Economic growth is primarily a real phenomenon and is naturally dependent on real factors. It can be defined as the persistent increase in the real GDP of the country. Money does not purchase growth but can facilitate economic growth. A proper monetary policy is not a sufficient condition but a necessary one for economic growth. There is a general consensus of opinion among economists, that a sound monetary policy is an important pre-requisite of a comprehensive programme of economic development. In spite of limitations, the monetary policy has a crucial role to play in the strategy of planned development of underdeveloped economies. The *raison d'être* of a planned economy is the fullest mobilisation of the available resources and their allocation so as to secure optimum result. Monetary policy is a powerful instrument for securing the desired result.

In a developing economy like India, the monetary policy has to be one of *controlled expansion* to facilitate economic growth and to restrain inflationary pressures. This policy in the long-run aims at a secular expansion of credit but in the short-run seeks to control its rate of expansion. In a development programme of the magnitude that we have cannot but release inflationary pressures and, therefore, the monetary policy has to be so reorganised as to prevent these pressures from jeopardising economic growth of the economy. There are two aspects of such a policy: (a) positive one – promotional role of the central banking
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in increasing savings and credits, and (b) negative one – regulatory role of restricting credit expansion to levels indicated by current supplies.

The changes in the monetary policy stimulate the economy only after some time lag. There are basically three types of lag. First is the "recognition lag", which refers to the lag between the time at which a monetary policy action becomes necessary, and the time at which the monetary authorities become aware that action is necessary. This lag is related to the problems of getting up-to-date information on the state of the economy and the forecasting. The second type is "action lag" which refers to the time between recognition of the need for action and the actual carrying out of that action. The sum of the recognition lag and the action lag is called the "inside lag". The third type is called "outside lag" which refers to the time between the taking of a monetary policy action and its effects on the real variables such as output and employment etc. The causes of outside lag are difficult to analyse because they involved the complex inter relationship in the way the economy works. However, monetary policy as an instrument of economic policy has certain advantages “inside lag” which refers to the lag between the time actions is needed and the time the action is actually taken is shorter in the case of monetary policy than in case of fiscal policy. Monetary policy changes, unlike the changes in fiscal policy can and do occur at any time during a year.
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The effectiveness of such policy depends on the will and imagination with which it is framed and followed in practice, especially the extent to which the monetary authorities are able to control or curb inflationary rise in prices.

A lot of work has been done on the monetary policy and growth and many more would be in the process. In fact review of these literatures helped me a lot in making the arguments and in setting up the objectives of the research work.

Following objectives of the present study have been set:

(a) To examine the relationship between money supply, growth and prices.
(b) To know the trade-off between inflation and growth
(c) To examine the efficacy of different instruments of monetary policy after the financial sector reforms.
(d) To analyse whether a single target, single instrument rule is preferable over the multiple target approach.
(e) To know whether the monetary targeting is still feasible in the changed environment or not.

For our study we have formulated the null hypothesis, which has to be accepted or rejected as per the findings:

1) $H_0$: Financial liberalisation and globalisation has made the relationship between money supply, output (growth) and prices unstable and unpredictable.
2) $H_0$: There is a trade-off between growth and inflation at least in the short run.

3) $H_0$: The central bank should pursue a single target, single instrument rule.

4) $H_0$: Multiple indicator approach (MIA) – e.g. interest rates and exchange rate, has replaced the monetary targeting (MT) as an anchor of monetary policy.

Our research work is an empirical study. In order to know the efficacy of monetary policy on growth and to test the developed hypothesis, the method of correlation coefficient has been used which shows the interdependence of different variables like inflation, GDP growth and money supply. The formula can be expressed as:

$$ r^* = \frac{\sum (Y - \bar{Y}) (I - \bar{I})}{\sqrt{\sum (Y - \bar{Y})^2} \sum (I - \bar{I})^2} $$

where,

$r^*$ = Correlation between Inflation and growth

$Y$ = Real GDP

$I$ = Inflation

$\bar{Y}$ = Average Real GDP (Mean of Real GDP)

$\bar{I}$ = Average Inflation

$$ r^{**} = \frac{\sum (I - \bar{I}) (M_s - \bar{M}_s)}{\sqrt{\sum (I - \bar{I})^2} \sum (M_s - \bar{M}_s)^2} $$
where,

\[ r'' = \text{Correlation between Inflation and money supply} \]

\[ I = \text{Inflation} \]

\[ M_s = \text{Money Supply} \]

\[ \bar{I} = \text{Average Inflation} \]

\[ \bar{M}_s = \text{Average Money Supply} \]

\[
\begin{align*}
    r''' &= \frac{\sum (Y - \bar{Y})(M_s - \bar{M}_s)}{\sqrt{\sum (Y - \bar{Y})^2 \sum (M_s - \bar{M}_s)^2}}
\end{align*}
\]

where,

\[ r''' = \text{Correlation between Real GDP and money supply} \]

\[ Y = \text{Real GDP} \]

\[ M_s = \text{Money Supply} \]

\[ \bar{Y} = \text{Average Real GDP (Mean of Real GDP)} \]

\[ \bar{M}_s = \text{Average Money Supply} \]

Moreover, the moving averages, and graphs have also been used to exposit the relationship among inflation, output and money supply in the economy. We have selected the period from 1990s onward for our study because the period of the 1990s is regarded as the landmark in
the history of Indian economy. The basic data are secondary in nature, taken mainly from the various issues of the Reserve Bank of India publications, like the RBI Bulletin, Annual Reports, Reports on currency and Finance, Hand Book of Statistics for Indian economy. Also from CMIE reports, report on trend and progress in banking in India, BIS papers, National Accounts statistics of CSO, EPW and economic surveys (various issues).

The design and conduct of monetary policy has an important bearing on economic activity in aggregate. Since the economic activities are entangled with the fluctuations in most of developing economies especially that of India; the very and complete comprehension of their pros and cons assumes importance for both the policy makers and market participants. Thus the main objective of macroeconomic policy is based on the fact of avoiding the protracted recessions where the resources are left under utilised and the periods of unsustainable growth that can put the price stability in to peril. There is widespread agreement that monetary policy is being actively considered as an instrument of stabilisation, working through aggregate demand to smoothen oscillations of economic activity around the desired path.

There are mainly three factors that allowed the economy to register higher growth in 1980s as compared to 1960s & 1970's.

1. The increased government expenditure provided fiscal stimulus to the economy.
2. Liberalisation of imports, especially of capital goods and components of manufacturing induced production of luxury articles.

3. There was an increased reliance on external commercial borrowing by the state in order to finance increased fiscal and current account deficits.

Advocates of economic reform have repeatedly claimed that the decade of 1990s has witnessed India’s transition to a new higher growth trajectory. During the 8th plan growth performance of the economy was 6.77 per annum, which is quite encouraging.

However, the average annual rate of increase in national income during 9th plan (1997-2002) is estimated at 5.5% which is significantly lower than the growth rate achieved during 8th plan. The actual growth rate during the 9th plan is also lower than the plan target of 6.5% per annum.

The 10th plan witnessed favourable conditions regarding the growth performance of the economy and during the first 3 years of the tenth plan, overall rate of increase in national income has been 6-9% per annum led by a sharp accelerated in growth of manufacturing output. India posted real GDP growth of 8.1% in the second quarter of 2005. Manufacturing output which accounts for 20% of India’s GDP surged by 11.3% during the second quarter in past supported by unexpectedly robust growth in exports.
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The performance of Indian economy in 2004-05 has generated considerable optimism about medium term macro-economic prospects. It is heartening to note that in spite of the sharp slow down in agriculture the overall growth of GDP in 2004-05 was higher than the average growth attained over the preceding 12 year period began in 1992-93.

For third successive year the Indian economy has registered a highly impressive growth during fiscal year 2005-06. After recording some slow down in the third quarter (October-December) of 2005-06, real GDP registered a sharp increase in the fourth quarter (January-March) of 2005-06 benefiting from a pick up in almost all segments of agriculture, industry and services. According to the revised estimates released by CSO in May 2006, real GDP accelerated from 7.5% in 2004-05 to 8.4% during 2005-06. The Indian economy has, thus recorded an average growth of over 8% in latest three years (2003-04-05-06).

The Indian economy continued to exhibit strong growth during the first quarter of 2006-07. According to CSO, real gross domestic product (GDP) registered an increase of 8.9% in the first quarter (April-June) of 2006-07 as compared to 8.5% in corresponding period of 2005-06.

The stylised facts indicate that the structural acceleration of growth that is underway is based on solid foundations including a weatherproofing of the economy. These factors are equipping India to
remain among the fastest growing economies of the world in the medium term.

We expect India to continue to post growth in the range of 6 to 7% over the coming years. The RBI will be tested in the coming quarters where it would like to keep interest rates low to promote investment and overall economic growth.

The RBI will maintain a bias towards monetary tightening in 2007 to bring down the inflation. Monetary policy will move to more neutral orientation in 2008-11, provided annual wholesale price inflation does not exceed the RBI's target range of 4.5-5% for a sustained period of time.

Since the introduction of the liberalisation programme in 1991, economic growth accelerated. The planning commission and the CSO have been working overtime to assess the challenges that India must overcome to sustain rapid economic growth and reduce poverty over the long term.

A number of policies have contributed to the relatively slow growth in India in spite of being too much efforts enforced on them.

Growing recognition of the powerful effects of monetary policy on the real economy has employed that monetary authorities have been forced to take positions on the short run trade-off between growth and inflation and the choice severely conditioned by the losses of macro economic welfare that can arise as a result of an in appropriate position
along the growth inflation curve. This choice has become even more severely constrained given the conviction that this curve has non-linear segments showing that growth and inflation are positively related along a certain portion of the curve and negatively related elsewhere.

In order to analyse the above table the period from 1990 to 2007 has been taken into account. It is apparent from the table that there is a moderate and fluctuating inverse relationship between the GDP and inflation (WPI). It also shows during the period 2000-2007 the minimum inflation is 3.4% (2002-03) and maximum inflation is 7.2% (2000-01). It means that the check and balance instrument introduced of RBI is capable enough to keep the inflation within the threshold limit advocated by various economists of Indian sub continents. Further there is positive and direct relationship between money supply and inflation. The relationship between money supply and inflation is coherent with the theoretical aspect advocated by classical school of thought and modern school of thought.

For imperial evidence correlation coefficient has been calculated for the same set of data. The correlation coefficient between real GDP and inflation is worked out to (-0.374). The relationship is said to be significant at (r=0.139). But our calculated value is (-0.374). The calculated value is much more less than the significant value. The table value itself reveals that there is a weak and meagre relationship between inflation and real GDP in general. In Indian context the
calculated value is \(-0.374\) which itself less than the internationally recognised value of correlation coefficient. It carries a vital piece of information that there is a very weak relationship between inflation and real GDP. It means that a better performance witnessed during the given period (1990-07) is attributed to the structural and institutional readjustments adopted by India. Further a proper trade-off between inflation and growth is requiring to put the economy on the growing path and to feel the essence of the zenith.

The correlation coefficient between inflation and money has been also worked out and it is 0.418. It shows that there is moderate positive relationship between inflation and money supply, which is coherent with the theoretical aspects.

The correlation coefficient between real GDP and money supply has been worked out to 0.071. Thus it is apparent from the finding that there is a weak and meagre relationship between real GDP and money supply. This is because the relationship is significant at \((r=0.787)-(at 5\% level of significance)\). This finding is also coherent with economic aspect of our hand. The results further a show that in Indian context the correlation coefficient between real GDP and money supply is almost insignificant \((0.071)\). It implies that monetary policy has not a strong bearing on the Indian economy.
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A plot of 3 year moving averages of variations in money, output and prices for the period from (1990-91 to 2006-2007) brings out the whole picture vividly.

Thus we conclude that with financial liberalization and globalisation, the relationship between money output and prices has turned increasingly volatile and unpredictable. Long and variable lags in monetary policy and changeable transmission channels have posed a considerable challenge for the conduct of monetary policy. The growing complexities of monetary management during the 1990s required that the formulation of monetary policy be based on the information gathered from a large number of macro-economic indicators rather than being predicted on a single monetary aggregate. Thus, in view of the changing monetary dynamics, the Reserve Bank of India formally switched from monetary targeting and broad-based its list of policy indicators in April 1998. The Monetary and Credit Policy Statement of April 1998 announced that the Reserve Bank would: “Adopt a multiple indicator approach wherein interest rates or rates of return in different markets (money, capital and government securities markets) along with such data as on currency, credit extended by banks and financial institutions, fiscal position, trade, capital flows, inflation rate, exchange rate, refinancing and transactions in foreign exchange available on high frequency basis are juxtaposed with output data for drawing policy perspectives.”
Although the exclusive use of monetary aggregates has been de-emphasized, it remains an important indicator of the monetary policy stance, with the monetary and credit policy statements announcing monetary projections for the year. It continues to be relevant for India simply because of two basic reasons. First, since the money demand function has remained reasonable stable, it remains helpful in predicting price movements with reasonable accuracy at least over a period of time. Secondly the money stock target relatively well understood by the public at large, with the money supply target, the stance of monetary policy is unambiguously defined and gives a clear signal to market participants.

Therefore, in the context of Indian economy, the quantity of money continues to play an important role in determining prices. However, the monetary policy authority must watch the behaviour of interest rates in various markets and must intervene and smooth the volatility. At the same time, it is necessary to decompose the sources of inflation in view of the repeated occurrence of supply-side shocks in the economy since the late 1990s.