiple is called the complete money multiplier<sup>(15)</sup> and depends on the desired currency to deposit ratio, the required reserve ratio and the desired excess reserve ratio. For instance, suppose the RBI maintains a

monetary base of Rs.350 thousand crore and requires banks to keep 20 percent of deposits as required reserves. If banks keep 5 percent of their deposits as excess reserves and the public holds 25 percent of their deposits as cash, the total stock of money in the economy is

$$M = \left[ \frac{1 + 0.25}{0.2 + 0.05 + 0.25} \times 350 \right]$$

$$= 2.5 \times 350 = \text{Rs. 875 Thousand crore}$$

In other words, by maintaining a monetary base of Rs.350 crore, the RBI actually ensures that the economy has Rs.875 crore in money i.e. currency plus deposits. Naturally, if the RBI changes the monetary base, the amount of currency and checkable deposits will change, since banks will alter their reserves and the public will change their currency holdings. The change in the money stock that results from a change in the monetary base is given by

$$\Delta M = \left[ \frac{1 + c^d}{r^r + e^d + c^d} \times \Delta MB \right]$$

Since the change in the monetary base is multiplied by the complete money multiplier, the money stock changes by a multiple of the change in the monetary base. This example demonstrates the power the central bank has in changing the total amount of money in the economy. We can also use this formula to calculate the total amount of money created when the RBI purchases securities through open market operations. In this case MB will be the new additional purchase and with that we can calculate the total change in the money stock, i.e.  $\Delta M$ . since the total change in the money stock is a combination of currency and deposits, we will get it as  $\Delta M = \Delta C + \Delta D$ .

The money multiplier which shows the relation between monetary base and money supply has varied between 3.1 and 4.8 during the post-reform period (Table VI.9). It was below 4 till 1999-2000.

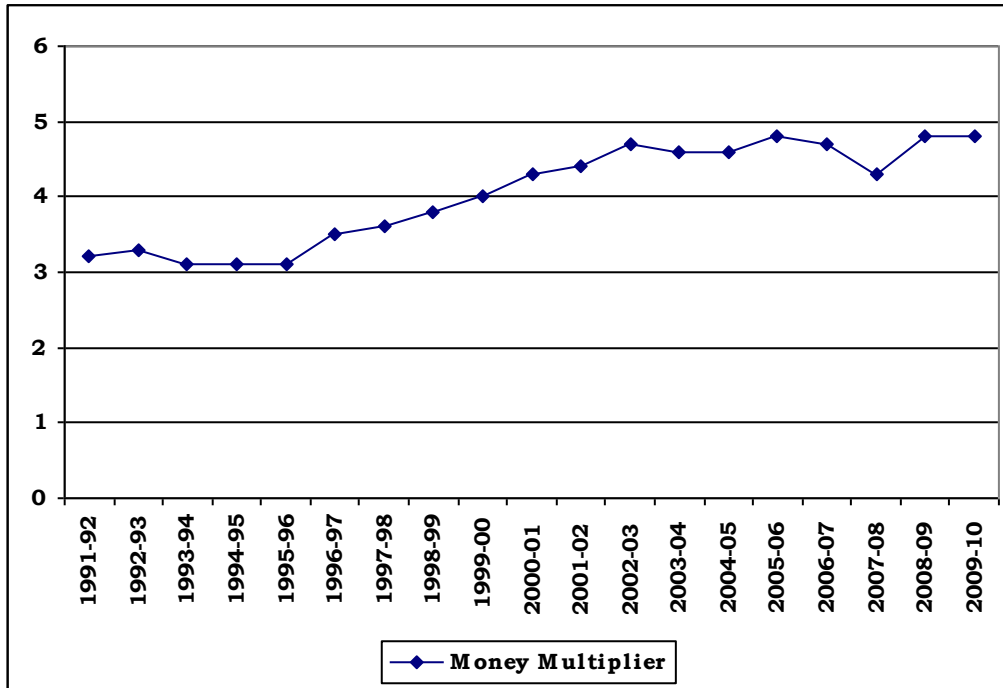
**Table: VI.9**  
**Money Multiplier during 1991 to 2010**

Year	Money Multiplier
1991-92	3.2
1992-93	3.3
1993-94	3.1
1994-95	3.1
1995-96	3.1
1996-97	3.5
1997-98	3.6
1998-99	3.8
1999-00	4.0
2000-01	4.3
2001-02	4.4
2002-03	4.7
2003-04	4.6
2004-05	4.6
2005-06	4.8
2006-07	4.7
2007-08	4.3
2008-09	4.8
2009-10*	4.8

*\* Data for 2009-10 are provisional*  
*Source: RBI Publications ( various issues)*

**Chart VI.5.**

**Trend in Money Multiplier during 1991- 2010**



During 1996-97, there was an increase in the money multiplier by the value of 0.4, i.e. it increased from 3.1 to 3.5 (Chart VI.5) and in the starting year of the global economic crisis also, i.e. in 2008-09, the multiplier has increased sharply from 4.3 to 4.8 (i.e. an increase of 0.5 in a single financial year). An increase in the value of money multiplier shows a definite rise in the stock of money because it multiplies the monetary base that much to reach at a higher value of M3.

### **6.2.3 MONEY SUPPLY IN INDIA**

Supply of money is the total stock of money held by the public in an economy. When money supply is viewed at a point of time, it is a stock and when viewed over a period of time, it is a flow. Money supply at a particular moment of time is the stock of money held by the public at a moment of time. It refers to the total currency notes, coins and demand deposits with the banks held by the public. The term 'public' refers to the individuals and the business firms in the economy, excluding the central Government, the Central bank and the commercial banks. The cash balances of the latter do not form money supply because they are not in actual circulation.

Over a period of time, money supply becomes a flow concept. It may be spent several times during a period of time. The average number of times a unit of money passing from one hand to another during a given period is called the velocity of circulation of money. Thus, the flow of money supply over the period of time can be known by multiplying a given stock of money held by the public by the velocity of circulation of money. In Fisher's equation,  $MV=PT$ ,  $MV$  refers to the flow of money supply over a period of time, where  $M$  stands for the stock of money held by the public and  $V$  for the velocity of circulation of money.

Regarding the constituents of money supply, there are two views: the traditional view and the modern view. According to the traditional view, money supply is composed of currency and legal tender money, i.e. coins, currency notes and bank money, i.e. checkable demand deposits with the commercial banks.

According to the modern view, the phenomenon of money supply refers to the whole spectrum of liquidity in the asset portfolio of the individual. Thus, in the modern approach, money supply is wider concept which includes coins, currency notes, demand deposits with the banks, time deposits with the banks, financial assets such as deposits with the non banking financial intermediaries, like the post office saving banks, building societies etc., treasury and exchange bills, bonds and equities.

The basic difference between the traditional and modern views is due to their emphasis on the medium of exchange function of money and the stock of value function of money respectively. While the acceptance of medium of exchange function of money supply gives a narrow view of money supply, the recognition of the store of value function of money provides a broader concept of money supply and allows for the substitutability between money and the whole financial assets.

In India, one rupee note and the coins are issued and managed by the Finance Ministry of the Government of India. All other notes are issued and managed by the Reserve Bank of India. The supply of notes and coins in a country are regulated by the system of note issue adopted in the country. According to the Reserve Bank of India Act, in 1957, the provision was made that the total value of gold coins, gold bullion and foreign securities, held in the issue department at any time should not be less than

Rs. 200 crore out of which the gold value should not be less than Rs. 115 crore. Thus, in India, the minimum reserve method is the governing principle of note issue.

Currency money is legal tender money and thus is called high-powered money. It includes the currency notes and coins issued by the central bank of a country. The creation of bank money depends upon the credit creation activities of the banks. Credit creation is based on the volume of cash, i.e. the high-powered money, held by the banks. The money created by the banks is known as secondary money. Thus, the total money supply in an economy is composed of the primary or high-powered money and the secondary or bank money. The relative proportions of the two constituents of money supply, i.e. currency money and bank money, depend upon the degree of monetization of the economy, the development of the banking system and the banking habits of the people. In the economically advanced countries, demand deposits constitute the major proportion of the total money supply. In less developed countries, like India, on the contrary, the proportion of currency with the public to the total money supply is much higher. In India, currency constitutes about two third of the total money supply, while the demand deposits are only one third. This is because of the low banking habits of the people here.

RBI being the monetary authority of India tends to regulate money supply, in order to influence the economic activities. This is done through monetary policy measures. Formulation and successful implementation of monetary policy requires an appropriate definition of money supply which must satisfy two conditions: (1) a close correspondence must exist between the theoretical definition of money and the empirical or measurable definition of money and (2) the empirical definition of money must be closely and predictably related to the ultimate national goals.

Until 1967-68, the RBI used to adopt only the narrow measure of money supply (M) defined as the sum of currency and demand deposits, both held by the public. From 1967-68, it started publishing additionally a broader measure of money supply, called aggregate monetary resources (AMR). It was defined empirically as money narrowly defined plus the time deposits of banks held by the public. From April

1977, the RBI has adopted four alternative definitions of money supply, labeled as  $M_1$ ,  $M_2$ ,  $M_3$  and  $M_4$ .

$$M \text{ or } M_1 = C + DD + OD$$

Where  $C$  = Currency held by public,

$DD$  = net demand deposits of banks

$OD$  = 'other deposits' of the RBI which include demand deposits of quasi-government institutions (e.g.: IDBI), foreign central banks and governments, the IMF and the World Bank, etc.

$$M_2 = M_1 + \text{Savings deposits with post office saving banks.}$$

$$AMR \text{ or } M_3 = M_1 + \text{net time deposits of banks.}$$

$$M_4 = M_3 + \text{total deposits with the post office savings organization (Excluding National Saving Certificates)}$$

In addition, the concept of 'high-powered money' ( $H$ ) is also used in India which includes the currency held by the public ( $C$ ) and the banks ( $R$ ) and 'other deposits' of the Reserve Bank of India ( $OD$ ).

$$H = C + R + OD$$

Since 1997-98, monetary data in India have been revised in line with the new accounting standards and consistent with the methodology suggested by the work Group on 'Money Supply: Analytics and methodology of compilation' (June 1998). The new series of broad money ( $NM_3$ ) differs from the old series ( $M_3$ ) by a magnitude comprising, Repatriable foreign currency fixed non-resident deposits with banks (FCNR (B)) and Resurgent India bonds (RIBS), and bank's pension & provident funds. However, they are excluded from monetary aggregates.

According to the report of the second working group on money supply of the RBI (1977), money supply has two-fold significance. It is both an economic as well as a policy controlled variable.

- (1) As an economic variable, money supply is influenced by the portfolio behavior of the public and the bank.
- (2) As a policy-controlled variable money supply is influenced by the views and behavior of the monetary authority.

The important policy implications of the various measures of money supply used in India are as follows:

**(1) M or  $M_1$**

$M_1$  defines money supply in the traditional sense and emphasizes the medium of exchange characteristic of money. It includes only the most liquid and the most generally accepted means of payment available as medium of exchange and for final settlement of debt.

**(2) High-powered Money (H)**

High-powered money refers to the money produced by the monetary authority of a country. In India, the RBI and the Government of India produce high-powered money. The RBI calls it as monetary base or reserve money. In fact, the whole process of multiple credit creation rests upon high-powered money. The stock of H is influenced by the following factors: (1) net RBI's credit to Government (2) RBI's credit to banks (3) RBI's credit to development banks (4) net foreign exchange assets of the RBI and (5) net non-monetary liabilities of the RBI. The monetary authority can regulate and control the magnitude and flow of credit by changing cash Reserves of banks (R) which is an important component of H.

**(3)  $M_2$**

Saving deposits, an important component of  $M_2$  are withdrawn on demand, subject to certain restrictions. But they do not serve as a medium of exchange because of lack of cheque facility. Thus,  $M_2$  presents a compromise between the need for conceptual neatness and operative feasibility. The post office saving deposits is less liquid than the demand deposits with banks, but more liquid than the time deposits.



#### (4) M<sub>3</sub>

Time deposits or fixed deposits, an important component of M<sub>3</sub>, are repayable after the expiry of the stipulated period. They cannot be withdrawn by cheque. Recurring deposits and a part of the saving deposits on which interest is allowed are also included in time deposits. M<sub>3</sub> represents aggregate monetary resources (AMR).

#### (5) M<sub>4</sub>

The Reserve Bank of India regards M<sub>4</sub> as the most comprehensive measure of money supply.

The RBI considers these four measures of money stock, i.e. M<sub>1</sub>, M<sub>2</sub>, M<sub>3</sub> and M<sub>4</sub> in the descending order of liquidity. In short, for practical purposes, mainly two money supply concepts are used in India:-

- (1) Narrow money (M<sub>1</sub>) and (2) Broad money (M<sub>3</sub>) or aggregate monetary resources. From the point of view of monetary management, M<sub>1</sub> indicates a flow and M<sub>3</sub> indicates a stock.

The RBI analyses the various sources of variation in money supply in India (M<sub>3</sub>) under the following five headings:-

1. Net Bank Credit to Government :- it includes
  - (a) RBI's net credit to Government and
  - (b) Other bank's credit to government
2. Bank credit to commercial sectors:- it includes
  - (a) RBI's credit to commercial sector and
  - (b) Other bank's credit to the commercial sector

It consists of credit by commercial banks, credit by co-operative banks and investments by commercial & co-operative banks in other securities

3. Net Foreign Exchange Assets of the Banking Sector:

It includes (a) RBI's net foreign assets and

(b) Other bank's net foreign exchange assets.

4. Government's currency liabilities to the public
5. Net Non-Monetary Liabilities of the Banking Sectors: - It includes (a) net non-monetary liabilities of RBI and (b) net non-monetary liabilities of other banks.

We can observe changes in each of these money supply sources, with the help of the tables given below for post- reform period. There are five panels; A, B, C, D and E, i.e. contributors of changes in money supply (M3).

Panel A of the sources of money supply (Table VI.10) shows the Net Bank Credit to government during 1991-92 to 2009-10. The various components of Net RBI credit to central Government, Net RBI credit to state governments, and other banks' investments in government securities together constitutes the Net bank credit to government. The first item of net bank credit to government, i.e. Net RBI credit to central government shows an increasing trend over the years till 1998-99. After 2000, it shows a steady decline and reaches at a negative value in 2004-05. In that year the net RBI credit to central Government was Rs.23,258 crore. It can be considered as a part of contractionary monetary measure of RBI to rein inflation. Although there has been an increase in the amount of credit in the succeeding year, it again started to decline and reached at Rs.1,14,636 crore in 2007-08. Hence, net RBI credit to central Government is considered as the most unpredictable item among the variables of money supply.

**Table VI.10**  
**Net Bank Credit to Government during 1991-92 to 2009-10**  
**(Rs. Crores)**

Year	Net RBI Credit to Central Government	Net RBI Credit to State Governments	Other Banks' Investments in Government Securities	Net Bank Credit to Government
1991-92	92266	1750	64247	158263
1992-93	96523	1926	77789	176238
1993-94	96783	2517	104618	203918
1994-95	98913	2565	120941	222419
1995-96	118768	2581	136429	257778
1996-97	120702	3479	164439	288620
1997-98	133617	1543	195437	330597
1998-99	145416	7123	234138	386677
1999-00	139829	8435	293115	441378
2000-01	146534	7343	358078	511955
2001-02	141384	10794	437387	589565
2002-03	112985	7695	555844	676523
2003-04	36920	7988	697996	742904
2004-05	-23258	5283	770411	752436
2005-06	5160	1439	752817	759416
2006-07	2136	287	825204	827626
2007-08	-114636	1427	1012727	899518
2008-09	61761	-181	1215619	1277199
2009-10*	219836	382	1448041	1668258

\* Data for 2009-10 are provisional

Source: RBI Publications various issues

The Reserve Bank's credit to the Centre is affected by LAF operations, OMO, MSS balances and Government's cash surplus with the Reserve Bank. Increase in repo/OMO purchases and decline in reverse Repo/ MSS balances/Government's surplus balances with Reserve Bank lead to increase in net Reserve Bank credit to the Centre and *vice versa*.

The net RBI credit to the state Government exhibit a cyclical variation over the years. It rises and falls frequently and attained at a negative value in 2008-09

(Rs.181crore). During the first half of the year, the economy was in need of absorption of excess liquidity. Other banks' investments in Government securities show an increasing trend over the years (1991-2010), except a slight decrease in 2005-06. However, the net bank credit to Government during the post-reform period was steadily increasing. A change in the net credit can change the money supply in the economy.

Total Bank credit to commercial sector during 1991-92 to 2009-10 is shown in Table VI.11 (panel B). It has two components such as RBI Credit to commercial sector and other bank's credit to commercial sector. Although RBI credit to commercial sector has showed rises and falls over the years, other banks' credit to commercial sector has been exhibiting a steady progress. Hence, the total bank credit to commercial sector has increased tremendously over the years. Any change in this item can cause to variations in M3 and hence it can influence the real economic variables directly and indirectly, especially those of the production sectors.

Analytically, credit can grow rapidly for three reasons, *viz.*, (i) financial deepening (trend); (ii) normal cyclical upturns (credit expansion); and (iii) excessive cyclical movements (credit booms) (IMF, 2004). When an economy develops, credit generally grows faster than GDP - a process known as financial deepening, reflecting the growing importance of financial intermediation. Temporarily, credit can also expand more rapidly than GDP because firms' investment and working capital needs fluctuate with the business cycle. Rapid lending may, thus, represent a permanent deepening of the financial system and an improvement of investment opportunities that are beneficial to the economy. Credit growth associated with these two factors is desirable, which can broadly be considered as a case of credit expansion.

**Table: VI.11**  
**Total Bank Credit to Commercial Sector during 1991-92 to 2009-10**  
**(Rs. Crores)**

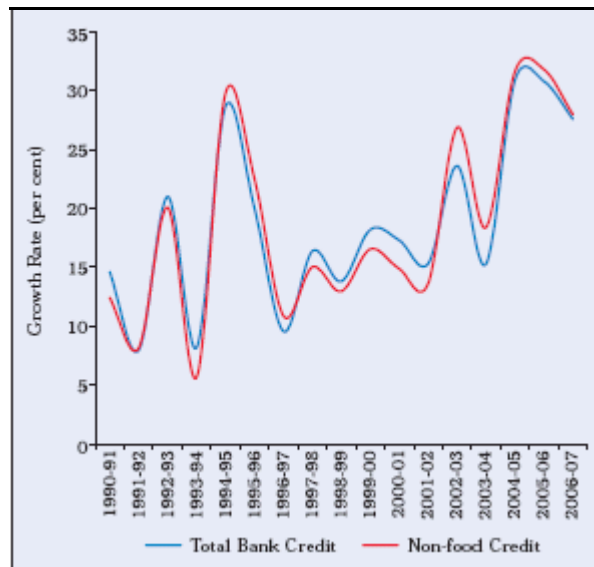
<b>Year</b>	<b>RBI Credit</b>	<b>Other Banks' Credit</b>	<b>Total Credit</b>
1991-92	7260	180733	187993
1992-93	6220	213915	220135
1993-94	6445	231329	237774
1994-95	6593	286131	292723
1995-96	6855	337793	344648
1996-97	6247	370060	376307
1997-98	8186	425124	433310
1998-99	12226	483764	495990
1999-00	15270	571294	586564
2000-01	13287	665932	679218
2001-02	5929	753718	759647
2002-03	3048	895932	898981
2003-04	2061	1014089	1016151
2004-05	1390	1274522	1275912
2005-06	1387	1687295	1688681
2006-07	1537	2127325	2128862
2007-08	1788	2577201	2578990
2008-09	13820	2999517	3013337
2009-10			3483253

*\* Data for 2009-10 are provisional*

*Source: RBI Publications ( various issues)*

If the credit expansion is accompanied by an excessive cyclical movement (over-optimism about future earnings), it can be a case of credit boom. In practice, it is difficult to distinguish among three factors, viz., financial deepening, financial accelerator and over-optimism about future earnings, driving credit growth and to determine a 'neutral' level or rate of growth for credit. International experience indicates that an excessive credit expansion (boom) is unsustainable and potentially destabilizing.

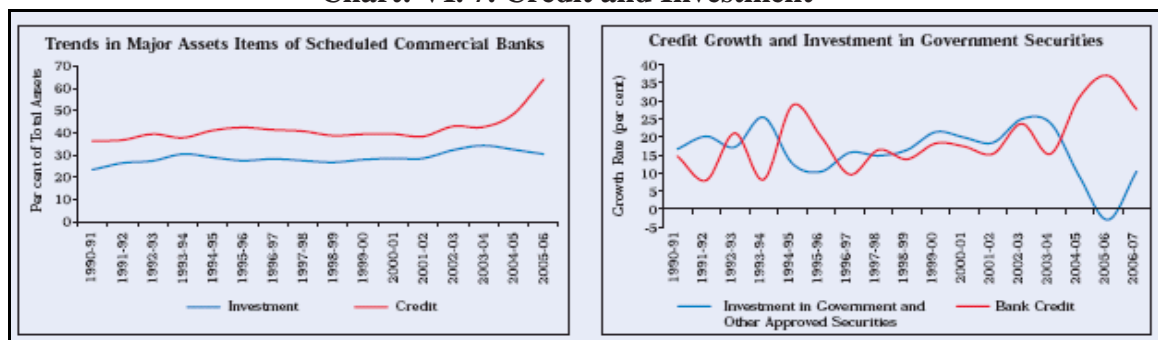
**Chart: VI.6. Bank Credit and Non-food Credit Growth**



Source: RBI Occasional paper (special edition, 2009)

Bank credit, after witnessing an erratic pattern in the first half of the 1990s, showed a deceleration from 1996-97 to 2001-02, growing at an average annual rate of 15.1 per cent as compared with 19.5 per cent in the preceding four years (Chart: VI.6). Several factors, both on the demand and the supply sides, contributed to the contraction of credit. Banks' investments in SLR securities remained more or less at that level (36.7 per cent) by end-March 2002, even as the SLR was brought down significantly to 25 per cent<sup>(16)</sup>. As a result of liquidation of securities for funding credit expansion in the recent years, the share of credit in total assets of scheduled commercial banks increased sharply, while that of investment declined (Chart: VI.7).<sup>(17)</sup>

**Chart: VI. 7. Credit and Investment**



Source: RBI Occasional paper (special edition, 2009)

**Table: VI.12**  
**Net Foreign Exchange Assets (NFA) of the Banking sector during**  
**1991-92 to 2009-10**

(Rs. Crores)

Year	NFA of the RBI	NFA of Other Banks	NFA of the Banking Sector
1991-92	18838	2388	21226
1992-93	22647	1796	24443
1993-94	51422	3190	54612
1994-95	74720	4312	79032
1995-96	74092	8049	82141
1996-97	94817	10679	105496
1997-98	115890	22204	138095
1998-99	137954	39900	177853
1999-00	165880	39768	205648
2000-01	197175	52645	249820
2001-02	263969	47066	311035
2002-03	358244	35471	393715
2003-04	484413	42173	526586
2004-05	612790	36465	649255
2005-06	672983	53211	726194
2006-07	866153	47026	913179
2007-08	1236130	59001	1295131
2008-09	1280116	72068	1352184
2009-10			1275039

\* Data for 2009-10 are provisional

Source: RBI Publications ( various issues)

The components of net foreign exchange assets of the Banking sector are ‘NFA of the RBI’ and ‘NFA of other banks’. We can examine the movements in NFA during the liberalization period, with the help of panel C (Table VI.12). NFA of the Banking sector has been increasing progressively during the eighteen years just because of the improvement in the first component, i.e. NFA of the RBI. It has shown a steady sharp progress all through the years, except in 1995-96, with a slight decrease in the value, compared to the previous year. We can see the second constituent, i.e. NFA of other banks has been rising and falling in continuous years. However, being the most

powerful source of change in the stock of money, the NFA influences the volume and movement of money supply in India. The improvement in its value shows the external stability that we have achieved over the years; especially in the post-liberalization period.

**Table: VI.13**

**Government's Currency Liabilities to the Public during 1991-92 to 2009-10**

**(Rs. Crores)**

<b>Year</b>	<b>Government's Currency Liabilities to the Public</b>	<b>RBI's Gross Claims on Banks</b>
1991-92	1704	5102
1992-93	1824	9885
1993-94	1990	5552
1994-95	2379	13470
1995-96	2503	21955
1996-97	2918	7005
1997-98	3352	7096
1998-99	3846	13262
1999-00	4578	16785
2000-01	5354	12965
2001-02	6366	10748
2002-03	7071	7160
2003-04	7296	5419
2004-05	7448	5258
2005-06	7656	5795
2006-07	8161	7635
2007-08	9224	4590
2008-09	10054	10357
2009-10*	10919	

*\* Data for 2009-10 are provisional*

*Source: RBI Publications ( various issues)*

Panel D (Table VI.13) shows Government's currency liabilities to the public during 1991-2010, along with RBI's Gross claims on banks. While RBI's Gross claims on banks had both upward and downward movements, Government's currency



liabilities to the public had only upward trend over the years. It has increased steadily from Rs.1704 crore to Rs.10,054 crore during the period. Hence, this liability contributes positively to the changes in the money stock (M3) in our economy.

Net non-monetary liabilities of the banking sector during 1991-2010 are given in Panel E (Table VI.14). It includes both 'net non-monetary liabilities of RBI' and 'net non-monetary liabilities of other banks'. It exhibits a progressive growth (except in 1996-97 and in 1998-99) and it was because of the increasing tendency of both the components over the years except in few years. However, net non-monetary liabilities of the Banking sector have a negative impact upon the money stock and it is an important source of change in M3.

**Table: VI.14**  
**Net Non- Monetary Liabilities of the Banking sector during 1991-92 to 2009-10**  
**(Rs. Crores)**

<b>Year</b>	<b>Net Non-monetary Liabilities of RBI</b>	<b>Net Non-monetary Liabilities of Other Banks</b>	<b>Net Non-monetary Liabilities of the Banking Sector</b>
<b>1991-92</b>	27415	24722	52137
<b>1992-93</b>	28246	30378	58624
<b>1993-94</b>	26037	41173	67210
<b>1994-95</b>	29358	39601	68958
<b>1995-96</b>	32297	55583	87880
<b>1996-97</b>	35184	42146	77330
<b>1997-98</b>	43282	40740	84022
<b>1998-99</b>	60540	22865	83406
<b>1999-00</b>	70222	43772	113994
<b>2000-01</b>	79345	53781	133126
<b>2001-02</b>	101220	67038	168258
<b>2002-03</b>	127141	131188	258330
<b>2003-04</b>	107585	179676	287261
<b>2004-05</b>	119776	319598	439374
<b>2005-06</b>	122463	339966	462429
<b>2006-07</b>	177019	390742	567761
<b>2007-08</b>	210221	554759	764980
<b>2008-09</b>	387927	495483	883410
<b>2009-10*</b>	310302	547600	857902

\* Data for 2009-10 are provisional; Source: RBI Publications ( various issues)

**Table: VI.15**  
**Measures of Money during 1991 to 2010**

(Rs. Crores)

Year	Reserve Money (M0)	Narrow Money (M1)	Broad Money (M3)
1991-92	99505	114406	317049
1992-93	110779	124066	364016
1993-94	138672	150778	431084
1994-95	169283	192257	527596
1995-96	194457	214835	599191
1996-97	199985	240615	696012
1997-98	226402	267844	821332
1998-99	259286	309068	980960
1999-00	280555	341796	1124174
2000-01	303311	379450	1313220
2001-02	337970	422843	1498355
2002-03	369061	473581	1717960
2003-04	436512	578716	2005676
2004-05	489135	649790	2245677
2005-06	571958	826415	2719519
2006-07	708890	967955	3310068
2007-08	928302	1155837	4017882
2008-09	988001	1253184	4764019
2009-10*	1155281	1485990	5579567

\* Data for 2009-10 are provisional

Source: RBI Publications ( various issues)

Among the different measures of money supply in India, the most important items are Reserve Money (M0), Narrow Money (M1) and Broad Money (M3). Changes in these measures during the post-reform period are given above in Table VI.15. In India, M3 is the most important measure of money supply. The value of M3 has increased over the years from Rs.3,17,049 crore in 1991-92 to Rs.55,79,567 crore in 2009-10. The value is always positive, showing an increasing trend in M3. Both

Reserve money and Narrow Money exhibits similar pattern of growth over the years. Since M0 is the monetary base of the economy, by changing the volume of M0, the monetary authorities can effectively influence the real macro economic variables and in that way can achieve the potential monetary objectives.

**Table: VI.16**  
**Components of Money Supply (M3) during 1991 to 2010**

(Rs. Crores)

Year	Currency with the public	Demand deposits with banks	Time deposits with banks	Other deposits with RBI
1991-92	61098	52423	202643	885
1992-93	68273	54480	239950	1313
1993-94	82301	65952	280306	2525
1994-95	100681	88193	335338	3383
1995-96	118258	93233	384356	3344
1996-97	132087	105334	455397	3194
1997-98	145579	118725	553488	3541
1998-99	168944	136388	671892	3736
1999-00	189082	149681	782378	3034
2000-01	209550	166270	933771	3630
2001-02	240794	179199	1075512	2850
2002-03	271581	198757	1244379	3242
2003-04	314971	258626	1426960	5119
2004-05	356314	286998	1595887	6478
2005-06	412124	407423	1893104	6869
2006-07	482854	477604	2342113	7496
2007-08	568410	578372	2862046	9054
2008-09	666364	581247	3510835	5573
2009-10*	768048	714157	4093577	3785

\* Data for 2009-10 are provisional

Source: RBI Publications ( various issues)

‘Currency with the public’, ‘demand and time deposits with banks’ and ‘other deposits with RBI’ constitute the components of money supply (M3) in India. We can examine the changes in these factors during 1991-2010 period, with the help of the table given above (Table VI.16). Among the various items, fixed deposits and demand

deposits can be taken together as the total deposits with the banks and then it is the largest component among the three constituents. ‘Other deposits with the RBI’ contributes the smallest portion and varies in both directions. The major components, i.e. the currency with the public and total deposits with the banks have exhibited a progressive growth over the years. It is interesting to note that, being a developing market economy, in India, the first component dominates the second (except in 2007-08). In the developed countries, the picture is quite different where; the demand deposits will always take a lion share rather than public’s currency.

**Table: VI.17**

**Broad Money (M3) Variations (Amount in Rs. Crores)**

Year	Outstanding as on March 31 2009	Absolute variation	Variation in %
1991-92	317049		
1992-93	364016	46967	14.8
1993-94	431084	67068	18.4
1994-95	527596	96512	22.4
1995-96	599191	71595	13.6
1996-97	696012	96821	16.2
1997-98	821332	125320	18.0
1998-99	980960	159628	19.4
1999-00	1124174	143214	14.6
2000-01	1313220	189046	16.8
2001-02	1498355	185135	14.1
2002-03	1717960	219605	14.7
2003-04	2005676	287716	16.7
2004-05	2245677	240001	12.0
2005-06	2719519	473842	21.1
2006-07	3310068	590549	21.7
2007-08	4017882	707814	21.4
2008-09	4764019	746137	18.6
2009-10*	5579567	815548	17.1

\* Data for 2009-10 are provisional; Source: RBI Publications ( various issues)

The value of broad money along with absolute and percentage variations is given in Table VI.17 for a period, 1991 to 2010. Since M3 is considered as money

supply in India, in almost all the policy measures and assessments, this value is taken into account. Hence, this monetary aggregate is most prominent in our analysis. A three to four percentage yearly growth in M3 is considered as preferable by many economists, for steady, healthy and progressive growth of an economy. But, an excessive increase in M3, will cause to make the reverse effect. We can observe the changes in broad money over the last eighteen years. The data shows both fall and rise in money supply during the period. In the first three years after the reform, M3 has increased sharply, but after that in 1995-96, it has declined by 8.8 percent. In that year, the country has been facing an economic slowdown and disinflation. The RBI started to cut off the CRR rates and took the measures to expand credit and liquidity. In the very next year, it started an upward trend and continued for two three years and after that there was continuous fall and rise in the growth rate of M3. In 2005-06, its value has been hiked into 21.1 percent from 12 percent, i.e. an increase of money supply growth by 9.9 percent in a single financial year. The economy has suffered from serious inflation in these years and the monetary authority started to take precaution and effective remedial measures. It increased the CRR, effectively made use of LAF with repo and reverse repo rates in order to ensure a comfortable liquidity position in the economy. The rates have been increased continuously until the starting of the global financial crisis in the second half of 2008. In 2008-09, M3 has started declining along with the slowdown of the global economy.

While observing the history of M3, especially in the last two decades, we can see tremendous rises and falls in the rate during the period. The growth rate of M3 has been exhibiting a value of above 12 percent always and it has been showing a more than 20 percent increase in 1994-95 and in 2005-08. The sharp variations in the value of M3 reveals the fact that there is still more scope for monetary policy implementation.

#### **6.2.4. THE PRICE LEVEL AND REAL OUTPUT**

The price level is a measure of the average prices of goods and services in the economy. It serves as a gauge of the general purchasing power of money. The Consumer Price Index (CPI) and the Wholesale Price Index (WPI) are the measures of

the price level most familiar to us in India and these rates are published regularly in newspapers. In addition to these, economists use several other measures of the price level to track price changes. The primary difference between these alternative measures of the price level is the composition of the basket of goods and services used to measure price changes.

Historically, all these measures of the price level have provided similar measures of price movements, so we will not concern ourselves with the minor technical distinctions among them. All these measures share a common feature. Their values are normalized to equal 100 in the base year – the year corresponding to the basket of goods and services that is being priced over time. If the price level was 100 in 2009 and increased to 103 in 2010, the price of the average good in the country increased by 3 percentage between the years.

Many union contracts have cost-of living adjustments that are indexed to the CPI that is the contracts specify that wages will rise when the CPI increases. Social security benefits are also indexed to CPI and each year social security recipients find that their retirement benefits increase in a similar way corresponding to the increase in the CPI. A lower CPI means it costs less to buy the basket today than it did in the base year. Thus, the CPI reports how much more or less expensive the fixed base year basket of goods and services would be in different years.

Wholesale price index is constructed on the basis of the wholesale prices of certain important commodities. The commodities included in preparing these index is mainly raw –materials and semi-finished goods. Only the most important and most price sensitive and semi-finished goods which are bought and sold in the wholesale market are selected and weights are assigned in accordance with their relative importance. The wholesale price index is generally used to measure changes in the value of money. The main problem with this index is that they include only the wholesale prices of raw materials and semi-finished goods and do not take into consideration the retail prices of goods and services generally consumed by the common man. Hence, the wholesale price index does not reflect true and accurate changes in the value of money.

Output can be measured both in nominal and real terms. Nominal output refers to the current rupee value of the final goods and services produced in the economy. Gross domestic product (GDP) the most commonly used measure of nominal output, is the total rupee value of all final goods and services produced in the economy in one year. Thus, GDP measures the current rupee value of final output, i.e. it measures only the output of goods and services sold to final consumers of the products. For example, the sale of a book by the book store to you, the final consumer is included in GDP. Moreover, GDP includes only new output not sales of used goods.

Since nominal output is the current rupee value of all final sales of newly produced goods and services in the country, it is the summation of the quantities of final goods and services multiplied by the product prices. We can represent this mathematically by using P to denote the price level and letting Y represent real output.

Real output is a measure of the physical quantity of goods and services available to the final consumers of the items. In this case, the rupee or nominal value of the real goods and services in the economy is simply the price level times real quantity of goods:

$$\text{Nominal output} = P \times Y$$

We can notice that if the price level i.e. P is doubled but the level of real output (Y) remained the same nominal output would double even though no additional goods and services are available. For this reason when the price level increase nominal output will increase even if real output remains constant. To avoid confounding growth and inflation, economists frequently use real output to measure the output of the economy. Real output is obtained by dividing nominal output by the price level.

$$Y = \frac{\text{Nominal output}}{P}$$

Economists use GDP to measure nominal output and the implicit price deflator to measure the price level associated with GDP. GDP deflator is the actual price level times 100. So real GDP in a year is calculated as

$$\text{Real GDP} = \frac{\text{GDP}}{P} \text{ and hence } \text{GDP} = P \times \text{Real GDP}$$

An increase in the GDP deflator over the years reveals that there is an increase in average prices during the years.

**Table: VI.18**  
**Gross Domestic Product (GDP) during 1991 to 2010 (base 1999-2000)**  
**(Rs. Crores)**

Year	GDP at current price	Annual growth (%)	GDP at Constant price	Annual growth rates of Real GDP
				At 1999-2000 price
1991-92	594168		1099072	
1992-93	681517	14.7	1158025	5.4
1993-94	792150	16.2	1223816	5.7
1994-95	925239	16.8	1302076	6.4
1995-96	1083289	17.1	1396974	7.3
1996-97	1260710	16.4	1508378	8.0
1997-98	1401934	11.2	1573263	4.3
1998-99	1616082	15.3	1678410	6.7
1999-00	1786526	10.5	1786525	6.4
2000-01	1925017	7.8	1864301	4.4
2001-02	2097726	9.0	1972606	5.8
2002-03	2261415	7.8	2048286	3.8
2003-04	2538170	12.2	2222758	8.5
2004-05	2877701	13.4	2388768	7.5
			New series at 2004-05 price	
2005-06	2967599	14.1	2967599	9.5
2006-07	3402316	15.1	3249130	9.7
2007-08	3941865	14.3	3564627	9.0
2008-09	4540987	14.2	3893457	6.7
2009-10			4154973	7.2

*Source: Economic survey 2009-10*

Annual growth rate of GDP at current price and annual growth rate of real GDP (GDP at constant price) are given in Table VI.18. The GDP at current price and its annual growth rate show a higher value than the real GDP. The real Gross domestic product has increased progressively during the first phase of the reform period. The year 1997-98 has witnessed a very low growth rate, ie.4.3 percent. The economy has



been facing a loss of energy and vigor during the year with a 3.7 percent reduction in the growth rate compared to the previous year's higher growth of 8 percent. Even though, there have been some steps from the monetary authorities to modulate credit and stabilize liquidity during the year, it didn't contribute much to progress. In the next year, the economy regained the higher pattern by achieving a rate of 6.7 percent and it can be considered as India's average or moderate rate of growth. The lowest growth rate, after the reform period was marked as 3.8 percent in 2002-03. The RBI took some measures, reduced the CRR, bank rates along with Repo and reverse repo rates in order to cope with the situation, and to expand credit availability. But it only helped to make a better year ahead. In the very next year, we achieved a growth rate of 8.5 percent. Again 2005-08 has shown a higher growth trend of more than 9 percent per year in real GDP. So seeing the table, we can conclude that Indian economy is enjoying a progressive rate of growth during the post-reform period.

Changes in the percentage share of GDP components to total GDP over the years are given in Table: VI.19. When we examine the relative changes in the importance of agriculture, industry and service sectors, we can see a remarkable change over the years that have helped to make a different trend in the economy.

**Table: VI.19**  
**Percentage Share of GDP Components to total GDP**

Year	Agriculture	Industry	Service
1990-91	31.4	19.8	48.8
1995-96	27.3	21.2	51.4
2000-01	23.9	20.0	56.1
2005-06	19.5	19.4	61.1
2008-09	17.0	18.5	64.5

*Source: RBI Various publications*

When we notice the case of our primary sector, its contribution to total GDP has diminished over the years. It shows a continuous fall throughout the period. Service sector provides just the opposite picture. The contributions from the tertiary sector has increased steadily, producing a major share and positively supporting the economy over the years. Its total share was 64.5 percent of GDP in 2008-09.

Industry sector in India has not progressed much after the reform period. Instead, it has maintained its balanced position among the other sectors, keeping an average share of 19.88% during the years. Thus, altogether, the table shows the emerging importance of the tertiary sector and diminishing contributions of the primary sector on Indian economy in the post-reform period.

According to World Bank report, India Gross Domestic Product accounts to 1217 billion dollars or 1.96% of the world economy. India being a diverse economy incorporates customary village farming, handicrafts and wide range of contemporary industry and services. Services are considered as a chief factor behind the economic elevation accounting for more than half of India's productivity. Since 1997, Indian economy has registered an average growth rate of more than 7 per cent, minimizing poverty rate by around 10 per cent.

India's GDP grew at a notable 9.2 per cent in the year 2006-2007. Now that the service sector accounts for more than half of the GDP is a landmark in the economic history of India and helps the nation to come closer to the basics of an industrial economy. The main industries that contribute efficiently towards GDP growth in India are: Textiles, Chemicals, Steel, Cement, Food processing, Transportation equipment, Mining, Petroleum, Machinery, Information technology enabled services and software. In the agricultural sector, the products that largely decide the fate of the economic growth in India are rice, wheat, pulses, cotton, oilseed, jute, sugarcane, tea, potatoes, cattle, water sheep, goats, buffalo, poultry and fish.

India is positioned as one of the major economies worldwide in terms of the purchasing power parity (PPP) of the gross domestic product (GDP) by chief financial units of the world such as the International Monetary Fund, the CIA and the World Bank.

In terms of agricultural output India is the second largest. In terms of factory output India ranks 14th in quantity produced by industrial sector.

GDP Deflator shows a higher value during the nineties on an average amounting to 8.6. But it has declined seriously to 4.4 during the second preceding

decade of reform, i.e. from 2000 onwards. A decrease in the GDP deflator shows that there is a decrease in average prices during the years.

**Table: VI.20**  
**GDP Deflator during 1991 to 2007**

Year	GDP Deflator
1991-92	13.8
1992-93	9.1
1993-94	9.6
1994-95	9.3
1995-96	9.4
1996-97	6.8
1997-98	6.4
1998-99	8.2
1999-00	4.6
2000-01	3.4
2001-02	3.0
2002-03	4.0
2003-04	4.2
2004-05	5.3
2005-06	4.8
2006-07	5.6
2007-08	4.5
2008-09	
2009-10	

*Source: Surjith S. Bhalla (2008)*

GDP deflator during the period of our study is given in Table: VI.20. When we observe the changes in deflator, we can see that the highest value (13.8) lies in 1991-92. Afterwards, the value shows a declining trend indicating an effective monetary control all over the years. The lowest value (3) was in the financial year 2001-02.

Economic strength of a nation is indicated by the GDP growth rate. Development in GDP will eventually boom business, employment opportunities and personal income. The India's GDP statistics is a summarization of all the differential factors that forms the basic foundation of the Indian economy. The India's GDP statistics is a cumulative report of the performance of all the major parameters of the Indian economy. The statistics of the GDP clearly reveals that the rise of the India's GDP after the 1990s was due to the open economy phenomenon. The paradigm shift of Indian economy from that of a closed-market to open market was during the balance-of-payments crisis in the late '80s. The Government of India remained flexible – it opened up the Indian markets so that private investments could easily find an entry.

**The trend for India's GDP growth rates are given below:**

- 1960-1980 – 3.5%
- 1980-1990 – 5.4%
- 1990-2000 – 4.4%
- 2000-2008 – 6.4%

With the stupendous growth of Indian Information Technology sector, Indian service industry and the Indian BPO sector, the Indian GDP shot up to 6% during the period from 1988 to 2003. It was after 2004, that the growth of the gross domestic product of India showed considerable improvements, mainly geared by the growth in the Indian service and manufacturing industry. The Indian GDP figure stood at an extraordinary 8.5% during the period thereafter. This growth rate has improved the per capita income and the standard of living and poverty has reduced by around 10%.

Between the period 2007 and 2008, India real GDP growth stood somewhere at 9.20% and 9.00%, respectively. However, owing to the global financial meltdown, witnessed by all the developed and developing nations alike, with few still managing to perform better, the GDP growth rate of India drastically fell down to 7.40%. This also added to the increase of fiscal deficit in India by 10.3% in the same period, making it the highest in the world. However, compared to other countries, the effect of the recession was not huge here. This was partly due to the fact that the economy in

India has still a balance between open market and social economic and monetary policies.

### 6.2.5. INFLATION AND ECONOMIC GROWTH

The inflation rate is the rate of change in the price level. Inflation rates are stated as a percentage change on an annual basis. For instance, if the price level is  $P_t$  in the year  $t$  and  $P_{t-1}$  in the year  $t-1$ , the inflation rate ( $\pi$ ) between years,  $t$  and  $t-1$  is defined as

$$\pi = \frac{P_t - P_{t-1}}{P_{t-1}}$$

We know that inflation is a persistent, general rise in the average prices of all goods. Literally millions of goods can be purchased in our economy. If the price of only one good increases by 5 percent, that increase does not reflect inflation; rather, it is an increase in the price of that single commodity. But if the average prices of all goods in the economy increase each year by, say 5 percent then we say the inflation rate is 5 percent.

Anything that causes the growth rate of the money supply to increase, the growth rate of velocity to increase, or the growth rate of out put to decrease, causes to inflation. Increase in the money stock leads to a higher price level. When the money stock is doubled in an economy without a corresponding increase in the commodities, the prices will also be doubled and thus nominal output seems as doubled as well. But the real output is constant and you are no better off than before the extra rupee is appeared.

If the money stock is  $M$  and velocity is  $V$ , the total rupee value of transactions in the economy is  $MV$ . Similarly, if  $P$  is the price level and  $Y$  is real out put, the rupee value of this output- nominal output- is  $P \times Y$ . Since the rupee value of transactions equals the rupee value of the goods and services in the economy, it follows that  $MV = PY$ . This fundamental relationship between the rupee value of exchanges and nominal output is known as the equation of exchange. <sup>(18)</sup>

This equation can be used to obtain the causes of inflation as follows.

$$\frac{\Delta M}{M} + \frac{\Delta V}{V} = \frac{\Delta P}{P} + \frac{\Delta Y}{Y} \text{ where } \Delta \text{ means 'a change in.' } \frac{\Delta M}{M} \text{ is the percentage}$$

change in or growth rate of the money stock,  $\frac{\Delta V}{V}$  is the percentage change in velocity,

$\frac{\Delta P}{P}$  is the percentage change in prices or the inflation rate, and  $\frac{\Delta Y}{Y}$  is the growth rate

of real output.

It is easier to visualize this, if we let gm represent the growth rate in money stock, gv the growth rate in velocity, gy the growth rate in real output and  $\pi$  the inflation rate. Then it is expressed as

$$Gm + gv = \pi + gy$$

This equation simply says that the growth rate in the money stock (gm) plus the growth rate in velocity (gv) equals the inflation rate ( $\pi$ ) plus the growth rate in real output (gy). We can rearrange this formula to obtain an expression for the inflation rate in terms of the growth rates of money, velocity and real output.

$$\pi = gm + gv - gy$$

The inflation rate thus equals the growth rate of the money stock, plus the growth rate of velocity minus the growth rate in real output. Changes in any of the three growth rates on the right-hand side of this equation can lead to changes in the inflation rate.

The classical economists hypothesized that the growth rate of velocity and the growth rate of output are relatively constant and unaffected by changes in the growth rate of money. In this case, changes in the growth rate of money would lead directly to changes in the inflation rate. This is the simplest form of the famous quantity theory, which attributes rises in the price level to changes in the quantity of money with regard to growth rates, changes in the growth rate of the money supply lead to changes in the inflation rate.

Let us suppose that velocity is constant and so that its growth rate is zero. In this case the inflation rate is simply the difference between the growth rate of the money stock and the growth rate of real output:

$$\pi = gm - gy$$

For example, if  $gm$  is 10% and  $gy$  is 3% then the inflation rate is 7%. This fundamental relation reveals that when velocity is constant, inflation is caused by increases in the money stock that exceed the growth rate in real output; i.e. too much money is chasing too few goods and services. Of course, velocity need not be constant especially when during periods of inflationary expectations. This is because inflationary expectations induce individuals to convert money into goods more rapidly in an attempt to buy things before prices increase. Since the inflation rate increases as the growth rate in velocity increases, growing inflationary expectations can in themselves fuel inflation.

Economic growth is the rate of change in real output. The economic growth rate is usually stated as a percentage change on an annual basis. If real output was  $Y_t$  in the year  $t$  and  $Y_{t-1}$  in year  $t-1$ , the economic growth rate between years  $t$  and  $t-1$  is defined as

$$gy = \frac{Y_t - Y_{t-1}}{Y_{t-1}}$$

In other words, economic growth shows change or increase in the real quantity of final goods and services produced in the country during a given period, normally one year.

The growth rate of GDP equals the growth rate of real GDP plus the growth rate of prices (the inflation rate). Thus using  $g$  to represent growth rates, we can calculate the growth rate of real GDP as

$$g \text{ real GDP} = g \text{ nominal GDP} - g \text{ price level}$$

where; the subscripts refer to what is growing. This formula reveals that the growth rate in real GDP i.e. the rate of economic growth equals the growth rate in nominal GDP i.e. nominal growth rate minus the growth in the price level (inflation). For instance, if prices increase by 5 percent per year and nominal GDP increase by 7 percent per year, real output increases by only 2 percent per year, since  $7\% - 5\% = 2\%$ .

As we showed earlier, the arithmetic difference between the growth rate of nominal GDP and the growth rate in the price level equals the rate of economic growth in each of these years.

**Table VI.21**

**Annual Rate of Inflation of Whole Sale Price Index (WPI) during 1991 to 2010**

Year	WPI Base 1993-94	Annual rate of inflation (%)
1991-92	83.86	13.7
1992-93	92.29	10.1
1993-94	100.0	8.4
1994-95	112.6	12.6
1995-96	121.6	8.0
1996-97	127.2	4.6
1997-98	132.8	4.4
1998-99	140.7	5.9
1999-00	145.3	3.3
2000-01	155.7	7.2
2001-02	161.3	3.6
2002-03	166.8	3.4
2003-04	175.9	5.5
2004-05	187.3	6.5
2005-06	195.5	4.4
2006-07	206.1	5.4
2007-08	215.9	4.8
2008-09	233.9	8.3
2009-10 <sup>P</sup>	242.9	3.8

*Source: Reserve Bank of India, various publications*



Table VI.21 provides the annual rate of inflation of whole sale price index (WPI) for the period 1991 to 2010. In the year 1991-92, it was 13.7%, but it never exhibited such a large value in the succeeding years. It may be partly due to the reform measures and partly because of RBI's effective control over the monetary aggregates of the economy and the banking system. Whenever there had been an increasing tendency in the inflationary rates, the monetary authority had taken effective steps to cut off the rates through proper measures. By analyzing the table, we can observe the effectiveness of monetary measures over the inflation throughout the years. In 1999-2000 and in 2002-03, it was as low as 3.3% and 3.4% respectively. In the first quarter of the last financial year (2009-10), it was passing through with a negative value (for few weeks). This could be considered partly as an after effect of the global financial crisis.

Consumer price index (CPI) measures the price levels of three major sectors such as industrial workers, urban non-manual employees and agricultural workers. For industrial workers, the lowest CPI inflation was in 1999-2000 (3.4%) and the highest was in 1991-92 (13.5%). For urban non-manual employees and agricultural workers also, the highest rate of inflation was in 1991-92, i.e. 13.7% and 19.3% respectively. For urban non-manual employees, the lowest rate was in 2003-04 (3.7%), while for agricultural workers, it was in 2000-01 with a negative value (-0.3%).

The Table VI.22 shows that even though our economy has witnessed both ups and downs in CPI inflation rates for various sectors, it has been curtailed rather effectively by our monetary authorities. The highest rates in different sectors were in the same single year, i.e. in the starting year of the financial reforms. Afterwards, the rates were under controlled by the regulatory authorities. Most of the monetary policy measures have acted together to rein inflationary pressures in the economy over the years and hence, financial stability can be considered as it's most feasible and achievable economic objective.

**Table: VI.22****Annual Rate of Inflation of Consumer Price Index (CPI) during 1991 to 2010**

Year	For industrial workers Base: 2001		For urban non manual employee Base: 1984-85		For Agricultural workers Base: 1986-87	
	CPI	Inflation rate (%)	CPI	Inflation rate (%)	CPI	Inflation rate (%)
1991-92	47	13.5	183	13.7	167	19.3
1992-93	52	9.6	202	10.4	188	12.3
1993-94	56	7.5	216	6.9	195	3.5
1994-95	61	10.1	237	9.7	218	11.9
1995-96	68	10.2	259	9.3	241	10.7
1996-97	74	9.3	283	9.3	256	6.0
1997-98	79	7.0	302	6.7	264	3.1
1998-99	89	13.1	337	11.6	293	11.0
1999-00	92	3.4	352	4.5	306	4.4
2000-01	96	3.7	371	5.4	305	-0.3
2001-02	100	4.3	390	5.1	309	1.3
2002-03	104	4.1	405	3.8	319	3.2
2003-04	108	3.7	420	3.7	331	3.8
2004-05	112	4.0	436	3.8	340	2.7
2005-06	117	4.2	456	4.6	353	3.8
2006-07	125	6.8	486	6.6	380	7.6
2007-08	133	6.4	515	6.0	409	7.6
2008-09	145	9.0	561	8.9	450	10.0
2009-10						

*Source: Reserve Bank of India, various publications*

The conventional method of measuring the annual rate of inflation has been based on comparing the level of prices with the level a year ago. An alternative approach is to measure the current inflationary pressure by looking at the change in prices over a short period and calculating an annualized rate on this basis.

Inflation in India 2009 stands at 11.49% Y-o-Y. The inflation rate is referred to the general rise in prices, taking into consideration the common man's purchasing power. Inflation is mostly measured in CPI. Inflation in India actually fell below 1% during the third week of March, 2009.

India's inflation can also be measured by the Y-o-Y variation in the Wholesale Price Index. While the inflation as measured by WPI is at present at a very low level, the inflation measured by the Consumer Price Index is at elevated levels of 9 to 10%.

The Reserve Bank's Annual Policy Statement in April 2009 recognized the emerging significant divergences between inflation in WPI and CPIs and emphasized that for policy purposes it continuously monitors the full array of price indicators.

The solution to the problem of inflation lies in rationalizing the pricing disparity between the producer and the consumer. This may ensure inflation stabilization and thus sustainable economic growth of India.

#### **6.2.6. MONETARY POLICY AND PRICE STABILITY**

Although the possible multiple goals of price stability, economic growth and financial stability are mutually reinforcing in the long run, the critical issue in the design of monetary policy is to meet the challenges of the trade-offs in the short run, which involve conscious policy choices. While there is very little disagreement over the fact that price stability should remain a key objective of monetary policy, reservations persist about adopting it as the sole objective of monetary policy.

The framework of monetary policy has undergone far-reaching changes all over the world in the 1990s, mainly in response to the challenges and opportunities of financial liberalization. There is, first of all, a clearer focus on price stability as a principal - though not necessarily the sole - objective of monetary policy. Besides, with the deregulation of financial markets and globalization, the process of monetary policy formulation has acquired a much greater market orientation than ever before, inducing a shift from direct to indirect instruments of monetary control. This has been accompanied by several institutional changes in the monetary-fiscal interface to ensure that central banks possess the autonomy to anchor inflation expectations.

**Table: VI.23**  
**Credit, Money and Price during 1991 to 2010**  
**(Rs. Crores)**

Year	Net Bank Credit	Broad Money (M3)	WPI
1991-92	158263	317049	83.86
1992-93	176238	364016	92.29
1993-94	203918	431084	100.0
1994-95	222419	527596	112.6
1995-96	257778	599191	121.6
1996-97	288620	696012	127.2
1997-98	330597	821332	132.8
1998-99	386677	980960	140.7
1999-00	441378	1124174	145.3
2000-01	511955	1313220	155.7
2001-02	589565	1498355	161.3
2002-03	676523	1717960	166.8
2003-04	742904	2005676	175.9
2004-05	752436	2245677	187.3
2005-06	759416	2719519	195.5
2006-07	827626	3310068	206.1
2007-08	899518	4017882	215.9
2008-09	1277199	4764019	233.9
2009-10*	1667096	5579567	242.9

*Source: Economic survey 2009-10; Reserve bank of India various publications*

*Note: Data of NNP and Real NNP up to 2003-04 are 1999-00 series and the data from 2004-05 are new series at 2004-05 prices*

*P- provisional data*

Our second study objective is to analyze the effectiveness of monetary policy in ensuring price stability in India. For the same, we have to take into account the changes in the credit, money and inflation during the period of our study. We are

taking both the absolute value and the percentage variations in all these variables and presenting them in Tables (VI.23 and VI.24).

Now, we can have a look into the variations in the values of these variables over the period for finding out the reasons behind them. Whether monetary policy is effective in implementing price and financial stability or not, will be clear from such a comparative analysis.

The values of all the three items have increased over the years, i.e. net bank credit, broad money and the price level. We can see the maximum values in the last financial year (in 2009-10), i.e. Rs. 16,67,096 crore, Rs. 55,79,567 crore and 242.9 respectively. The values have increased continuously during the period, showing a positive and direct correlation between the three; even though the rate of growth does not seem proportionate.

Percentage changes in these values also show a positive picture, but with frequent ups and downs in variations. Credit availability has exhibited its maximum percentage variation as 42 percent during 2008-09 and the minimum rate of change was 0.9 percent in 2005-06. Money supply has expanded at the maximum in 1994-95 (22.4 %) and contracted to the minimum of 12 percent in 2004-05. WPI has marked its minimum of 3.3 in 1999-2000 and it was at its highest position (13.7) in 1991-92.

Whenever there were price hikes during the years, monetary authorities successfully have made use of all the weapons effectively and prudently, to rein the inflationary pressures and to maintain financial stability in the economy. For example, after the initiation of reforms, during 1994-95, our economy has suffered from high inflation (12.6 %) and the money supply was as high as; it increased by 22.4 %. Credit availability was comparatively lower in the year (Table: VI.23). However, the RBI reduced the CRR continuously many times during the period, in order to mop up the excess liquidity. We can consider the improvements in the credit rate (by 15.9 %) and reduced money supply (by 13.6 %) along that, the fall in inflation rate (8 %) in the very next year, as the result of the proper treatment from the part of monetary authorities. In the last financial year also (2009-10), in order to curtail

inflationary pressures and to absorb excess liquidity, the RBI has raised the CRR, SLR, Repo and Reverse Repo rates altogether.

**Table: VI.24**

**Credit, Money and Price Variations during 1991 to 2010**

Year	Net Bank credit	Broad Money (M3)	WPI
1991-92		19.3	13.7
1992-93	11.4	14.8	10.1
1993-94	15.7	18.4	8.4
1994-95	9.1	22.4	12.6
1995-96	15.9	13.6	8.0
1996-97	12.0	16.2	4.6
1997-98	14.5	18.0	4.4
1998-99	17.0	19.4	5.9
1999-00	14.1	14.6	3.3
2000-01	16.0	16.8	7.2
2001-02	15.2	14.1	3.6
2002-03	14.7	14.7	3.4
2003-04	9.8	16.7	5.5
2004-05	1.3	12.0	6.5
2005-06	0.9	21.1	4.4
2006-07	9.0	21.7	5.4
2007-08	8.7	21.4	4.8
2008-09	42.0	18.6	8.3
2009-10*	30.5	17.1	3.8

*Source: Economic survey 2009-10; Reserve bank of India various publications*

*Note: Data of NNP and Real NNP up to 2003-04 are 1999-00 series and the data from 2004-05 are new series at 2004-05 prices*

*P- provisional data*

Maintenance of low and stable inflation has thus emerged as a key objective of monetary policy and a noteworthy development during the 1980s and the 1990s was the reduction in inflation across a number of countries, irrespective of their stages of development. This reduction in inflation is believed to be on account of improvements in the conduct of monetary policy, although there is an ongoing debate on this in view

of other factors such as globalization, deregulation, competition and prudent fiscal policies that might have also played a role. In advanced economies, inflation rates in the recent decade have averaged around 2-3 per cent per annum - consistent with the establishment of reasonable price stability. In developing and emerging economies too, inflation rates have declined significantly.

**Table: VI.25**

**Movements in Key Policy Rates (in percentage), WPI and CPI in India**

Effective since	WPI	CPI	Reverse Repo Rate	Repo Rate	Cash Reserve Ratio
March 2008	121.4	137	6.00	7.75	7.50
April 26, 2008	123.5	138	6.00	7.75	7.75 (+0.25)
May 10, 2008	124.0	139	6.00	7.75	8.00 (+0.25)
May 24, 2008	124.0	139	6.00	7.75	8.25 (+0.25)
June 12, 2008	127.3	140	6.00	8.00 (+0.25)	8.25
June 25, 2008	127.3	140	6.00	8.50 (+0.50)	8.25
July 5, 2008	128.6	143	6.00	8.50	8.50 (+0.25)
July 19, 2008	128.6	143	6.00	8.50	8.75 (+0.25)
July 30, 2008	128.6	143	6.00	9.00 (+0.50)	8.75
August 30, 2008	128.9	145	6.00	9.00	9.00 (+0.25)
October 11, 2008	128.6	148	6.00	9.00	6.50 (-2.50)
October 20, 2008	128.6	148	6.00	8.00 (-1.00)	6.50
October 25, 2008	128.6	148	6.00	8.00	6.00 (-0.50)
November 3, 2008	126.7	148	6.00	7.50 (-0.50)	6.00
November 8, 2008	126.7	148	6.00	7.50	5.50 (-0.50)
December 8, 2008	124.3	147	5.00 (-1.00)	6.50 (-1.00)	5.50
January 5, 2009	124.2	148	4.00 (-1.00)	5.50 (-1.00)	5.50
January 17, 2009	124.2	148	4.00	5.50	5.00 (-0.50)
March 4, 2009	123.2	148	3.50 (-0.50)	5.00 (-0.50)	5.00
April 21, 2009	124.6	150	3.25 (-0.25)	4.75 (-0.25)	5.00
February 13, 2010	134.8	170	3.25	4.75	5.50 (+0.50)
February 27, 2010	134.8	170	3.25	4.75	5.75 (+0.25)
March 19, 2010	135.8	170	3.50 (+0.25)	5.00(+0.25)	5.75
April 20, 2010	138.3	170	3.75 (+0.25)	5.25 (+0.25)	5.75
April 24, 2010	138.3	170	3.75	5.25	6.00 (+0.25)
July 2, 2010	140.3	178	4.0 (+0.25)	5.50 (+0.25)	6.00

*Note: Figures in parentheses indicate change in policy rates in per cent*

*Source: RBI Annual Report 2010*

Movements in key policy rates in percentage value, WPI and CPI in India are shown in table VI.25. It exhibits the rate of changes in monetary measures and the corresponding responses in WPI and CPI in India from 2008-10, i.e. during the global financial crisis. There are frequent changes in CRR, Repo and Reverse repo rates along that of changes in the price level. On June 25, 2008, repo rate was increased to 8.5% from 8 percent. Even then, there was an increase in CPI value from 140 to 143 on July 5, 2008. We can see similar situations again in the table, for example, on April 24, 2010, even though there was an increase in the CRR from 5.75% to 6%, there were sudden hikes both in the CPI value (from 170 to 178) and WPI value (from 138.3 to 140.3) on July 2, 2010. This shows that in certain situations, even though there are policy initiations from the RBI, it may not be fully effective. This is because, even when there are no changes in the money supply, there may be changes in the price level due to many other reasons. This problem can be resolved with the co-ordination and co-operation of other economic policy measures. Experiences tell us that, in India, fiscal policy has been proved as the best combination partner of monetary policy in order to achieve the economic goals like price stability and economic growth.

Improved monetary-fiscal interface and other reforms imparted greater flexibility to the Reserve Bank in its monetary management since the mid-1990s, even though it had to contend with large capital flows. Equipped with abundant food stocks and foreign exchange reserves, the Reserve Bank has been able to contain inflation. Significant success in reining in inflation has helped to lower inflation expectations.

Traditionally, it is believed that inflation is ultimately a monetary phenomenon, *i.e.*, sustained and high inflation is the outcome of excessive money supply. More recently, a significant body of literature has argued that general price level determination is essentially a fiscal, rather than a monetary, phenomenon (Woodford, 1997 and Cochrane, 1999). In the new 'fiscal theory of the price level' (FTPL) view, an independent central bank is not sufficient to ensure price stability. Price stability requires not only an appropriate monetary policy, but also an appropriate fiscal policy.



### **6.2.7. MONETARY POLICY AND ECONOMIC GROWTH**

India saw an economic policy reform in 1991. The reforms of the economic liberalization, which changed the economic face of the country, put an end to 'Red tapeism' and also to several public monopolies. Foreign direct investments in a number of sectors started pouring in.

Various types of Indian economic (monetary) indicators are used for various periods of time. These indicators are essential as they give us an accurate status of Indian economy at different periods. Thus these help us to analyze the Indian economy. An important economic indicator is the Rate of Inflation. The real gross domestic product (GDP), Money supply, Credit availability, Interest rates, Foreign trade, & balance of payment (BOP) are the other key macro economic indicators. Along that, we will have to discuss about net national product (NNP), saving – investment rates, and employment level to fulfill the purpose of our study.

Net National product at current price with its annual percentage growth and Real NNP growth rates are essential factors to be analyzed. NNP at factor cost during 1991 to 2010 (Table: VI.26), shows the variations in the value of net national product in India. There were frequent variations in the growth rate of real and nominal NNP over the years. Compared to the real growth rates, the values at current price are lower, as the usual case may be.

The highest growth rate in nominal NNP was in the financial year 1995-96 with a growth rate of 17.2% and lowest was in 2000-01 (7%). In the case of real NNP, the values are still lower, the highest growth was marked as 9.8 % in 2006-07 and the lowest as 0.9 % in 1991-92, i.e. in the starting year of the economic reforms. It never fell down to that amount (Rs. 9,76,319 crore) again, after the reform period. On the average, the real NNP growth rate during the years can be given as 6.4 % which is the same as the growth rate in the previous financial year, i.e. of 2008-09.

**Table: VI.26**  
**Net National Product (NNP) at factor cost during 1991 to 2010**  
**(Amount in Rs. Crore)**

Year	NNP at current price	Annual growth (%)	NNP at Constant price	Annual growth rate of real NNP
	At 1999-2000 prices			
1991-92	522120	14.4	976319	0.9
1992-93	597744	14.5	1028643	5.4
1993-94	699188	17.0	1088897	5.9
1994-95	818334	17.0	1159227	6.5
1995-96	958679	17.2	1243724	7.3
1996-97	1119238	16.7	1346276	8.2
1997-98	1244980	11.2	1404018	4.3
1998-99	1438913	15.6	1497195	6.6
1999-00	1589673	10.5	1589672	6.2
2000-01	1700466	7.0	1648018	3.7
2001-02	1849361	8.8	1743998	5.8
2002-03	1994217	7.8	1806734	3.6
2003-04	2237414	12.2	1961817	8.6
	New series at 2004-05 prices			
2004-05	2623995	12.9	2623995	7.3
2005-06	3006469	13.8	2872212	9.6
2006-07	3487172	15.2	3149912	9.8
2007-08	4031881	14.3	3449970	9.1
2008-09	4632304	14.2	3672192	6.4
2009-10				

*Source: Economic survey 2009-10*

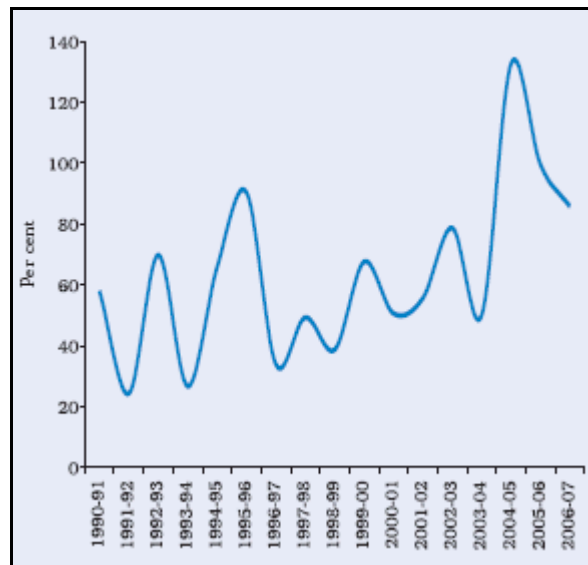
**Table: VI.27**  
**Credit- Deposit Ratio during 1991 to 2009**

Year	C-D Ratio
1991-92	54.4
1992-93	56.6
1993-94	52.2
1994-95	54.7
1995-96	58.6
1996-97	55.1
1997-98	54.1
1998-99	51.7
1999-00	53.6
2000-01	53.1
2001-02	53.4
2002-03	56.9
2003-04	55.9
2004-05	64.7
2005-06	71.5
2006-07	73.9
2007-08	73.9
2008-09	72.4
2009-10	70.8

*Source: RBI Publications*

Credit-deposit ratio during 1991 to 2009 is given in Table VI.27. The ratio is quite fluctuating over the years, showing frequent ups and downs, but taking altogether seems to reflect an upward trend. It was 54.4 in 1991-92, and reached at 70.8 in 2009-10, after a long ride. The highest C-D ratio was 73.9 during 2006-08 and the lowest was 51.7 in 1998-99. A higher credit-deposit ratio in an economy reveals that there is still scope for further development in various sectors and more credit is channelized through the monetary agents.

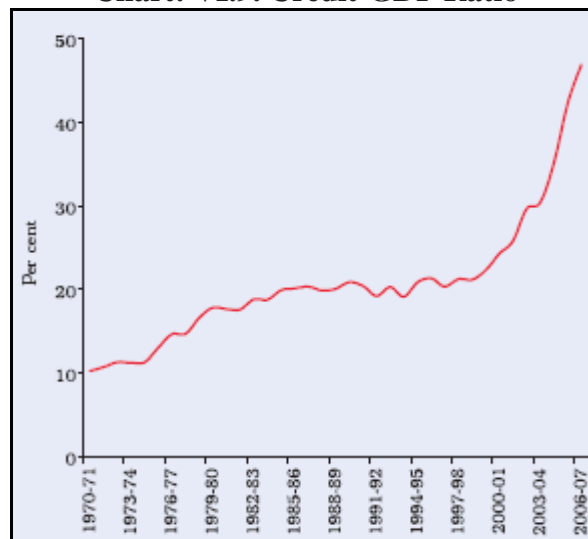
**Chart: VI.8. Incremental Credit-Deposit Ratio**



Source: RBI Occasional paper (special edition, 2009)

Banks in India have traditionally relied on deposits for funding their credit expansion. With rapid growth in credit in the recent period, incremental credit-deposit ratio exceeded 100 per cent in 2004-05, before sliding marginally below 100 per cent in 2005-06. (Chart: VI.8).<sup>(19)</sup>

**Chart: VI.9. Credit-GDP Ratio**



Source: RBI Occasional paper (special edition, 2009)

The rapid credit expansion, to an extent, reflects increased financial deepening as a result of deregulation. The credit-GDP ratio in India has been low in comparison

with other advanced and emerging market economies and is now moving up with the increase in credit penetration. (Chart: VI.9) <sup>(20)</sup>.

Gross domestic savings in our economy shows a pleasant and positive picture. It has been increasing over the years from 1991 to 2010. The saving rate has varied between 21.2% in 1992-93 (the lowest value) and 36.4% (the highest value) in 2007-08. It is the rate of increase in the saving rate that facilitates the overall growth of the economy. With a higher saving rate, inducing a higher investment, we can expect a higher rate of real GDP in the forthcoming years. (Table: VI.28)

**Table: VI.28**

**Gross Domestic Savings and Saving Rate during 1991 to 2009(base 1999-2000)**

<b>Year</b>	<b>Gross Domestic Savings (Rs. Crores)</b>	<b>Saving rate (%)</b>
1991-92	141089	21.5
1992-93	159682	21.2
1993-94	189933	21.9
1994-95	247462	24.4
1995-96	291002	24.4
1996-97	313068	22.7
1997-98	363506	23.8
1998-99	389747	22.3
1999-00	484256	24.8
2000-01	499033	23.7
2001-02	534885	23.5
2002-03	646521	26.3
2003-04	820685	29.6
2004-05	1044280	32.2
2005-06	1226044	33.1
2006-07	1474788	34.4
2007-08	1801469	36.4
2008-09	1811585	32.5

*Source: Economic survey 2009-10*

**Table: VI.29**  
**Net Domestic Savings' Variations (At Current Prices)**  
**Base year: 1999-2000**  
**(Amount in Rs. Crores)**

Year	Net Domestic Savings	Growth (per cent)
1991-92	79118	0.24
1992-93	87553	10.66
1993-94	109050	24.55
1994-95	153640	40.89
1995-96	179876	17.08
1996-97	184677	2.67
1997-98	219757	19.00
1998-99	227545	3.54
1999-00	302835	33.09
2000-01	297215	-1.86
2001-02	306588	3.15
2002-03	396014	29.17
2003-04	540637	36.52
2004-05	668832	23.71
2005-06	847714	26.75
2006-07	1038071	22.46
2007-08	1270165	22.36

*Source: Reserve Bank of India various publications*

Table: VI.29 shows net domestic saving variations during the period of study. It was as low as Rs.79,118 crore in 1991-92 (a growth of 0.24% only). After the reforms, it has started increasing and continued the rising trend for the first phase of reform period. In 1994-95, it was as high as 40.89 percent (the highest during the period) and then started to decline again. It fell down to 2.67 % in 1996-97 and continued its ups and downs over the period. During 2000-01, there is a negative growth in the net savings, i.e. -1.86 percent. The reason behind a very slow growth rate

during 1996, 1998 and 2000-02 were a fall in the interest rate, increase in consumption expenditure and a negative public sector saving (during 1998-2001) respectively. However, in recent years the net domestic savings exhibit a steady growth pattern of above twenty two percent.

**Table: VI. 30**  
**Sector-Wise Domestic Savings (At Current Prices)**

**Base year: 1999-2000**

**(Amount in Rs. Crores)**

Year	Household Sector	Private Corporate Sector	Public Sector	Gross Domestic Savings	Net Domestic Savings
1991-92	103495	20304	17290	141089	79118
1992-93	123315	19968	16399	159682	87553
1993-94	149534	29866	10533	189933	109050
1994-95	188790	35260	23412	247462	153640
1995-96	201015	59153	30834	291002	179876
1996-97	220973	62209	29886	313068	184677
1997-98	270308	65769	27429	363506	219757
1998-99	329760	68856	-8869	389747	227545
1999-00	412516	87234	-15494	484256	302835
2000-01	454853	81062	-36882	499033	297215
2001-02	504165	76906	-46186	534885	306588
2002-03	563240	99217	-15936	646521	396014
2003-04	664064	127100	29521	820685	540637
2004-05	716874	212048	68951	997873	668832
2005-06	864653	276550	86823	1228026	847714
2006-07	994898	342284	137926	1475108	1038071
2007-08	1150135	416936	212543	1779614	1270165

*Source: Reserve Bank of India various publications*

Sector-wise domestic savings examines the changes in the household, private corporate and public sector savings during the post-reform period (Table: VI.30). Household savings during the years has increased continuously, while public sector and private corporate sector have gone through many ups and downs in the saving rate. During 1998-2003 years, there were sharp dissavings in the public sector, showing a negative value in the ninth plan period. The reason was a hike in the government expenditure, i.e. in the spending of government administrative departments, in all those years.

However, the gross domestic saving has increased continuously in spite of the negative impact of public sector savings, and net domestic saving also has exhibited a similar pattern of progress over the years. This was due to the fact that the negative impact of the public sector during the years (1998-2003) was compensated by the heavy and sound saving contributions of private corporate and household sectors, and thus it helped to recharge the economy.

Net domestic capital formation (investment) with its growth rate both at current price and constant price are given above in the table (VI.31). It exhibits almost similar trend as the savings rate over the years. It has declined to a negative value during 1996, 1998 and in 2000-02. A major reason behind this slow growth in NDCF was the lower saving rate acquired during the period. Afterwards, it shows a steady growth pattern just like that of the saving rate. The NDCF both at current and constant prices were at the highest levels in years, 1994-95 and 2004-05. It was around 40 and 30 percentages respectively, during those years.



**Table: VI.31****Net Domestic Capital Formation (NDCF) during 1991-2008****Base year:1999-2000****(Amount in Rs. Crores)**

Year	Current price		Constant price	
	NDCF	Growth (%)	NDCF	Growth (%)
1991-92	82495	-15.1	139959	-27.0
1992-93	101369	22.9	157051	12.2
1993-94	113842	12.3	166657	6.1
1994-95	165533	45.4	221899	33.1
1995-96	200656	21.2	239290	7.8
1996-97	202415	0.9	227876	-4.8
1997-98	242059	19.6	263160	15.5
1998-99	245907	1.6	252510	-4.0
1999-00	324822	32.1	324822	28.6
2000-01	309970	-4.6	294803	-9.2
2001-02	292359	-5.7	265980	-9.8
2002-03	367528	25.7	330359	24.2
2003-04	479277	30.4	409905	24.1
2004-05	682171	42.3	531046	29.6
2005-06	892318	30.8	661054	24.5
2006-07	1084768	21.6	757377	14.6
2007-08	1336064	23.2	881177	16.3

*Source: RBI Publications, various years*

**Table: VI.32****Balance of Payment Variations during 1991-2009 (Rupees crore)**

Year	Export		Import		Trade Balance	
	Amount (Rs. Crores)	Growth (%)	Amount (Rs. Crores)	Growth (%)	Amount (Rs. Crores)	Growth (%)
1990-91	33153		50086		-16934	
1991-92	44923	35.5	51417	2.7	-6494	61.7
1992-93	54761	21.9	72000	40.0	-17239	-165.5
1993-94	71147	29.9	83870	16.5	-12723	26.2
1994-95	84329	18.5	112748	34.4	-28419	-123.4
1995-96	108482	28.6	146543	30.0	-38061	-33.9
1996-97	121193	11.7	173754	18.6	-52561	-38.1
1997-98	132703	9.5	190508	9.6	-57805	-10.0
1998-99	144436	8.8	199914	4.9	-55478	4.0
1999-00	162753	12.7	240112	20.1	-77359	-39.4
2000-01	207852	27.7	264589	10.2	-56737	26.7
2001-02	213345	2.6	268300	1.4	-54955	3.1
2002-03	260079	21.9	311776	16.2	-51697	5.9
2003-04	303915	16.9	367301	17.8	-63386	-22.6
2004-05	381785	25.6	533550	45.3	-151765	-139.4
2005-06	465748	22.0	695412	30.3	-229664	-51.3
2006-07	582871	25.1	862833	24.1	-279962	-21.9
2007-08	667757	14.6	1036289	20.1	-368532	-31.6
2008-09	798956	19.6	1341069	29.4	-542113	-47.1
2009-10						

*Source: RBI Publications, various years*

Balance of payment is the monetary expression of trade balance which is the balance between total exports and imports. Changes in the BOP over the years (from 1991 to 2009) are given in Table: VI.32. There are frequent variations in the export, import and also in trade balance over the years. The rate of change in trade balance

was at the highest in 1991-92, with a positive value of 61.7%, showing an improvement in exports over imports and the variation with a negative value was at its peak stage (-165.5%) in 1992-93 . This has shown a deceleration in the rate of growth of exports and at the same time, the widening trade deficit. Comparing the first and second decades after the reforms, the first 10 years has witnessed frequent and sharp variations in BOP value, while the latter decade (especially years 2000 to 2003) is driven with rather steady and balanced BOP.

**Table: VI.33**

**Components of Balance of Payments**

<b>Year</b>	<b>Trade Balance</b>	<b>Current Account Deficit</b>	<b>Capital Inflows</b>	<b>Reserves Outstanding</b>
<b>1991-92</b>	-6494	-2235	9509	-9351
<b>1992-93</b>	-17239	-12764	11883	-2481
<b>1993-94</b>	-12723	-3634	30415	-27368
<b>1994-95</b>	-28419	-10583	28743	-14575
<b>1995-96</b>	-38061	-19646	15596	9799
<b>1996-97</b>	-52561	-16282	40502	-20760
<b>1997-98</b>	-57805	-20883	37536	-14367
<b>1998-99</b>	-55478	-16789	35034	-16593
<b>1999-00</b>	-77359	-20331	48101	-26648
<b>2000-01</b>	-56737	-11598	39241	-27528
<b>2001-02</b>	-54955	16426	40167	-56593
<b>2002-03</b>	-51697	30660	51377	-82037
<b>2003-04</b>	-63386	63983	80010	-143993
<b>2004-05</b>	-151765	-12174	128081	-115907
<b>2005-06</b>	-229664	-43737	109633	-65896
<b>2006-07</b>	-279962	-44383	208017	-163634
<b>2007-08</b>	-368532	-68914	438603	-369689
<b>2008-09</b>	-542113	-132271	35156	97115

*Source: RBI Publications, various years*

In order to examine the external stability of our economy, we have to analyze important components of BOP such as trade balance, current account deficit, capital inflows and the outstanding reserves. All through the years, trade balance has showed

negative values and this deficit was exhibiting more or less increasing tendency. Current account deficit also has followed the same pattern except in few years, i.e. from 2001 to 2004. The third item, i.e. capital inflows has positive changes over the years including both ups and downs. It was as large as Rs. 4,38,603 crore in 2007-08. Except in years 1995-96 and 2008-09, outstanding reserve has showed a negative value and it was as huge as Rs.-3,69,689 crore in 2007-08 (Table: VI.33).

However, when we take the overall picture of our balance of payments, we can conclude that it has been progressing tremendously over the years, i.e. after the liberalization period.

As on June 4, 2010, India's foreign exchange reserves totaled US\$ 271.09 billion, an increase of US\$ 9.88 billion over the same period last year, according to the Reserve Bank of India's (RBI) Weekly Statistical Supplement. The outlook for the external sector suggests that despite persistence of the global recession in 2009, the external sector is unlikely to cause concern for growth and stability in India. The latest available trends for 2009-10 indicate that current account deficit as percentage of GDP would be lower than that in 2008-09. Both exports and imports continued to decline in 2009-10, but the decline in imports has been sharper than the decline in exports, resulting in a narrowing down of trade deficit. However, global oil prices have increased in recent months, which, if sustained, may put some pressure on the trade and current account deficits. Even though net capital flows were expected to decline, capital flows to India may increase because of better medium-term growth and faster recovery prospects. Early indications for 2009-10 suggested that NRI deposits, FII portfolio inflows and inward FDI flows have generally been strong, as against the net capital outflows witnessed in 2008-09.

### **Full employment as a policy objective in India**

No official poverty estimates are available in India beyond 1999-2000, the year of the 55th round of the National Sample Survey (NSS). It is well known that there was a significant decline in the poverty ratio from 36 per cent in 1993-94 to 26.1 per cent in 1999-2000. Some estimates of employment are available for the period beyond 1999-2000. As per the Annual Rounds conducted in July-

December 2002, employment growth in the country improved to 2.07 per cent per annum in 2000-2002 as compared to 1.07 per cent per annum in 1994-2000. In absolute terms, additional employment by 84 lakh per year on an average in 2000-2002 fell short of the target of additional employment of one crore per year. However, these estimates are based on thin samples which may contain large sampling errors.

The results of the NSSO's 61st Round survey on employment and unemployment conducted during 2004-05 threw a lot of light on the heated debate on jobless growth under reforms. The survey results showed how the annual growth rate of employment, which had declined from 2.1 per cent during 1983-1994 to 1.6 per cent during 1993-2000, went up to 2.5 per cent during 1999-2005. While employment has grown faster than before, with the demographic dynamics and higher labor force participation, rate of unemployment also went up marginally from 2.8 per cent to 3.1 per cent during 1999-2000 to 2004-05. Slowing down of the growth of agriculture was one of the main reasons for the growth in the unemployment rate. The Survey found that 47 million work opportunities were created during 1999-2000 to 2004-05, at an annual average of 9.4 million. Employment growth accelerated to 2.6 per cent during this period. Unemployment has gone up not because of high growth, but because growth was not high enough. It is important to avoid the misconception that inclusive growth, by necessity, will have to be low growth.

On the whole, for the period 2008 - 2009, there had been a net addition of 1.51 lakh jobs in the sectors altogether. Under the NREGA, which is a major rural employment initiative, during the year 2009-10, 4.34 crore households had been provided employment. Major employment is seen in the arena of agriculture, which can be projected as 60 percent. Industrial sector and service sector account for 12% and 28% of employment, respectively.

The Tenth Five Year Plan (2002-07) had set a target of reduction in poverty ratio by five percentage points by 2007 and by 15 percentage points by 2012.

**Table: VI.34**  
**Money, Prices and Output during 1991 to 2010**  
**(Amount in Rs. Crores)**

Year	M3	WPI	NNP	Real NNP
1991-92	317049	83.86	522120	976319
1992-93	364016	92.29	597744	1028643
1993-94	431084	100.0	699188	1088897
1994-95	527596	112.6	818334	1159227
1995-96	599191	121.6	958679	1243724
1996-97	696012	127.2	1119238	1346276
1997-98	821332	132.8	1244980	1404018
1998-99	980960	140.7	1438913	1497195
1999-00	1124174	145.3	1589673	1589672
2000-01	1313220	155.7	1700466	1648018
2001-02	1498355	161.3	1849361	1743998
2002-03	1717960	166.8	1994217	1806734
2003-04	2005676	175.9	2237414	1961817
2004-05	2245677	187.3	2623995	2623995
2005-06	2719519	195.5	3006469	2872212
2006-07	3310068	206.1	3487172	3149912
2007-08	4017882	215.9	4031881	3449970
2008-09	4764019	233.9	4632304	3672192
2009-10 <sup>P</sup>	5579567	242.9		

*Source: Economic survey 2009-10; Reserve bank of India various publications*

*Note: Data of NNP and Real NNP up to 2003-04 are 1999-00 series and the data from 2004-05 are new series at 2004-05 prices*

*P- provisional data*

The employment effects of the global economic recession have been a key driving factor behind the use of large stimulus packages all over the world. While no information is available at the macro-level in India on the unemployment scenario

arising from the slowdown in growth, unemployment very much remains a concern, and there are evidences of some increase in unemployment in certain sectors.

Third objective of our study is to find out, how much the monetary policy facilitated economic growth in India and its general impact in the post-reform period. For the same, we have to take into account the changes in the money, prices and output during the period of the study. We are taking both the absolute value and the percentage variations in all these variables and presenting them in Tables (VI.34 and VI.35).

Now, we can have a look into the variations in the values of these variables over the period for finding out the reasons behind them. Whether monetary policy is effective or not in ensuring economic growth, will be clear from such a comparative analysis.

Taking the absolute value, WPI shows an increasing trend over the years. Money supply, net national product and Real NNP follow the same trend over the period of eighteen years.

We can examine the percentage changes in these items in table (VI.34) Real NNP growth rate was as low as 0.9% in 1991-92. The value marked its highest growth rates in 2005-08 period which were more than 9 percentage, in each year. During the same period, we can observe that the percentage change in monetary growth was also high, i.e. more than 21 percent in each year (2005-08). At the same time, whole sale price index exhibited a moderate growth i.e. around 5% on the average in each year.

This reveals a positive correlation between money supply and real NNP in the economy over the years, essentially on the background of monetary discipline which is well managed by the monetary authorities. 'Controlled expansion' as the principal policy goal, is still continuing its ride over the years.

In years showing a slow growth of NNP (3.7 and 3.6 Percentages), i.e. in 2000-01 and in 2002-03 respectively, the monetary aggregate has shown a very slow rate of growth in 2002-03, and there was severe inflation during 2000-01.

**Table: VI.35**  
**Money, Prices and Output at factor cost during 1991 to 2010**  
**(Amount in Rs. Crores)**

Year	M3	WPI	NNP	Real NNP
1991-92	19.3	13.7	14.4	0.9
1992-93	14.8	10.1	14.5	5.4
1993-94	18.4	8.4	17.0	5.9
1994-95	22.4	12.6	17.0	6.5
1995-96	13.6	8.0	17.2	7.3
1996-97	16.2	4.6	16.7	8.2
1997-98	18.0	4.4	11.2	4.3
1998-99	19.4	5.9	15.6	6.6
1999-00	14.6	3.3	10.5	6.2
2000-01	16.8	7.2	7.0	3.7
2001-02	14.1	3.6	8.8	5.8
2002-03	14.7	3.4	7.8	3.6
2003-04	16.7	5.5	12.2	8.6
2004-05	12.0	6.5	12.9	7.3
2005-06	21.1	4.4	13.8	9.6
2006-07	21.7	5.4	15.2	9.8
2007-08	21.4	4.8	14.3	9.1
2008-09	18.6	8.3	14.2	6.4
2009-10 <sup>P</sup>	17.1	3.8		

*Source: Economic survey 2009-10; Reserve bank of India various publications*

*Note: Data of NNP and Real NNP up to 2003-04 are 1999-00 series  
and the data from 2004-05 are new series at 2004-05 prices*

*P- provisional data*

The accommodative monetary policy stance in the post-September 2008 period was reflected in 400 basis points reduction in CRR, 4.25 percentage point reduction in the repo rate, 2.75 percentage point reduction in reverse repo rate and several other conventional as well as non-conventional windows for access to liquidity (resulting in the availability of more than Rs.4,00,000 crore of additional actual/potential liquidity



to the system by the end of the year), The Reserve Bank ensured ample surplus liquidity in the system to ensure flow of credit to productive sectors, within the prudence necessary for preserving the asset quality of the banks.

According to the estimates by the Ministry of Statistics and Programme Implementation, the Indian economy has registered a growth of 7.4 per cent in 2009-10, with 8.6 per cent year-on-year (y-o-y) growth in its fourth quarter. The growth is driven by robust performance of the manufacturing sector on the back of government and consumer spending. GDP growth rate of 7.4 per cent in 2009-10 has exceeded the government forecast of 7.2 per cent for the full year. According to government data, the manufacturing sector witnessed a growth of 16.3 per cent in January-March 2010, from a year earlier.

India will overtake China to become the world's fastest growing economy by 2018, according to the Economist Intelligence Unit (EIU), the research arm of London-based Economist magazine.

The economy of India is the 12th largest in the world in terms of the rates of market exchange while in terms of the purchasing power parity (PPP), it is the 4th largest in the world. Since its independence in the year 1947, the economy of India has gradually grown and today it is one of the most developing economies in the global scenario. After independence, for a period of around one and a half decades, India followed the social democratic economic policies. From the year 1991, to keep pace with the changing trends in the market, a new liberalization policy was formulated. Due to the economic liberalization policies in the 1990s and the 2000s, the country steadily climbed up the economic ladder and by the year 2008, it became the second fastest growing economy in the globe.

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## **REFERENCES**

1. De Kock, M.H. 1956. Central Banking, Granada Publishing Limited, New Delhi, pp.146-175.
2. *Reserve Bank of India: Report on Currency and Finance, Various Years, (1991-2010), Mumbai.*
3. Nagpal, C.S, 1992. Dictionary of Economics, Anmol Publications, New Delhi, p.37.
4. Gupta, S.B. 1992. Monetary Economics Institutions, Theory and policy, S. Chand and Company Ltd, New Delhi, p.377.
5. De Kock, M.H. 1956. Central Banking, Granada Publishing Limited, New Delhi, pp.57-67.
6. *Reserve Bank of India: Report on Currency and Finance, Various Years, (1991-2010), Mumbai*
7. *Reserve Bank of India: Report on Currency and Finance, Various Years, (1991-2010), Mumbai.*
8. De Kock, M.H. 1956. Central Banking, Granada Publishing Limited, New Delhi, pp.179-180
9. Gupta, S.B. 1992. Monetary Economics Institutions, Theory and Policy, S. Chand and Company Ltd, New Delhi, p.374.
10. *Reserve Bank of India: RBI Occasional Paper (Special Edition, 2009), Mumbai.*
11. *Reserve Bank of India: Report on Currency and Finance, Various Years, (1991-2010), Mumbai*
12. *Reserve Bank of India: Report on Currency and Finance, Various Years, (1991-2010), Mumbai*
13. Chandler, L.V. 1964. The Economics of Money and Banking, Fourth Edition, Harper & Row Ltd, p.237.
14. *Reserve Bank of India: RBI Occasional paper, (special edition, 2009) Mumbai.*
15. Baye, Michael.R. and Jansen, Dennis. W. 2000. Money, Banking and Financial Markets- an Economics Approach, AITBS Publishers, Delhi, pp.474-477.
16. *Reserve Bank of India: RBI Occasional paper (special edition, 2009), Mumbai.*

17. *Reserve Bank of India: RBI Occasional paper (special edition, 2009), Mumbai.*
18. Baye, Michael.R. and Jansen, Dennis. W. 2000. Money, Banking and Financial Markets- an Economics Approach, AITBS Publishers, Delhi, pp.61-72.
19. *Reserve Bank of India: RBI Occasional paper (special edition, 2009), Mumbai.*
20. *Reserve Bank of India: RBI Occasional paper (special edition, 2009), Mumbai*
21. *Government of India: Economic Survey, 2009-10, New Delhi.*
22. *Reserve Bank of India, various publications, (1991-2010), Mumbai*

**CHAPTER-VII**

**SUMMARY, FINDINGS, CONCLUSION**

**AND RECOMMENDATIONS**

## **CHAPTER-VII**

### **SUMMARY, FINDINGS, CONCLUSION**

#### **AND RECOMMENDATIONS**

The comparative study of the selected monetary methods of credit control and money supply shows that each method has its own merits and demerits. No method, taken as alone, can produce effective results. The correct approach is that, instead of selecting this method or that method, all the methods should be judiciously combined in right proportions to achieve the objectives of monetary policy effectively.

A comparative picture of the distinctive features of our monetary policy weapons, i.e. bank rate, OMO, CRR, SLR, Repo Rate and Reverse Repo Rate are presented below:

#### **Bank Rate Policy**

1. It is an indirect method of influencing the volume of credit in the economy. It first influences the cost and availability of credit to the commercial banks and thereby, influences the willingness of the businesspersons to borrow and invest.
2. It does not produce immediate effect on the cash reserves of the commercial banks.
3. It is suitable only when marginal changes are desired in the cash reserves of the commercial banks.
4. It is flexible. It is applicable to a narrower sector of the banking system and therefore can be varied according to the requirement of local situation.
5. It is objective and not discriminatory in nature, it aims at controlling the total volume of credit in the economy without any regard for the uses for which the credit is put.
6. It attempts to control credit by influencing the cash reserves of the commercial banks.
7. In India, it is used as the reference rate to set other related rates.

### **CRR and SLR**

1. It is the most direct method because it controls the volume of credit by directly influencing the cash reserves of the commercial banks.
2. It produces immediate effect on the cash reserves of the commercial banks.
3. It is suitable when large changes in the cash reserves of the commercial banks are required.
4. It is not as flexible as the open market operations policy. Since it is applicable to the entire banking system, therefore, it cannot be varied in accordance with the requirements of the local situation.
5. It is discriminatory and subjective in nature. It aims at controlling the total volume of credit in the economy without any regard for the uses for which the credit is put.
6. It attempts to control credit by influencing the cash reserves of the commercial banks.
7. CRR is one of the most frequently used monetary weapons in India, while SLR is also active nowadays.

### **Open-Market Operations**

1. It is more direct method because it controls the volume of credit by influencing the cash reserves of the commercial banks.
2. It affects the cash reserves of the commercial banks through the purchase and sale of securities. Therefore, the success of this policy depends on the existence of a well-developed securities market in the economy.
3. It is suitable when marginal adjustments are needed in the cash reserves of the commercial banks.
4. It is not flexible. It can be applicable to a narrower sector or the banking system and therefore cannot be changed easily and quickly.
5. It attempts to control credit by influencing the cash reserves of the commercial banks.

6. It is objective and in discriminatory in nature, it aims at controlling the total volume of credit in the economy without any regard for the uses for which the credit is put.

### **Repo Rate and Reverse Repo Rate**

1. Repo and Reverse repo rates under the LAF allow the Reserve Bank to manage market liquidity on a daily basis and also transmit interest rate signals to the market.
2. It combines the various sources of liquidity available from the Reserve Bank into a single comprehensive window, with a common price.
3. The repo and reverse repo rates under the LAF have now emerged as the principal operating instrument of monetary policy.
4. Analytically, the LAF stabilizes regular liquidity cycles, by allowing banks to tune their liquidity requirements to the averaging requirements over the reporting fortnight and smoothening liquidity positions between beginning-of-the-month and end-of-the-month accounts.
5. The LAF irons out seasonal fluctuations.
6. It modulates sudden liquidity shocks, by injecting liquidity on account of say, temporary mismatches arising out of timing differences between outflows on account of Government auctions and inflows on account of redemptions.
7. The LAF has emerged as an effective instrument for maintaining orderly conditions in the financial markets in the face of sudden capital outflows to ward off the possibility of speculative attacks in the foreign exchange market.
8. By funding the Government through private placements and mopping up the liquidity by aggressive reverse repo operations at attractive rates, the LAF helps to minimize the impact of market volatility on the cost of public debt.
9. The LAF bore much of the burden of sterilization in the face of sustained capital flows, especially since November 2000, by mopping up bank liquidity through reverse repos

and at the same time, gradually reducing reverse repo rates to enable a softening of the interest rate structure.

10. The Reserve Bank tailors monetary policy action through both quantum and rate channels of transmission. The LAF accords the Reserve Bank the operational flexibility to alter the liquidity in the system (by rejecting bids) as well as adjusting the structure of interest rates (through fixed rate operations) in response to evolving market circumstances.
11. In view of large capital flows, the LAF emerged as the key instrument of managing capital flows through sterilization. This was reflected in the outstanding reverse repo amount which increased over the years.
12. The Bank Rate under normal circumstances should be aligned to the repo rate and, therefore, the entire liquidity support including refinance should be made available at the repo rate/Bank Rate.

During the 1990s, there has been an increasing shift from direct to indirect instruments of monetary policy. This is in consonance with the consistent preference for market-based instruments of monetary policy. The process has been reinforced by a switch, within the group of indirect instruments, from relatively less market-oriented instruments such as reserve requirements to relatively more market-oriented instruments such as open market operations.

The cash reserve ratio (CRR) remains a powerful instrument of monetary policy in India as well as in most of the developing economies. It not only impounds liquidity at the first instance but also directly impacts banks' cost of raising funds since a portion of deposit mobilization is continuously impounded by the central bank. Reserve requirements are especially effective in developing economies, as their financial markets are not mature enough for open market operations. The principal drawback of reserve requirements is that they impose an indirect tax on the banking system as an across-the-board levy, which does not take into consideration the relative liquidity position of the players in the credit markets.



Most central banks have, therefore, gradually de-emphasized the use of reserve requirements, and as noted earlier, prefer open market operations as a tool of monetary policy. This allows them to adjust market liquidity and impact on the interest rate structure at varying tenors through an auction mechanism in which market players are able to bid their preferences. For such market operations to be effective, the secondary markets need to be deep and liquid. At the same time, the central bank must have a sufficient stock of eligible securities to undertake market operations.

With the initiation of financial sector reforms, monetary management in India has been increasingly relying on the use of indirect instruments like open market operations and fine-tuning of liquidity conditions through the Liquidity Adjustment Facility. The modulations in policy interest rates have emerged as a principal instrument of signaling monetary policy stance.

Key monetary policy rates – the Bank Rate and the repo rate – have been reduced substantially since 1998 reflecting the countercyclical monetary policy stance. The Bank Rate was reduced from 11.0 per cent in January 1998 to 6.0 per cent by April 2003. The repo rate also witnessed a cut from 6.0 per cent in January 1999 to 4.5 per cent in August 2003. The reduction in key policy rates has been supplemented with cuts in cash reserve ratio from 10.5 per cent in January 1998 to 4.5 per cent by June 2003 (although subsequently increased to 5.0 per cent in September-October 2004). While the changes in policy rates were quickly mirrored in the money market rates as well as in Government bond yields, lending and deposits rates of banks, however, exhibited a degree of sluggishness.

With the changing framework of monetary policy in Indian from monetary targeting to an augmented multiple indicators approach, the operating targets and processes have also undergone a change. There has been a shift from quantitative intermediate targets to interest rates, as the development of financial markets enabled transmission of policy signals through the interest rate channel. At the same time, availability of multiple

instruments such as CRR, OMO including LAF and MSS has provided necessary flexibility to monetary operations.

While monetary policy formulation is a technical process, it has become more consultative and participative with the involvement of market participant, academics and experts. The internal process has also been re-engineered with more technical analysis and market orientation. In order to enhance transparency in communication the focus has been on dissemination of information and analysis to the public through the Governor's monetary policy statements and also through regular sharing of policy research and macroeconomic and financial information.

### **Effectiveness of Monetary Policy**

According to the Keynesians, monetary policy is ineffective and less reliable because of the following reasons. Monetary policy is only among many factors that determine the level of nominal national income in the short-run. Changes in money supply may lead to opposite changes in velocity and thereby limit the effectiveness of the monetary policy. Finally, during recession, investment is unresponsive to interest rate changes.

Keynesians believe that the economy operates under liquidity trap range (horizontal LM curve). The IS curve is vertical or interest inelastic. It is a depression economy in which prices, income level, rate of interest and velocity of money are very low and speculative demand for money is very high. In such a situation, monetary policy is ineffective. An increase in money supply does not shift the LM curve and therefore, there will be no change in the income level and interest rate.

The monetarists consider the monetary policy to be effective at least in the short period. They have produced empirical evidence to show that changes in nominal national income, employment and the price level are more closely related to changes in the money stock than to changes in Government expenditures and taxes.

Monetarists believe that the economy operates under the classical range (Vertical LM Curve). It is an inflationary situation when prices, income level, rate of interest and velocity of money are very high and speculative demand for money is at a minimum. The IS curve slopes downward or is interest elastic. Under such condition, monetary policy is fully effective. An increase in money supply will shift the LM curve. This will reduce the rate of interest, encourage investment and thus increase the income level.

### **MONETARY POLICY AND PRICE STABILITY**

The RBI is now more able and more responsible for controlling the overall growth of money and credit in a manner best suited for moderating inflation, while meeting the genuine credit needs of the economy. Its capacity for effective monetary management or any inflation control needs to be further strengthened through rapid deepening and broadening of primary and secondary markets for Government securities. With greater autonomy comes more responsibility.

The role of monetary policy has too long been a passive one, confined to financing the fiscal deficit at administered interest rates in order to minimize the cost to the Government. This has in the past encouraged fiscal profligacy with growing fiscal deficits, and larger and larger components of monetization which in turn has generated inflationary pressure and has distorted the financial system raising interest rates to the productive sector. It was necessary to make a decisive break from this pattern. With the reduction in the fiscal deficit, the Government was working towards a situation where interest rate distortions were reduced and monetary policy could be actively used for short-term macro-economic management. The Government has progressed towards this aim in the past years with a number of initiatives. The statutory liquidity ratio has been reduced, releasing resources to the banks for deploying additional funds in the commercial sector. Government borrowing was also being shifted to market-related rates; the 364-day bills were introduced with market-related interest rates. Other interest rates on securities were raised to bring them closer to market rates. Reserve Bank of India also conducted repurchase operations in securities for short-term liquidity management. It was decided

that these initiatives at monetary management must continue over the coming years.

### **Changes in the money supply**

According to the policy of neutral money, if the money is made neutral and the money supply is kept constant, there will be no disturbances in the economic system. In such situation, relative prices will change according to the changes in the demand and supply of goods and services, economic resources will be allocated according to the wants of the society and there will be no inflation and deflation. However, the money supply should not be kept constant under certain conditions.

1. The supply of money will have to be changed from time to time to provide for the changes in the velocity of money. It is in fact, the volume of effective money supply (including both the volume of standard and bank money as well as the velocity of circulation of the money) which should be kept constant.
2. The money supply will also be changed to neutralize the basic changes in the economic structure of the country. Such basic changes are changes in population, changes in the techniques of production innovations etc.

Monetary policy which aims at changing the money supply in order to achieve the national economic goals requires the following conditions to be satisfied.

1. A close correspondence must exist between the theoretical definition of money and the empirical (measurable) definition of money.
2. The monetary authority must be able to control the empirically defined money supply and to meet the intermediate monetary targets (such as monetary growth rate, interest rate etc) with the help of the instruments such as bank rate, open market operations etc.
3. The empirical definition of money must be closely and predictably related to ultimate national goals. Achievement of monetary growth rate or interest rate

targets is not enough. Such achievement must also change economic variables in the desired manner.

Monetary policy requires a meaningful and practical definition of money. Since changes in the supply of money affect important economic variables, they can also influence the attainment of ultimate national economic goals. The goals of internal price stability, international balance of payments equilibrium, economic growth, high employment are all directly or indirectly affected by the changes in money supply.

Variations in currency are not possible except over comparatively long period. Thus, changes in currency do not play an important role in the formulation of monetary policy.

‘Other deposits’ of the Reserve Bank include demand deposits of quasi-government institutions like the IDBI, foreign central banks and Government, the IMF and the World Bank, etc. These ‘other deposits’ constitute a very small proportion of High Powered Money (H). Therefore, they do not have any significant role to play in the monetary policy formulation.

Changes in Cash reserves (R) have important policy implications. The banks have to maintain certain cash reserves. If the supply of R is more than its demand, the banks will have excess reserves (ER), which they may use for loans and advances or may invest in marketable securities. Thus, changes in R have significant influence on the level of economic activity of the country. The monetary authority can regulate and control the magnitude and flow of credit by changing R.

Provided that there is a long run relationship between the money stock and the prices, the monetary targeting is considered as the best strategy through which a central bank choose the money stock as nominal anchor to provide price stability. In order for the money stock to be targeted intermediately, on the other hand, the central bank should be able to control the money stock. This necessitates, in turn, the followings: First, the monetary authority must choose a monetary aggregate which incorporates all the

instruments it uses to implement the monetary policy. Second, the relationship between the monetary aggregate and the money supply; i.e., the money multiplier must be stable and predictable. Provided that, the monetary base (H) is under the control of the monetary authority, the determination of the reasons behind the changes in the money multiplier becomes important in the implementation of monetary policy. Given that H is under the control of the Central Bank, it could only achieve its primary objective of providing the price stability by controlling the money multiplier as much as possible. The success of the monetary authority requires two things. First, in order to regulate the liquidity in the economy, the monetary authority must choose a monetary aggregate which consists of all instruments the monetary authority uses to enforce its policy. Second, there must be a stable relationship between the chosen aggregate and the money supply. Evidence from the past periods suggests that there is a high degree of association between the monetary base (H) and the money supply and it is the most important determinant of the money supply. The monetary authority can control the larger portion of the changes in the money supply by controlling the size of changes in H. There are some other factors, on the other hand, such as changes in the composition of deposits between demand and time deposits, changes in the composition of money between currency and deposits and the commercial banks' behavior in holding excess reserves which are all said to be outside the control of the monetary authority. All these factors are included in the money multiplier. Therefore, the predictability of the money multiplier and the degree of control of the monetary authority over H gain importance in determining the money supply.

### **MAJOR FINDINGS OF THE STUDY**

1. The basic emphasis of monetary policy since the initiation of reforms has been to reduce segmentation through better linkages between various segments of the financial markets including money, Government securities and foreign exchange markets.
2. It is now widely agreed that monetary policy can contribute to sustainable economic growth by maintaining low and stable inflation.

3. In India, the opening up of the economy in the early 1990s had a significant impact upon the conduct of monetary policy. Price stability remains the key objective of monetary policy and there is virtually a national consensus that high inflation is not good. Inflation expectations and inflation tolerance have come down. It even affects the spending decisions and saving pattern of the people.
4. Even in an environment of price stability, the 1990s witnessed episodes of financial instability. The presumption that price stability ensures financial stability is thus not true, at least in the short-run.
5. While the basic objectives of monetary policy, namely price stability and ensuring credit flow to support growth, have remained unchanged, the underlying operating environment for monetary policy has undergone a significant transformation.
6. In certain situations, even though there are policy initiations from the RBI, it may not be fully effective. This is because, even when there are no changes in the money supply, there may be changes in the price level due to many other reasons.
7. In order to create enabling conditions for low and stable inflation as well as inflation expectations, there is an emerging consensus to secure the independence of monetary policy from the budgetary requirements of the government.
8. The key development that has enabled a more independent monetary policy environment was the discontinuation of automatic monetization of the Government's fiscal deficit through an agreement between the Government and the Reserve Bank in 1997.
9. A significant shift is the move towards market-based instruments away from direct instruments of monetary management.
10. In order to meet challenges thrown by financial liberalization and the growing complexities of monetary management, the Reserve Bank switched from a monetary targeting framework to a multiple indicator approach.

11. Short-term interest rates have emerged as operative target or instruments of monetary policy. Central banks usually forecast market liquidity and then conduct open market operations to influence the interest rate structure to affect the real economy.
12. The introduction of the Market Stabilization Scheme has provided further flexibility to the Reserve Bank in its market operations.
13. Although there are complementarities between the objectives in the long run, there are certain trade-offs in the short run.
14. In line with international trends, the Reserve Bank has now put in place a liquidity management framework in which market liquidity is now modulated through a mix of open market and repo operations. The changes in reserve requirements and standing facilities were reinforced by changes in the policy rates, including the LAF rates and the Bank Rate.
15. While adequate availability of credit to meet investment demand continues to remain an important objective, the growing integration of the Indian economy with the global economy has led to financial stability emerging as a key consideration in the conduct of monetary policy.
16. With the growing globalization and integration of economies, monetary authorities are now required to pay greater attention to external developments. Swings in trade flows and especially capital flows are quite common and these impart a high degree of volatility to exchange rates.
17. As monetary policy emerges as the primary instrument of macroeconomic stabilization, the stance of monetary policy and the rationale are communicated to the public in a variety of ways, the most important being the monetary policy statements. The communications strategy and provision of information have facilitated conduct of monetary policy in an increasingly market-oriented environment.



18. Given the random nature of the shocks hitting the economy, central banks are increasingly acting as shock absorbers. In order to manage these shocks effectively, a steady stream of innovations is required by central banks in terms of instruments and operating procedures while strengthening their monetary policy framework.
19. Development of the monetary policy framework has also involved a great deal of institutional initiatives to enable efficient functioning of the money market: development of appropriate trading, payments and settlement systems along with technological infrastructure.

### **Conclusion and Recommendations**

The previous decade can be described as the decade of reforms for the Indian economy. While the early years of the decade witnessed the first phase of structural reforms in industrial, financial and external sectors, the final years saw the beginning of the second phase of economic restructuring. The decade of reform was successful in eliciting supply responses as evidenced in the higher growth of GDP, comfortable foreign exchange reserves, improving short term debt profile, moderate inflation and buoyant exports.

India's GDP is a combination of all the differential factors, contributing to the welfare of the Indian economy. India's GDP gives us a combined report of the performance of the Indian economy. 'Cost factor' or 'Actual price' method - these are the two methods to calculate Indian Gross Domestic Product. The main factor that contributed to the growth of India GDP post 1990s was the opening-up of the Indian economy. The markets were opened up; the Government leveraged the entry of private investments. As a result of this, more investments flowed into the markets.

The present study was an attempt to analyze systematically the techniques of monetary control measures with its relevance and changing importance and to find out their effectiveness in the Indian context especially to achieve the thriving objectives of price stability and economic growth.

There is definite and remarkable economic impact of monetary policy on Indian economy in the post-reform period. The importance of monetary policy has been increasing year after year. Its role is very relevant in attaining monetary objectives, especially in managing price stability and achieving economic growth. Along that, the use and importance of monetary weapons like Bank rate, CRR, SLR, Repo rate and Reverse Rate have increased over the years. Repo and Reverse Repo rates are the most frequently used monetary techniques in recent years. The rates are varied mainly for curtailing inflation and absorb the excess liquidity and hence to maintain price stability in the economy. Thus, this short-time objective of price stability is more successful on Indian economy rather than other long-term objectives of development.

Monetary policy rules can be active or passive. The passive rule is to keep the money supply constant, which is reminiscent of Milton Friedman's money growth rule. The second, called a price stabilization rule, is to change the money supply in response to changes in aggregate supply or demand to keep the price level constant. The idea of an active rule is to keep the price level and hence inflation in check. In India, this rule dominates our monetary policy. A stable growth is healthy growth.

## ***BIBLIOGRAPHY***

## BIBLIOGRAPHY

### Books

- Ackley, G. 1978. *Macro Economics: Theory and Policy*, Macmillan, New York.
- Bain, A.D. 1980. *The Control of Money Supply*, Penguin Education, England.
- Barro R.J. and Grossman, H.I. 1976. *Money, Employment and Inflation*, Cambridge University Press, Cambridge.
- Basu, S.K and Ghosh, A. 1974. *A Review of Current Banking Theory and Practice*, Macmillan India, New Delhi, 460p.
- Baye Michael, R. and Jansen Dennis. W. 2000. *Money, Banking and Financial Markets- an Economic Approach*, AITBS Publishers, New Delhi, pp.474-477.
- Berger, H. 1962. *Money, Banking and Public Policy*, Rand McNally and Co., 1st Edition, 714p.
- Bhole, L.M. 1985. *Impact of Monetary Policy*, Himalaya Publishing House, Mumbai pp.122-136.
- Burstein, M.L. 1963. *The Quantity Theory of Money: Money*, Schenkman, Cambridge, Chapter 14, pp.729-736.
- Campbell, C.D. and Campbell, R.G 1978. *An Introduction to Money and Banking*, Dryden Press, New York, 569p.
- Cansoneri, M. and Handerson, D.W. 1991. *Monetary Policy in Interdependent Economies*, MIT Press, Cambridge, Massachusetts.
- Cathcart, C.D. 1982. *Money, Credit and Economic Activity*, Chapter 4, Homewood, 111., Irwin
- Chandler, L.V, Goldfeld, 1977. *The Economics of Money and Banking*, Harper and Row Publishers, New York
- Chandler, L.V. 1964. *The Economics of Money and Banking*, Fourth Edition, Harper and Row Ltd, p.237.
- Chick, V. 1977. *The Theory of Monetary Policy*, Gray –Mills Publishing Ltd, London

- Chowdhry, Vikram. 2002. *Monetary Policy in India*, Deep and Deep Publications Pvt. Ltd. New Delhi. pp.1-15
- Clarida, Gali, R.J. and Gertler M. 1997. *Monetary Policy Rules in Practice: Some International Evidence*, Mimeo, New York
- Clower, R.W. (ed) 1967. *Foundations of Monetary Theory*, Penguin Education, England, pp.202-211.
- Clower, R.W. (ed). 1969. *Monetary Theory-Selected Readings: The Keynesian Counter-Revolution: A Theoretical Appraisal*. Penguin Education, England, pp.270-297.
- Collin, P.H. 2003. *Dictionary of Banking and Finance* (3<sup>rd</sup> Ed.), Bloomsbury, London
- Crowther, G. 1948. *An Outline of Money*, Rev. Edition, Thomas Nelson and Sons, London, 280p.
- Davidson, P. 1972. *Money and the Real World*, Macmillan, London.
- De Kock, M.H. 1956. *Central Banking*, Granada Publishing Limited, New Delhi, pp.146-175.
- Don, Patinkin. 1965. *Money, Interest and Prices*. Harper and Row Publishers, New York. pp.5-8.
- Einzig, P. 1949. *Primitive Money in its Ethnological Historical and Economic Aspects*. London: Eyre and Spottiswoode.
- Einzig, Paul. 1964. (2<sup>nd</sup> Ed.) *Monetary Policy-Ends and Means*. Penguin Books Ltd, Harmonds Worth, Middlesex, England. p.432
- Ellis, Howard 1941. *Exchange Control in Central Europe*, Harvard University Press, Cambridge, Mass, Vol. LXIX, pp. xiv + 413
- Fisher, D. 1976. *Monetary Policy*, Macmillan, New York
- Fisher, D. 1980. *Monetary Theory and the Demand for Money*, Macmillan, New York
- Fisher, Irving. 1922. *The Purchasing Power of Money*. Macmillan, London, pp.17-21.
- Fisher, Irving.1930. *The Theory of Interest*, Kelley, New York, Chapters 2, 19. pp.358-60.
- Friedman, M. 1956. *The Quantity Theory of Money- A Restatement, in Studies in the Quantity Theory of Money*, University of Chicago Press, pp.3-21.
- Friedman, M. 1970. *The Counter Revolution in Monetary Theory*, First Wincott Memorial Lecture, The Institute of Economic Affairs, pp.22-24.

- George Macesich 2002. *Money and Monetary Regimes: Struggle for Monetary Supremacy*. Greenwood Publishers, CT, U.S.A. p.332.
- Gerlah, S. and Smets, F. 1996. *MCIs and Monetary Policy in Open Economies under Floating Rates*, Mimeo, New York.
- Gibson, W.E. 1971. *Monetary Economics: Readings on Current Issues*, London Banker's Magazine.
- Gupta, S.B. 1984. *Monetary Planning for India*, Oxford University Press, Delhi.
- Gupta, S.B. 1992. *Monetary Economics: Institutions, Theory and policy*, S. Chand and Company Ltd, New Delhi, p.377.
- Gurley, G.J. and Shaw, S.E. 1960. *Money in a Theory of Finance*. Brooking Institution, Washington, pp.363-64.
- Hajela, J.K. 1985. *Monetary and Fiscal policies in India's Economic Development*, Chugh Publications, Allahabad.
- Handa, Jagadish, 2000. *Monetary Economics*, Routledge, 11, New Fetter Lane, London, p.766.
- Hanson, J.L. 1974. *Monetary Theory and Practice*, Macdonald and Evans, 5<sup>th</sup> Edition
- Hart, A.G. 1953. *Money, Debt, and Economic Activity*, Third Edition, Englewood Cliffs, NJ. Prentice Hall, New York, pp.3-6.
- Hawtrey, R.G. 1938, *A Century of Bank Rate*, Cass, pp.146 & 206
- Hicks J.R. 1946. *Value and Capital*, Second Edition, Oxford Clarendon Press, Oxford, pp.11-25.
- Hicks, J.R. 1967. *Critical Essays in Monetary Theory*. Oxford University Press, London. 226p.
- Johnson, H.G. 1963. 'Recent Developments in Monetary Theory', I.E.R, Feb. Vol.6, No.3, pp.29-69
- Johnson, H.G. 1964. *Money, Trade and Economic Growth*. Allen and Unwin, Chapter 5, pp.107-25.
- Kapila Uma, (Ed). 1997. *Money and Capital Market in India, Problems of Indian Economy*, Academic Foundation, Delhi, pp.390-434.
- Kent, R.P. 1961. *Money and Banking*, 4<sup>th</sup> Edition, University of Notre Dame, Indiana

- Keynes, J.M. 1923. *A Tract on Monetary Reforms*, Macmillan, London, p.682.
- Keynes, J.M. 1930. *A Treatise on Money*. 2 Volumes, Macmillan, London, Vol.1, pp.172-84.
- Keynes, J.M. 1936. *General theory of Employment Interest and Money*. Macmillan, London, p.403.
- Klien, L.R. 1966. *The Keynesian Revolution*, 2<sup>nd</sup> Edition, Macmillan, New York, pp.230-231.
- Kurihara, K.K. 1950. *Monetary Theory and Public Policy*, WW Norton and Co, New York, p.148.
- Laidler, D.E.W. 1969. *The Demand for Money: Theories and Evidence*, International Text Book, Scranton, p.2.
- Levacic Rosalind and Rebmann Alexander 2003. *Macro Economics- An Introduction to Keynesian Neo-classical Controversies*, 2<sup>nd</sup> Edition, Macmillan, London, p.446.
- Madden and Nadler 1935. *The International Money Markets*, Prentice Hall, New York
- Majumdar, N.A. 2004. *Economic Reforms and Development*, Academic Foundation, New Delhi.
- Marshall, A. 1924. *Money, Credit and Commerce*. Macmillan, London Chapter. 4, pp.38-50.
- Marx, Karl. 1867, *Capital*, Trans. S. Moore and E. Aveling. Chicago. 3 Volumes- Vol.1, pp.1906-1909
- Mill, J.S. 1888. 'Of Money', *Principles of political Economy*, Book.3, Longmans, Green and Co, 6<sup>th</sup> edition, Chapter.7, pp.293-307.
- Mithani, D.M. 1991. *Money, Public Finance and International Trade*, Himalaya Publishing House, Bombay.
- Nagpal, C.S, 1992. *Dictionary of Economics*, Anmol Publications, New Delhi, p.37.
- Patinkin, Don. 1965. *Money, Interest and prices*, 2<sup>nd</sup> Edition, Harper and Row, New York, Chapter 2, p.300.
- Patinkin, Don. 1972, *Studies in Monetary Economics: Price Flexibility and Full Employment*, Harper and Row Publishers, New York, pp.8-21.

- Paulson M. Chunkapura, 1989. *Monetary Policy*, Reliance Publishing House, New Delhi, p.323.
- Pesek, B.P. and Saving, T.R. 1967. *Money, Wealth and Economic Theory*. Macmillan, New York. pp.85-87.
- Pesek, B.P. and Saving, T.R. 1968. *Money, the Foundations of Money and Banking*. Macmillan, New York. pp.145-147.
- Pritchard, Leland J. 1964. *Money and Banking*, 2<sup>nd</sup> Edition, Houghton Mifflin Company, Boston, New York.
- Rangarajan, C. 1987. *Issues in Monetary Policy, in the Development Process of Indian Economy*, ASCI, pp.1-3.
- Rangarajan, C. 2000. *Perspectives on Indian Economy- A Collection of Essays*, UBSPD, New Delhi, pp.3-72.
- Reddy, Y.V. 2000. *Monetary and Financial Sector Reforms in India- A Central Banker's Perspective*, UBSPD, New Delhi. pp.275-277
- Ritter, S.L. and Silber, W.L. 1970. *Money: Selected Readings*, Basic Books, Inc., Publishers, New York, p.335.
- Robertson, D.H. 1940. *Essays in Monetary Theory*, King and Son, London
- Roy, H.N. 1962. *The Role of Monetary Policy in Economic Development*, The World Press, Calcutta, Chapter 9.
- Sayers, R.S. 1967. *Modern Banking*, London, Chapters 3, 7 and 11.
- Sen, S.N. 1961. *Central Banking in Underdeveloped Money Markets.*, 3<sup>rd</sup> Edition, Calcutta, Chapter 2.
- Shaw, G.K. 1960. *Money in a Theory of Finance*, Brooking Institutions. Washington, pp.356-364.
- Tarapore, S.S. 2001. *Monetary Management and Institutional Reforms*. UBSPD, New Delhi.
- The Royal Economic Society. 1967. *Surveys of Economic Theory (Vol.1)*
- Thorn Richard, S. 1976. *Introduction to Money and Banking*, Harper and Row Publishers, New York



Van Caspel, Venita. 1988. *Money Dynamics for the 1990s*, Simon and Schuster, New York.

### **Articles**

Abdul Ghafar Ismail 1994. 'Monetary Policy and Commercial Banks: A survey'. *Indian Journal of Economics*, 74(4): 431-456.

Acharya, Sankar 2002. 'Macro Economic Management in the Nineties'. *Economic and Political Weekly*, pp.1515-1538

Archibald, G.C. and Lipsey, R.G. 1958. 'Monetary and Value Theory: A critique of Lange and Patinkin', *Review of Economic studies*, Vol.26. pp2-22.

Arestis, P. 2006. 'The Nature and Role of Monetary Policy When Money is Endogenous'. *Cambridge Journal of Economics*. Vol.30(6), pp.847-860.

Barman, R.B. 2002. 'Forecasts of economic indicators for monetary policy in India: an assessment', *IFC Bulletin*, 13, pp.80-93.

Baumol William, J. 1952, 'The Transaction Demand for cash: An inventory- Theoretic Approach', *Quarterly Journal of Economics*, November, pp.545-556.

Bernanke, Ben S and Woodford, M, 1997. 'Inflation Forecasts and Monetary Policy', *Journal of Money, Credit and Banking*, Mimeo, New York, Vol. 29(4), pp.653-684.

Bhaumik Suman Kumar and Mukhopadhyay Hiranya 2000. 'RBI's Intervention in Foreign Exchange Market-An Econometric Analysis'. *Economic and Political Weekly*, pp.373-376.

Bhide, M.G. Prasad, A and Ghosh Saibal 2002. 'Banking Sector Reforms- A critical Overview'. *Economic and Political Weekly*, pp. 399-408.

Brunner, K. and Metzler, A.H. 1973. 'Mr. Hicks and the Monetarists', *Economica*, Vol.40: pp.44-59.

Burnner, K. 1961. 'Some Major Problems in Monetary Theory'. *American Economic Association, Papers and Proceedings*, Vol. 51(b), pp. 47-56.

- Charlse Bean, 2003. 'Asset Prices, Financial Imbalances and Monetary Policy: Are Inflation Targets Enough?', *Bank for International Settlements*, Basel, 29 March 2003. pp.48-76.
- Clower, R.W. 1967. 'A Reconsideration of the Micro Foundations of Monetary Theory,, *Western Economic Journal*, Vol.6, pp.1-9.
- Correa Romar. 2001. 'Macroeconomic Policy and Asset Markets'. *Economic and Political Weekly*, pp.347-49
- Crow John W. 1993. 'Central Banks, Monetary Policy and the Financial System'. *Journal of Indian Institute of Bankers*, 64(4), pp.197-202.
- Datar, M.K., 2001. 'Interest Rates, on Small Savings and PF Schemes', *Economic and Political Weekly*, December 1, pp.4450-4451
- Deepak Lal, Shashanka Bhide, and Deepa Vasudevan, 2001. 'Financial Exuberance – Savings Deposits, Fiscal Deficits and Interest Rates in India'. *Economic and Political Weekly*, November 3, pp.4196-4203.
- Dhanasekaran, K. 1995. 'Measuring the Relative Effectiveness of Monetary and Fiscal Policies on Aggregate Income: A Recent Evidence from India'. *Prajnan* 24(3): 245-256.
- Dhanasekaran, K. 1996. 'Relative efficiency of monetary and fiscal actions on aggregate economic activity: A recent econometric evidence from India'. *Indian Economic Journal*, 44(1), pp.70-84.
- Duguay, P. 1994. 'Empirical Evidence on the Strength of the Monetary Transmission Mechanism in Canada –an Aggregate Approach', *Journal of Monetary Economics*, 33(1), pp.39-61.
- Economic Diary, Quarterly, *UPERC*, Lukhnow, Various Years
- EPW Research Foundation, 1997. 'Chasing a monetarist. Will-'o'-the-Wisp' *Economic and Political Weekly*, March 22, pp.576-580.
- EPW Research Foundation, 1999. 'Monetary Policy: Promise of New Perspective Belied'. *Economic and Political Weekly*, November 20, pp.3254-3260.
- EPW Research Foundation, 2000. 'Exchange Rate Management'. *Economic and Political Weekly*, August 12, pp.2891-2897.

- EPW Research Foundation, 2000. 'Success on Interest Rates Front'. *Economic and Political Weekly* 35(3), pp.82-88.
- EPW Research Foundation 2000. 'Money Banking and Finance', *Economic and Political Weekly*. pp.387-388.
- EPW Research Foundation, 2001. 'Imparting Dynamism to Credit Delivery'. *Economic and Political Weekly*, pp.3963-3967.
- EPW Research Foundation, 2002. 'Credit Policy: Beyond Expansionary Signals'. *Economic and Political Weekly*, March 16-22, Vol. 37(11), p.992
- EPW Research Foundation, 2002. 'Stable Interest Rates Profile'. *Economic and Political Weekly*, January 19, pp.182-188.
- Errol D'Souza, 2001. 'The Changing Monetary Environment'. *Economic and Political Weekly*, January 27, pp.299-301.
- Errol D'Souza, 2003. 'What is Monetary Policy Doing?'. *Economic and Political Weekly*, February 22, pp.821-823.
- Fontara Ginseppe and Palacio Vera Alfonso. 2005. 'Are Long-Run Price Stability and Short-Run Output Stabilization all that Monetary Policy can Aim For?' *Working Paper No: 430*, The Levy Economics Institute of Bard College.
- Frank Smets, 1997. 'Financial-asset Prices and Monetary Policy: Theory and Evidence', *BIS Working Paper No. 47*. Basel, Switzerland, December, 41(1), pp.1-56.
- Friedman M. 1959. 'The Demand for Money: Some Theoretical and Empirical Results', *Journal of Political Economy*. Vol.67, pp.327-351.
- Friedman Milton. 1966. 'Interest Rates and the Demand for Money'. *Journal of Law and Economics*. Vol. 9, October, pp.71-85.
- Friedman Milton. 1968. 'The Role of Monetary Policy', *American Economic Review*, March, Vol. 58(1), pp.1-17.
- Fuher J. and Moore, G.1992. 'Monetary Policy Rules and the Indicator Properties of Asset Prices', *Journal of Monetary Economics*, 29(2), pp.303-336.
- Garry Schinasi, J. 1995. 'Asset Prices, Monetary policy, and the Business Cycle'. *Southern Economist*, 34(4), June 15, pp.18-21.

- Ghosh, Arun. 1994. 'Adjustment Programs and Interest Rate Policy'. *Economic and Political Weekly*, 29(25) June 18, pp.1501-1505.
- Gian Kaur 1995. 'Monetary and Fiscal Policies in India: A Test of their Relative Effectiveness'. *Indian Economic Journal*, 43(1), pp.55-66.
- Government of India, *Economic Survey* (Various years), 1991-2010.
- Gupta, S.P. and Srinivasan, T.G. 1984. 'Inflation and the Role of Administered Prices' *Economic and Political Weekly*. Sep.8, p.1579.
- Gurley, G. 1960. 'The Radcliffe Report and Evidence: A Review Article'. *American Economic Review*. pp.672-700
- Gurley, G.J. and Shaw, S.E. 1955. 'Financial Aspects of Economic Development'. *American Economic Review*, Vol.45, pp.515-38.
- Hicks, J.R. 1935. 'Suggestion for Simplifying the Theory of Money'. *Economica*, Reprinted in Friedrich A. Lutz and Lloyd.W.Mints (eds) Vol.2, pp.1-19.
- Indranil Sen Gupta, Indranil Bhattacharyya, Satyananda Sahoo and Siddhartha Sanyal. 2003, 'Anatomy of Liquidity Management'. *Journal of Economics and Business*, Vol.55(4), pp.353-370.
- Jalan, Bimal. 2002. 'Indian Banking and Finance: Managing New Challenges', *RBI Bulletin*, February. pp.71-86.
- Johnson, H.G. 1969. 'Essays in Monetary Theory, Money in Neo-classical Growth Model', *Journal of Political Economy*, pp.860-876.
- Johnson, H.G. 1973. 'Essays in Monetary Economics, 'Monetary Theory and Policy'', *American Economic Review*, L 11, pp.335-384.
- Johnson, Harry G. 1968. 'Issues in Monetary Research'. *The Journal of Political Economy* Volume 76(4), Part II.
- Kamesam, Vepa. 2002. Indian Banking of Tomorrow, *RBI Bulletin*.
- Kamesam, Vepa 2002. Indian Economy-Financial Sector Reforms and Role of RBI. *RBI Bulletin*.
- Kangasabapathy, R. 2001. 'Monetary Policy Underpinnings – A perspective'. *Economic and Political Weekly*, January 27, pp.303-310.

- Kannan, R., Indranil Sen Gupta and Sidharathan Sanyal, 2003. 'Liquidity Measures as Monetary Policy Instruments'. *Economic and Political Weekly*, October 4, pp.4251-4259.
- Kannan, R., Siddhartha Sanyal and Binod Bihari Bhoi, 2006. 'Monetary Conditions Index for India', *Reserve Bank of India Occasional papers*, Vol.27(3), pp.57-86.
- Keynes, J.M. 1937. 'The Ex-Ante Theory of the Rate of Interest'. *Economic Journal*, pp.663-679.
- King, M. 1997. 'Monetary Policy and the Exchange Rate, 'Bank of England Quarterly Bulletin, 37(2), pp.225-227.
- Kohli, Renu. 2000. 'Aspects of Exchange Rate Behaviour and Management in India 1993-98'. *Economic and Political Weekly*, pp.365-372.
- Manohar Rao, M.J. 1999. 'Financial Programming and Stabilization Policy Options for Macro-Economic Adjustment'. *Economic and Political Weekly*, 34(3-4), pp.99-114.
- Manohar Rao, M.J. 2000. 'On predicting exchange Rates'. *Economic and Political Weekly*, January 29, pp.377-386.
- Manohar Rao, M.J. 2000. 'Fiscal Deficits, Interest Rates and Inflation-Assessment of Monetization strategy'. *Economic and Political Weekly*, July 22, pp.2637-2645.
- Manohar Rao, M.J. 2003. 'Science of Monetary Policy –Some perspectives on the Indian Economy'. *Economic and Political Weekly*, February 22, pp.809-820.
- Mitra, Arghuya Kusum 2001. 'Interest Rate Defense of Exchange Rate Tale of the Indian Rupee'. *Economic and Political Weekly*, pp. 4450-4451.
- Nachane, D.M. and Lakshmi, R. 2002. 'Changing Monetary Policy Lags and Liberalisation in India', *The Indian Economic Journal*, Vol. 50, No.1, July –Sep.
- Nachane, D.M., Partha Ray and Saibal Ghosh, 2002. 'Does Monetary Policy Have Differential State-level Effects? – An Empirical Evaluation'. *Economic and Political Weekly*, 37(47), November 23, pp.4723-4728.
- Nag, Ranjanendra Narayan and Mukhopadhyay, Mallinath 1998. 'Macro-Economic Effects of Stabilization under Financial Repression'. *Indian Economic Review*, 33(1), pp.1-17.

- Neumann, J. Von. 1945. 'A Model of General Equilibrium', *Review of Economic Studies*, XIII, pp.1-9.
- Nobay, A. Robert and Peel, David A. 2003. 'Optional Discretionary Monetary Policy in a model of Asymmetric Central Bank Preferences'. *The Economic Journal*, pp.657-665.
- Nuran Gokbudak, 1995. 'Money Multiplier and Monetary Control, The Central Bank of the Republic of Turkey', *Quarterly Bulletin*, Ankara, October. pp.107-133.
- Okun, Arthur. 1972. 'Fiscal Monetary Activism: Some Analytical Issues', *Brooking Papers on Economic Activity*. Washington, Vol.1, pp.23-64.
- Partha Ray, Itimanshu Joshi and Mridul Sagar, 1998. 'New Monetary Transmission channels-Role of Interest Rates and Exchange Rate in conduct of Indian Monetary Policy'. *Economic and Political Weekly*, 33(44), October 31, pp.2787-2784.
- Patel, I.G. 1994. 'Some Reflections on Financial Liberalization'. *Journal of Indian Institute of Bankers*, 65(1), pp.3-8.
- Patel, Urjit R. 1999. 'Outlook for the Indian Financial Sector'. *Economic and Political Weekly*, pp.875-876.
- Patra Michal Debra and Roy Sunando 2000. 'Financial Stability: A Survey of the Indian Experience' - *RBI Occasional Papers*, 21(1).
- Pattnaik Sitikantha and Mitra Arghuya Kusum 2001. 'Interest Rate Defense of Exchange Rate Tale of the Indian Rupee'. *Economic and Political Weekly*, pp.4418-4427.
- Pattnaik, R.K., Nuneesh Kapur and Dhal, S.C. 2003. 'Exchange Rate Policy and Management-The Indian Experience'. *Economic and Political Weekly*, May 31, pp.2139-2153.
- Prasad Kamala 2001. Monetary Policy and Growth. *Mainstream* 39(48), pp.6-9.
- Prasanth, V.P and Ansari Rafiq L. 1999. 'Monetary Policy: Promise of New Perspective Belied (for EPW Research Foundation)'. *Economic and Political Weekly*, Nov.20, 3254-3260.
- Prasanth, V.P, Desai Piyusha and Dey Anindita 2002. 'Credit Policy: Beyond Expansionary Signals'. *Economic and Political Weekly*, pp.992-998.

- Prasanth, V.P. and Shetty, S.A. 2002. 'Stable Interest Rates Profile', *Economic and Political Weekly*, pp.182-188.
- Prasanth, V.P. 2000. 'Exchange Rate Management- Falling between Two stools', *Economic and Political Weekly*, pp.2891-2897.
- Prasanth, V.P. and Desai, Piyusha 2003. 'Trading Exchange Rate Movements'. *Economic and Political Weekly*, pp.4414-4420.
- Prasanth, V.P. and Paramita, Debnath 1995. 'RBI to Governments Rescue', *Economic and Political Weekly*, pp.2287-2293.
- Prasanth, V.P. and Shetty, S.A., 2002. 'Banking: Missing Dynamism'. *Economic and Political Weekly*, February 16, pp.598-604.
- Raghubendra Jha, 2002. 'Downward Rigidity of Indian Interest Rates'. *Economic and Political Weekly*, February 2, pp.469-474.
- Rajwade, A.V., 1999. 'Perspectives of Monetary Policy', *Economic and Political Weekly*, 34(48), November 27, pp.3339-3340.
- Rangarajan, C. 1997. 'Monetary Policy and Price Stability'. *Southern Economist*, 36(8), August 15, pp.34-36.
- Rangarajan, C. 1997. 'Role of Monetary Policy'. *Economic and Political Weekly*, 32(52), December 27, pp.3325-3328.
- Rangarajan, C. 2001. 'Some critical Issues in Monetary Policy'. *Economic and Political Weekly*, June 16, pp.2139-2146.
- Rao, C.H. Prabhakara 2002. 'Money Market Developments: A Review, Special Issue', ICFAI Press Research Centre, *Business Standard*, Dec.24.
- Ray, Partha and others 1998. 'New Monetary Transmission Channels Role of Interest Rates and Exchange Rate in Conduct of Indian Monetary Policy'. *Economic and Political Weekly*, 33(44), pp.2787-2794.
- RBI 1993. 'A Step towards Pragmatism- Monthly Commentary on Indian Economic Conditions'. *RBI Bulletin*, 35(3), pp.13-15.
- Reddy, Y.V. 1999. 'Monetary Policy in India: Objectives, Instruments, Operating Procedures and Dilemmas'. *RBI Bulletin*, 53(7), pp.945-950.

- Reddy, Y.V. 2002. 'Public sector Banks and the governance challenge: Indian Experience'. *RBI Bulletin*, May. pp 337-356.
- Reddy, Y.V. 2002. 'Monetary and Financial sector Reforms in India: A practitioner's Perspective'. *RBI Bulletin*.
- Reserve Bank of India, *various publications*, (1991-2010), *Mumbai*
- Reserve Bank of India: *RBI Annual Reports* (Various Years) 1991-2010.
- Reserve Bank of India: *RBI Occasional Paper* (Special Edition, 2009), *Mumbai*.
- Reserve Bank of India: *RBI Occasional Papers* (Various Years) 1991-2010.
- Reserve Bank of India: *Report on Currency and Finance*, Various Years, (1991-2010), *Mumbai*.
- Robert Nobay, A. and David A Peel, 2003. 'Optional Discretionary Monetary Policy in a model of Asymmetric Central Bank Preferences'. *The Economic Journal*, July, pp.657-665.
- Romar Correa, 2001. 'Macro economic Policy and asset Markets'. *Economic and Political Weekly*, January 27, pp.347-349.
- Schinasi, Garry J. 1995. Asset Prices, Monetary Policy, and the Business Cycle. *Southern Economist*, 34(4), pp.18-21.
- Scitovsky, T. 1940. A Study of Interest and Capital, *Economics*, New Series, Vol. 7(27) (Aug., 1940), pp.293-317.
- Shankar Acharya, 2002. 'Macro Economic Management in the Nineties'. *Economic and Political Weekly*, April 20, p.1515-1538.
- Shetty, S.L. 1997. 'Financial Sector Reforms in India: An Evaluation'. *Prajnan* (Special Number) 25 (3-4), pp.253-287.
- Singh, Anoop. 2010. 'Asia Leading the Way, Finance and Development', *A Quarterly Publication of the International Monetary Fund*, June, 2010, Vol.47(2), pp.4-7.
- Singh, Shetty and Venkatachalam 1992. 'Monetary Policy in India: Issues and Evidence'. *Supplement to RBI occasional papers*.
- Sinha, S.L.N. 1995. 'Some Thoughts on Monetary and Credit Policy'. *Southern Economist*, 34(1), May 1, pp.1-3.



- Smets, F. 1995. 'Central Bank Macro-econometric Models and the Monetary Policy Transmission Mechanism', in *BIS*, Financial Structure and the Monetary Policy Transmission Mechanism, March, pp.225-266.
- Smithies, Arthur. 1948. 'Keynesian Economics: The propensity to consume and the multiplier', *American Economic Review* Supplement, May, Vol.38, pp.299-305.
- Southern Economist (Editorial) 1996. Economic Growth Sans Reforms Impact. *Southern Economist* 34(21), pp.2-4.
- Swamy, Dalip S. 1995. Capital Inflow Fiscal Deficit and Monetary Policy. *Radical Humanist*, 59(2), pp.10-14.
- Tarapore, S.S. 1993. 'Inflation, Monetary Policy, and Financial Sector Reform'. *Southern Economist* 32(1), May, pp.41-42.
- Taylor, J.B. 1993. 'Discretion versus Policy Rules in Practice', *Carnegie-Rochester Conference Series on Public Policy*, 39, pp.159-214.
- Taylor, J.B. 1996. 'Policy Rules as a Means to a more Effective Monetary Policy', Institute for Monetary and Economic Studies, Bank of Japan, *Discussion Paper*, 96-E-12.
- Tobin, James. 1956. 'The Interest – Elasticity of Transactions Demand for Cash', *Review of Economics and Statistics*, XXXVIII, pp.241-247.
- Tobin, J. 1958. 'Liquidity Preference as Behaviour Towards Risk'. *Review of Economic Studies* Vol 67, pp.65-86.
- Tobin, James. 1972. 'Inflation and Unemployment', *American Economic Review*, March, pp.1-18.
- Vasudevan, A. 2002. 'Evolving Monetary Policy in India: Some Perspective'. *Economic and Political Weekly*, 37(11), March 16, pp.1055-1061.
- Warburton, Clark, 1948. 'Monetary Velocity and Monetary Policy', *Review of Economics and Statistics*, XXX, Nov. pp.304-314.
- William, R., 2002. 'Changing views on how best to conduct monetary policy: The last fifty years'. *RBI Bulletin*, January, pp.9-19. [www.rbi.org.in](http://www.rbi.org.in)
- Williams, John. H. 1941. The Implications of Fiscal policy for Monetary Policy and Banking System, *American Economic Review*. Dec. pp.2-4.

## **Lectures, Reports and Websites**

‘Efficacious Cheaper Money policy’, The Hindu, Monday, Nov 4, 2002.

‘Investment in India-Monetary Policy - Introduction, Monetary Growth, Credit Policy’.

[http://finance.indiamart.com/investment\\_in\\_india/monetary\\_policy.html](http://finance.indiamart.com/investment_in_india/monetary_policy.html)

Deepak Mohanty 2010. ‘Implementation of Monetary Policy in India’. Speech Delivered at the Banker’s Club, Bhubaneswar on 15<sup>th</sup> March, [www.rbi.org.in](http://www.rbi.org.in)

Friedman, M. 1970. ‘The Counter Revolution in Monetary Theory’. First Wincott Memorial Lecture, the Institute of Economic Affairs. pp.22-24.

Giuseppe Fontana and Alfonso Palacio-Vera, 2005. ‘Are Long-run Price Stability and Short-run Output Stabilization All that Monetary Policy Can Aim For?’, In the Working Paper No. 430 November, [www.levyinstitute.org](http://www.levyinstitute.org)

*Government of India: Economic Survey, 2009-10, New Delhi.*

Gupta Indranil Sen, Bhattacharya Indranil, Sahoo Sathyananda, and Sanyal Sidhartha. ‘Anatomy of Liquidity Management’ (From Internet), [www.rbi.org.in](http://www.rbi.org.in)

Hume, David. 1750. ‘Of money’, Essays, Oxford University Press, Essay –III, [www.econlib.org](http://www.econlib.org)

‘India and the Global Economic Crisis’, (PDF File), [www.iamrindia.gov.in](http://www.iamrindia.gov.in)

‘India Economic Reform’, Business Maps of India, [business.mapsofindia.com](http://business.mapsofindia.com)

Jalan, Bimal. ‘Reserve Bank of India: Monetary and Credit Policy for the year 2002-03’. [www.rbi.org.in](http://www.rbi.org.in)

Kannan, R. ‘Financial Sector Reforms: A Review of First phase of Reforms’. <http://kannanpersonal.com>

Kannan, R. ‘Financial Sector Reforms : An update’. <http://kannanpersonal.com>

Kannan, R. ‘Financial Sector Reforms: Second Phase of Reforms – Issues and Imperatives’. <http://kannanpersonal.com>

Kannan, R. ‘Indian Banking in the New Millenium’. <http://kannanpersonal.com>

Kannan, R. ‘Indian Banking Today and Tomorrow’. <http://kannanpersonal.com>

Kannan, R. ‘On Narasimham Committee – First & Second Reports’.

<http://kannanpersonal.com>

- Kannan, R. 'The Dimensions of Rolled over Problems confronting Banks in India'.  
<http://kannanpersonal.com>
- Kannan, R. 'The Financial and Banking Sector Reforms'. <http://kannanpersonal.com>
- Mehrotra Santosh, 2010. 'India and the Global Economic Crisis', (*This paper was presented at UK Development Studies Association Conference, U.K.*),  
[www.iamrindia.gov.in](http://www.iamrindia.gov.in)
- Michael Debabrata Patra and Sunando Roy, 2000. 'Financial Stability: A Survey of the Indian Experience', *RBI Occasional Papers, Summer*, Vol. 21(1), [www.rbi.org.in](http://www.rbi.org.in)
- Nachane, D.M. and Lakshmi, R. 2002. 'Changing Monetary Policy lags and Liberalization in India'. *The Indian Economic Journal*, Vol.50(1), July-Sep. 2002, ([www.indianeconomics.org](http://www.indianeconomics.org))
- Narasimham Committee 1998. Report of the Committee on Banking Sector Reforms, 1998, [www.rbi.org.in](http://www.rbi.org.in)
- Philip Arestis and Malcolm Sawyer, 2003. 'On the Effectiveness of Monetary Policy and Fiscal Policy'. Working Paper No. 369, Levy Economics Institute of Bard College, New York, January. [www.levyinstitute.org](http://www.levyinstitute.org)
- Prabhakara Rao, C.H. 2002. 'Money Market Developments: A Review'. ICFAI Press Research Centre, *Business standard*, December 24. [www.business-standard.com](http://www.business-standard.com)
- Radcliffe. 1959. 'Report of the Committee on the Working of the Monetary System'. [www.rbi.org.in](http://www.rbi.org.in)
- Rangarajan, C. 1996. 'Some Issues in Monetary Policy.', ASCI Foundation Lecture, Dec.6, p.1-3 of 3.
- Reddy, Y.V. 2002. 'Parameters of monetary Policy in India', Speech by the Deputy Governor, RBI on 15- January.
- Reddy, Y.V. 1988. 'Money and Finance through the Looking Glass', (Review Article of *Indian Economy : Essays on Money and Finance*, by C. Rangarajan, UBS Publishers' Distribution, New Delhi), [www.rbi.org.in](http://www.rbi.org.in)
- Reddy, Y.V. 1999. 'Monetary Policy in India', A speech delivered on Fourth Securities Industry Summit, in Mumbai, on 26 May, 53(7), p.945-950.

- Reddy, Y.V. 2002. 'Indian Banking: Paradigm shift in Public Policy'. *RBI Bulletin*, February. [www.rbi.org.in](http://www.rbi.org.in)
- Reddy, Y.V. 2002. 'Monetary and Financial Sector Reforms in India; A practitioners' Perspective'. *RBI Bulletin*, May. [www.rbi.org.in](http://www.rbi.org.in)
- Senior, N.W. 1829. 'On the Quantity and Value of Money', Three lectures on the value of money, Lecture.1, pp.5-31.
- The Indian Budget, 'Money and Prices, The Indian Economy Overview', *The Indian Budget 1999-2000*.
- The Levy Economics Institute of Bard College, 2003. 'The Nature and Role of Monetary Policy When Money is Endogenous'. Working Paper, New York, March. No. 358, [www.levyinstitute.org](http://www.levyinstitute.org)
- Vaghul Committee: Report on Banking Sector Reforms 1987 on 'Working Group on the Money Market'. [www.rbi.org.in](http://www.rbi.org.in)
- Vepa Kamesam, 2002. 'Indian Economy – Financial Sector Reforms and Role of RBI'. *RBI Bulletin*, May. [www.rbi.org.in](http://www.rbi.org.in)
- White, William. R. 'Changing views on How Best to Conduct Monetary Policy : The Last fifty years'. Lecture by Economic Adviser, *Bank for International settlement*, on Dec. 14, 2001.