CHAPTER - I

INTRODUCTION

1.1 Main features of Indian Economy - Inflation :

Indian economy, over the last few decades has been witnessing a growing inflationary pressure - withsome occasional relieves. The growing inflationary pressure is almost a common phenomenon for most developing countries like Mexico, Egypt, Peru, Brazil, Argentina, Israel and Bangladesh etc. India is no exception to this. In case of inflation, the prices of goods and services, rise. Income of a vast majority of people can not keep pace with the rise in the cost of living. The relative income position of different classes of people basically changes for the worse on this account. A very small section of people becomes undeservedly[1] richer and rest grows poorer and poorer. Inflation is, by and large, an inequitable process.

It is, therefore, pertinent on the part of economists to identify the main factors behind such inflationary trend. Is the inflationary pressure due to the growing rate of money supply in Indian economy ? If not, what is it ?

1.2 Money Supply - Money supply has been steadily increasing over the last few decades. Needs for financing different projects for economic development have called for increasing rate of money supply in India. Economic Plans have emphasised on rapid industrialization alongwith steady growth of agricultural sector and economic justice for the downtrodden. All these have claimed for voluminous government spending. Nationalization of bank enabled the government to have an easy access into bank resources for the developmental projects. This indicates an increasing dose of money supply into the economy.

A part from this , budgetary deficits[2] have become a regular feature and practice for the last few years.

Deficit financing was quite modest in the initial plans. The total expenditure during the First Five Year Plan was of the order of Rs. 1960 crores of which a gap of Rs. 333 crores was met through deficit financing. The second plan envisaged deficit financing of the order of Rs. 1200 crores. However, following a substantial step up in tax efforts during the period, the actual deficit was of the .

1. J.M.Keynes, Economic Consequences of Peace, p.220.
2. Agarawal, A.N. Indian Economy, Wishwa Prakashan, 21st edition, 1995, p.641.

order of Rs. 954 crores. During the Third Plan, the actual deficit came to Rs.1133 crores. Deficit financing during the Fourth Plan was of the order of Rs. 2060 crores and in the Fifth Plan it was Rs. 3560 crores.

Table-1.1

Deficit Financing in India (in different plan periods)

Plan period	Deficit financing (Rs. crores)
First Plan(1951-56)	333 (17.0)
Second Plan(1956-61)	954 (20.4)
Third Plan ((1961-66)	1133(13.2)
Fourth Plan(1969-74)	2060(12.8)
Fifth Plan (1974-79)	3560(8.6)
Sixth Plan (1980-85)	15684(14.1)
Seventh Plan(1985-90)	28256(15.3)

Figures in the parenthesis represents the percentage of total plan expenditure covered through deficit financing.

It may be noted that percentage of plan expenditure covered through deficit financing had been declining over years until the Fifth Plan. A noticeable increase in volume in deficit Financing along with a rising trend is obtained since the Sixth Plan. Deficit Financing in the Sixth Five Year Plan Period stood to more than 340%, while in Seventh plan it registered a rise by more than 693% of the Fifth Five Year Plan deficit Financing . An attempt is undertaken to curb the volume of deficit financing in the Eight Five Year Plan period . The volume of deficit Financing in the Eight Plan none the less, stood at 600% of that in the Fifth Plan Period.

Money Supply, as a result thereof, continued to increase. This led to a common belief that the continuous rise in money supply might have contributed to price hike[3] in Indian economy.

1.3 Money Supply And Price Level :

Figure 1.1 and 1.2 represent the time plots of Money Supply (M_2) and price level over the period 1950-1992. Both the time plots indicate a steady rise in money supply and price level with some occassional ups and downs over the period concerned.

The Figure 1.3 present both the time plots together. It appears that price level varies in close association with money supply. The extent of such association is not clear. Yet the common idea that spurt in money supply is behind the price rise in India gets a support from such visual verification of the time plots together.

1.4 Growth of Output :

Another important feature of the Indian economy over the last few decades is the phenomenal increase in output level. Since independence India has been striving for achieving self sufficiency in agriculture and for industrial development. India, as a result, thereof, has emerged as an outstanding industrial countries with spectacular achievement in agriculture. National income has been growing over the last few decades, almost steadily. Figure 1.4 presents the time plot of output level over the period 1951-91. It shows that output level has registered almost uninhibited growth with some occassional ups and downs over the period concerned.

Output growth in the Indian economy over this period proceeded along with growing monetization of the economy. With the growing monetization, the barter economy progressively gave into the exchange economy. During the process of transition, money assumed growing importance in economic activities. Again, the cheap money policy in the earlier phases of economic development led to a fall

3. The Committee to Review the working of the Monetary System chaired by Prof. S.Chakraborty (April 1985) . According to the Committee " the large deficit incurred by the govt. and financed by the RBI have led to a significant rise in money supply relative to output in successive years and have consequently fuelled inflationary pressure during seventies.

Fig. 1.1 : Time Plot of Money Supply, M_{2t}

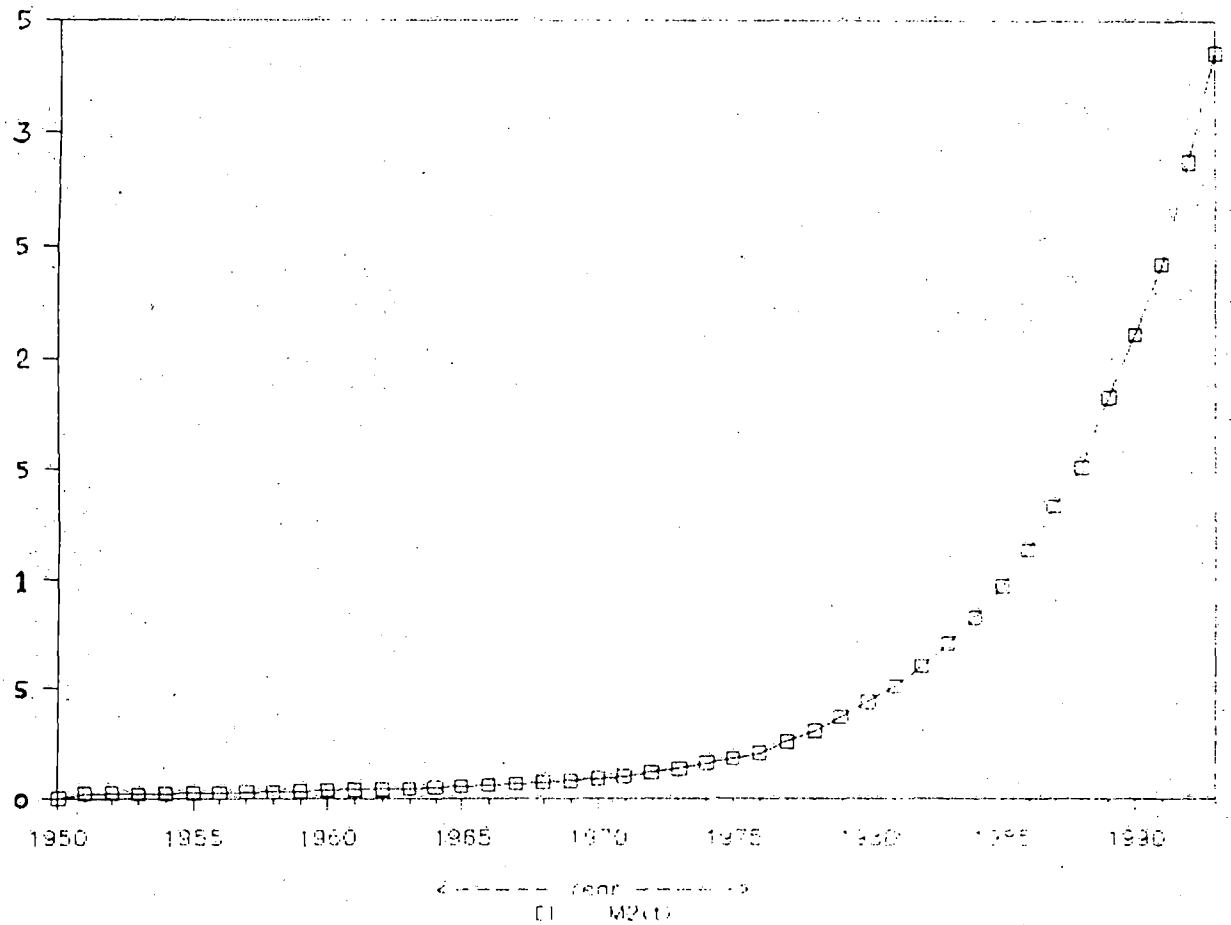


Fig. 1.2 : Time Plot of Price Level, P_t

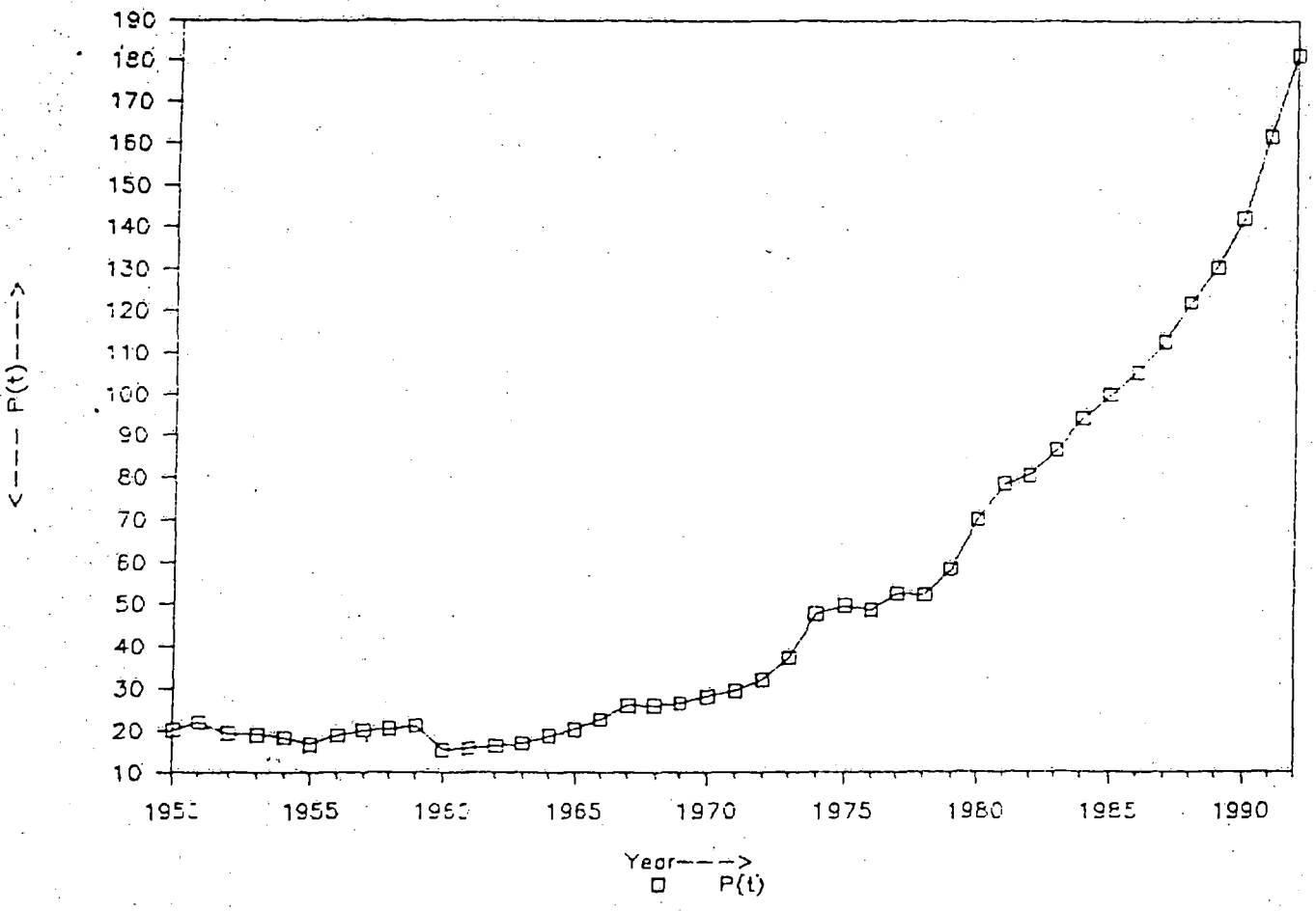


Fig. 1.3 : Time Plot of Price Level (P_t) and Money Supply (M_{2t})

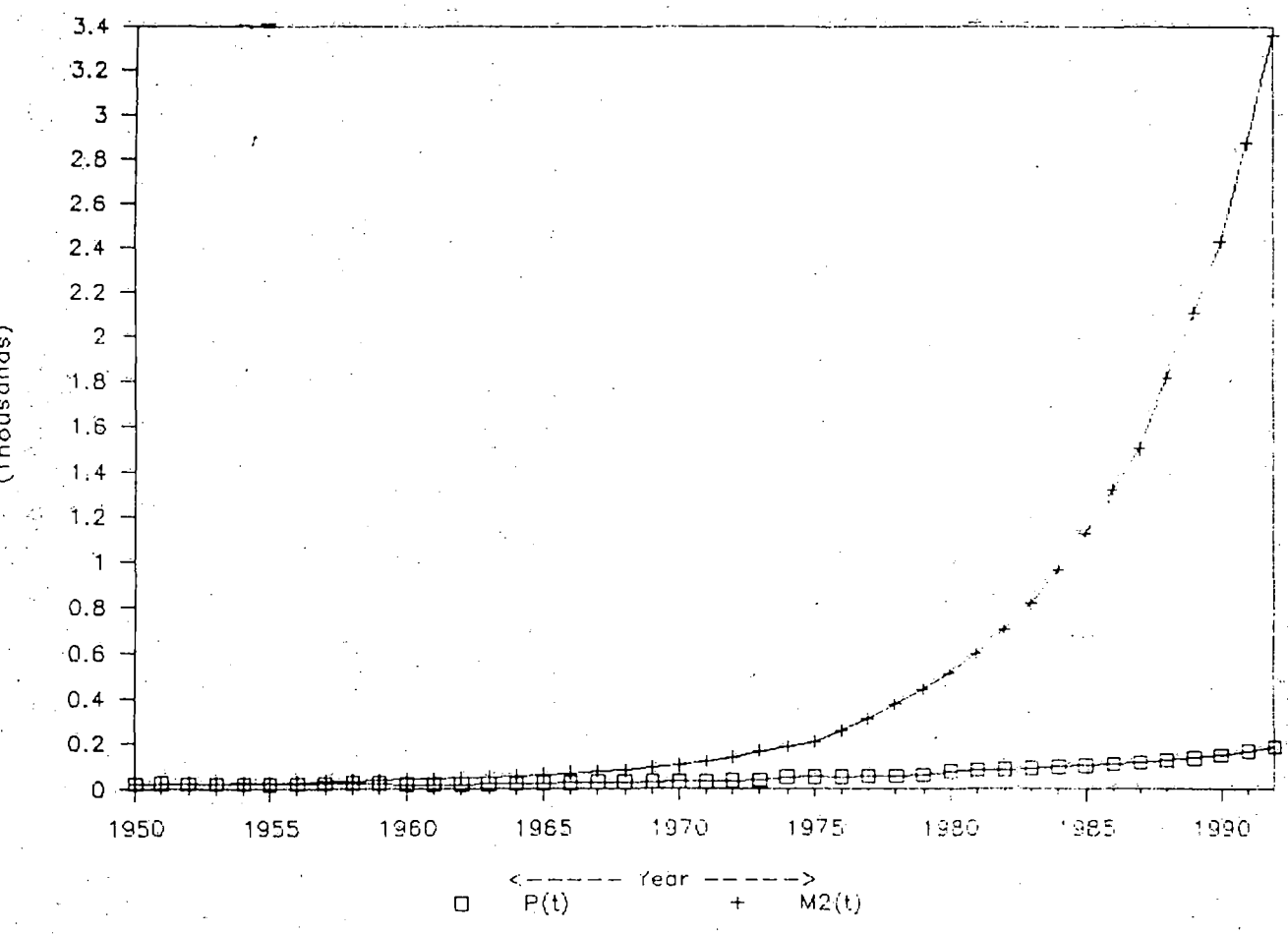
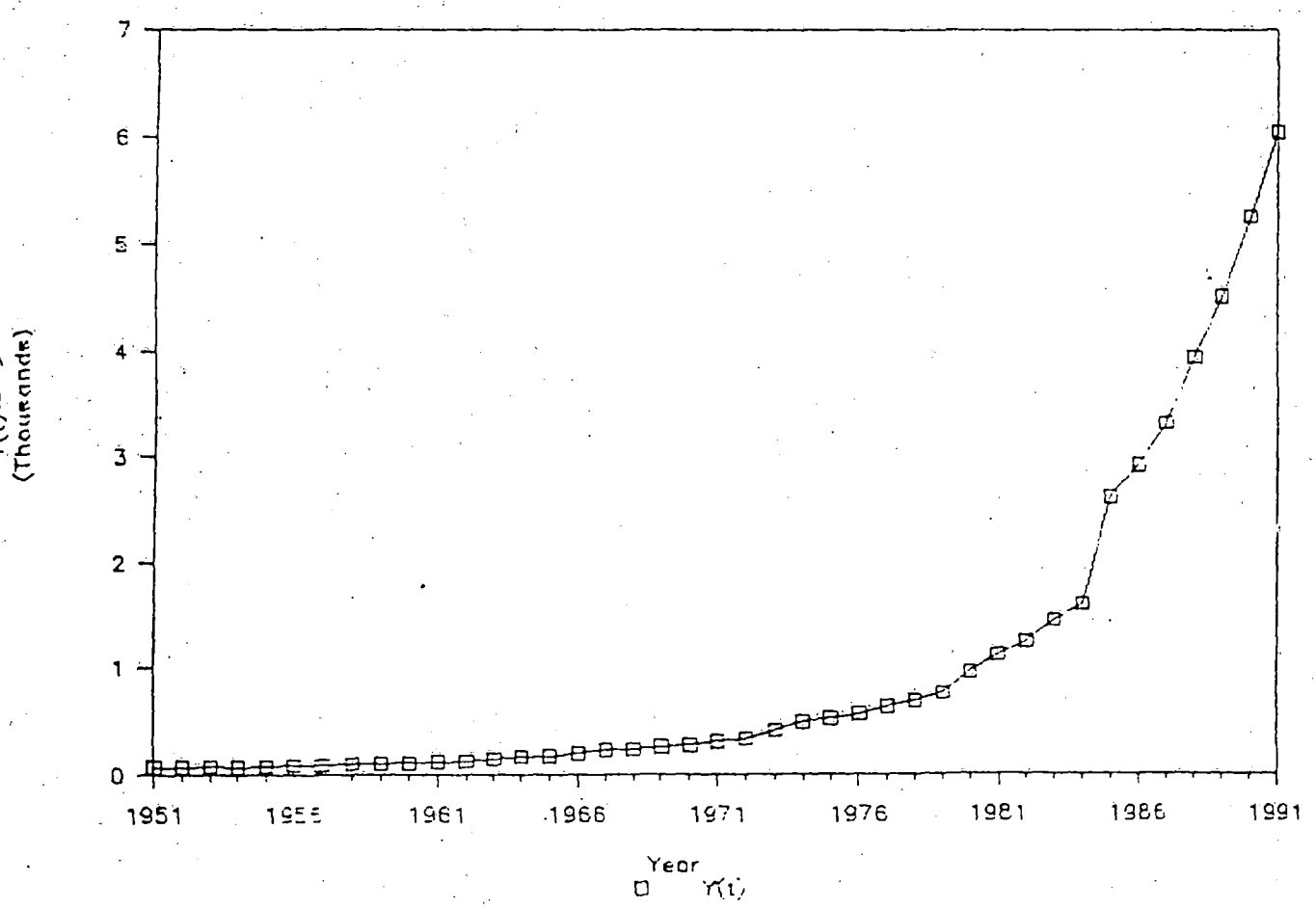


Fig. 1.4 : Time Plot of Output Level (Y_t)



in interest rate which encourages investment. This helped the growth of output level. Simultaneously it increased the purchasing capacity which supported the growth of output. Consequently, income generation may be considered as the result of the expansion of money supply.

The Figure 1.5 presents the time plots of output level and money supply over the period 1951-91. It is observed that output level moved over the period in close association with money supply, though the extent of such association cannot be exactly determined visually. The association is not uniform throughout. Sometimes the association appears to be strong and sometimes it seems weak. Consequently, it becomes pertinent for a researcher to enquire the role of money supply in the growth of output level in Indian economy. This becomes important in view of the fact that price level is also found to maintain an association with the money supply over the period concerned.

1.5 Objective of Study :

This present work is devoted to study output money supply and price money supply relationship in Indian economy over the period 1950-91/92. We seek to examine if price-variations are a purely monetary phenomenon and how far output level has been responsive to variation in money supply.

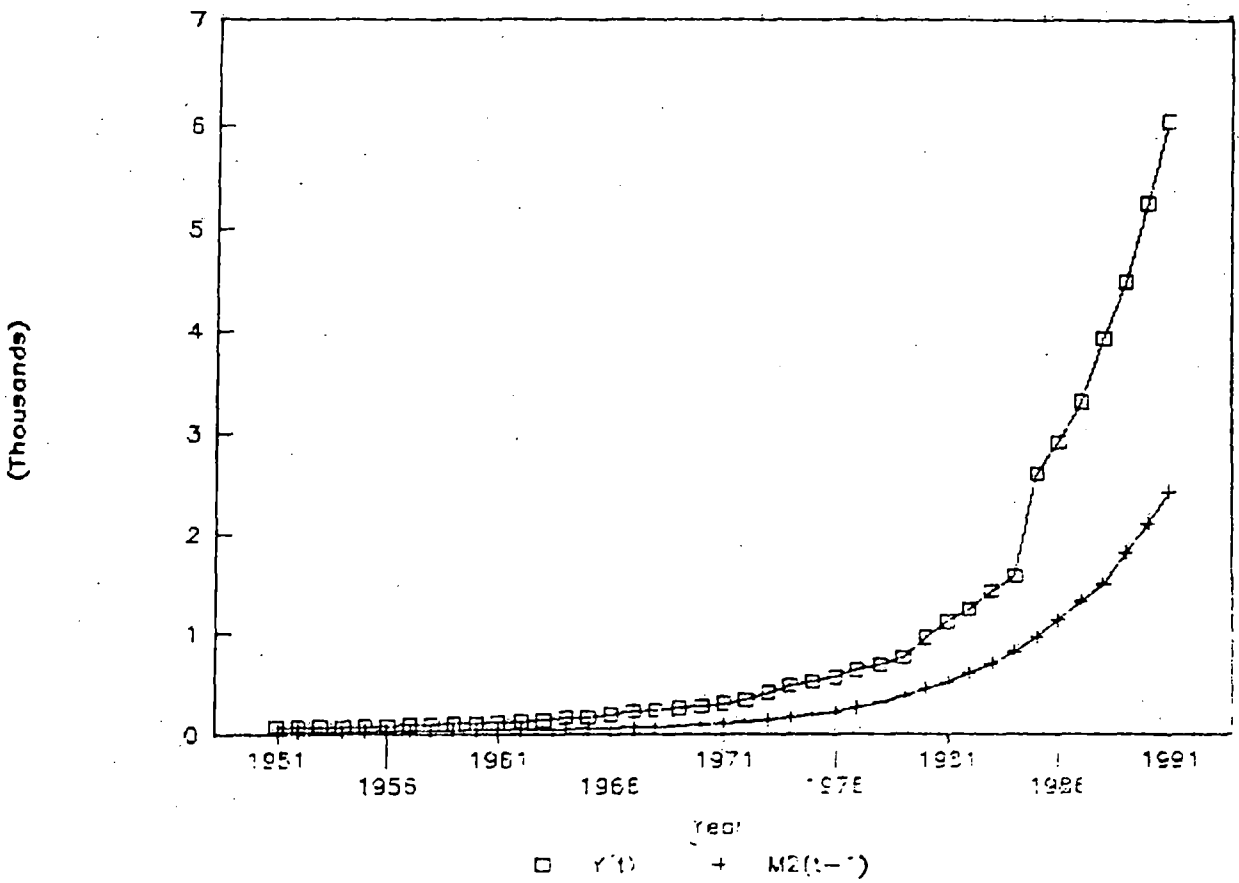
The study is carried along the line suggested by Friedman (1970) where he stresses upon simultaneous examination of the effects of money supply on price and output levels. According to Friedman, overall effects of money supply is dissipated mainly into the effects on output and price level.[4] If output level remains unaffected, money supply goes entirely for changing price level. More the variation on output level, the weaker will be the variation in price level. Friedman holds that money supply stimulates output level in the short run. In the long run, money is neutral. It affects price level only.

In this study, we seek to examine if output level is related to money supply in Indian Economy. We will examine how responsive output level has been to the variation in money supply over the period 1950-91.[5]

---

4. Interest rates may undergo changes following money supply. So money supply may also have "Liquidity Effect".
5. We seek basically to study the associations in output level and those in money supply. The study does not involve the tests of 'Causality' between money supply and output level. Consequently, Granger Wiener Test have not been done in the study.

FIG.1.5 TIME PLOT OF OUTPUT LEVEL (Y_t) AND MONEY SUPPLY (M_{2t-1})



We seek further to examine if variation in price level exhibited any association with those in money supply over the period of study (1950-92) in Indian Economy.[6] We seek to examine further if such relationships underwent any changes over the period concerned.

It may again be noted that the long period as represented by the historical data set may be considered as a time span with heterogeneous process of growth. Output level, price level and money supply have been varying at different rates over the period concerned. Consequently, the overall picture obtained from the use of historical data set may have summarized the relation over different individual sub-periods. The sub-periods depict structural changes in the relations among macro-economic variables concerned.

It, therefore, becomes pertinent for a researcher to enquire if structural changes have occurred over the period of study. If so, it also becomes pertinent for the researcher to identify the sub-periods in which structural changes have occurred. We have also sought to include this issue as an objective of our study.

We seek to identify the sub-periods in which structural changes might have occurred. We will further estimate the relations among the macro-economic variables - in these identified sub-periods. We will examine how the relations have undergone changes over time. This may be expected to provide dynamic and better insight into the response of output level as well as price level to changes in money supply over the period of study.

1.6 Plan of the Study :

This study is accordingly divided into nine chapters.

Chapter I : is an introductory chapter.
Chapter II : presents the review of literature.
Chapter III: deals with data and methodology used in the study.

---

6. In time series regression analysis, the underlying implicit assumption is that various time periods are homogenous except for factors explicitly appearing in the functions. Since underlying condition of an explicit relationship change through time , estimates obtained from time series are considered as short run findings.

Chapter IV: presents the graphical and quantitative study of the relationship between price level and money supply in India over the period, 1950-92. The relationship is examined through the estimation of an appropriate model. The estimated model is the 'best fit' one chosen from among several alternative estimated models. (analysis of the findings follows the estimation of the model).

Chapter V : presents the graphical and quantitative study of the relationship between output level and money supply(lagged money supply) in India over the period concerned. The relationship is examined through the estimation of an appropriate model. Observed nature of the association of output variations with those in money supply has been examined at length.

Chapter VI : is devoted to examine if the price level - money supply relationship so obtained in the historical data set underwent any structural changes over the period concerned. The study in this chapter is motivated by the fact that price money relationship may be expected to undergo changes in different sub-periods over the past few decades. Monetary authorities have adapted different approaches to expansion of money supply in different plan periods. Price variation were not uniform during this period either. Consequently, overall picture about the price money relationship obtained from the use of historical data set might have summarized the relations over different individual sub-periods. It, therefore, seems to be pertinent to analyse the price-money relations in some sub- periods.These may be expected to provide dynamic and more insight into the response to price-level to variation in money supply over the period concerned. The study in this chapter seeks to address this issue.

The sub-period were chosen through the identification of the periods where structural changes have occurred. The identification of structural changes were done with some econometric technique which involve "Window Finding". Such "Window Finding" involve recursive technique. The basic procedure and the findings have been presented in this chapter.

Four sub-periods have been identified in which structural changes in price level money supply relationship are found to occur. These sub-periods are 1950-59, 1960-74, 1975-79 and 1980-92. The relationship between these two macro-variables have been estimated in each individual sub-period. Findings have been presented and the nature of the changes in structural relations has been examined analytically.

Chapter VII deals with identification of sub-periods in which structural changes in the relationship between output level and money supply (lag money supply) have occurred. The Method of 'Window Finding' is used for this purpose. Four such sub-periods have been identified. These are - 1950-60, 1961-70, 1971-80 and 1981-91. The relationship between output level and money supply has been estimated for each sub-periods. Findings have been reported along with analysis of the nature of the dynamic movement of the relationships between the variables concerned.

Chapter VIII : presents the review of the findings in the last two chapters. We seek to examine how the effects of money supply got dissipated into 'output effect' and 'price effect' in different sub-periods . Consequently, an idea about the dynamic movement of price money and output money relationships accross different sub-period is obtained.

In Chapter IX : summary of findings and observations in different chapters has been presented for review alongwith a note of public policy implications of these findings.