CHAPTER-IX

SUMMARY AND CONCLUSION

9.1 Introduction :

This chapter deals with the summary of findings of the thesis paper. "MONEY SUPPLY AND ITS EFFECTS ON OUTPUT AND PRICE LEVEL" with special reference to India (1950-87-90). The study is made in the line of Friedman who states that the effects of money supply dissipates into 'Price effect' and 'Output effect' in an economy.

9.2 It is observed from section 4.8 that

i) Price level, over the period of our study displayed significant positive association with money supply. Price level was found to vary positively with changes in money supply.

(ii) Variation in price level is less than proportionate to that in money supply.

(iii) Price variation was not entirely a monetary phenomenon. Variation in money supply could at best explain71% variation in price level.

(iv) Money supply appears to be a very significant variable for explaining infla tion in the presence of other significant variables. The estimated equation 4 7 shows that money supply affects price level significantly even in the presence P_{t-1} (One period lag price level) in the set of regressors. This seems to be a pointer to the possibility that money supply might have Granger Caused price level over the period concerned.

(v) Money supply failed to affect price level to the fullest extent possible. Its effects might have been dissipated into output effect. Output might have undergone a rise following rise in money supply.

Following Friedman, One can reasonably expect that a part of monetary shocks might have gone to explain variation in output level.

These findings, therefore, tacitly hint us the possibility of simultaneous variations in output level following change in money supply. An investigation on the relation between the output level and that in money supply has been undertaken in Chapter-V.

9.3 It has been observed from 5.7 that

(i) Output level displayed significant variation following changes in previous period money supply over the period 1950-1991.

(ii) Output and money supply variation was found to be positive ($\gamma > 0$)..

(iii) Output variation, though positive, was less than proportional to changes in money supply. Elasticity of output level in respect to money supply variation was found to be less than unity.

(iv) Money supply could explain only 76% of the variation in output level. Consequently, output variation was found to be not completely monetary phenomenon.

(v) Money supply was found to explain output variation significantly $\gamma_2 > 0$ even in the presence of lagged output level in the vector of explanatory variables. This tacitly, implies that money might have Granger Caused output variation over the period concerned.

It, therefore, appears that output variation over the period of study was associated with that in money supply in a positive and non-proportional manner. Moreover, output variation was not found to be completely monetary phenomenon. Effect of money supply over the period concerned, might have gone dissipated. Apart of money supply might have gone to affect price level.

9.4 The price money relationship and output money relationship studied in Chapter-IV and V present overall relationship over the entire period of study. (1950-91-92). However, the relationship might have undergone change over the period (1950-91-92) .

It, therefore, becomes pertinent to identify such structural changes along with the Windows in which such a change relationship remained undisturbed.

9.5 In Chapter-VI, historical (1950-1992) data set has been used for recursive estimation and chow test. In order to identify sub-periods overwhich stable structural relation persists. These sub-periods thus identified for price money relationship consists in 1950-1959, 1960-1974, 1975-1979 and 1980-1992. Consequently, four sub-periods have been identified. This period covers 1950-1959, 1960-1974, 1975-1979 and 1980-1992.(Section 6.6).

9.6 The price money relationship over different sub-periods have been estimated. The results have been presented in the Table 6.2. It has been observed that

i) price variation failed to exhibit any significant association with that in money supply over the sub-period 1950-1959.

ii) variation in price level exhibits significant association with that in money supply in the following sub-periods.

iii) price variations exhibit continuously stronger and growing association with variation in money supply in subsequent sub-periods.

9.7 Four sub-periods for output money relationship have been identified through recursive estimations and Chow test. These sub-periods cover 1950-1960, 1961-70, 1971-80 and 1981-91.Each sub-period exhibits stable output level money supply relationship while the relationship vary accross different sub-periods.

9.8 Output money relations have been estimated for each sub-periods. Table(7.2) presents this estimated equation along with several estimated test statistics. It has been observed that -

i) variation in output level displayed significant associations in three consecutive sub-periods viz 1950-60, 1961-70 and 1971-80.

ii) output level failed to exhibit any significant association with money supply in the last sub-periods 1981-1991.

It has further been observed (**vide 7.6**) that

i) Association of the output level variation with that in money supply (though not significant in the sub-periods 1981-1991) appears to be positive and statistically significant.

ii) the extent of association of the variation of output level with that in money supply was found to be the highest in the sub-periods 1971-1980.

iii) the association declined sharply and showed statistically insignificant in the last sub-periods 1981-1991.

9.9 It, therefore, appears that variational relationship between output level and money supply has not been uniform or homogenous over the periods of study. The relationship underwent several changes over time. Consequently, four sub-periods have broadly been identified. Each sub-period depicts a stable relationship while relationship underwent changes across sub-periods.

Again, association of the variations in output level to those in money supply was found to be dynamically more progressive over time until 1980. This might have been for the structural changes taking place in the economic and institutional set up in India over the period concerned. This might have led to the conversion of money into capital assets which, on the other hand, led to the generation of output level.

It may, again, be noted that very shaky approaches to planning became noticeable since 1980 along with fluid economic principles following political unrestness in the economy over the period concerned. This may be the possible cause behind the loose money policy and non-conversion of money into capital assets. Consequently, variation in output level was found to be maintaining insignificant relation with those in money supply over the period 1981-91.

9.10. It has also been observed that price money relationship has not been uniform either over the period of study (1950-92). Four sub-periods have been identified in each of which price money relationship remained stable though these relationship varied across sub-periods.

It is noted that variations in price level in the period 1950-1959 exhibited insignificant association with those in money supply. However, the association got stronger and stronger over subsequent sub-periods.

9.11 From these findings, it may be noted that -

(a) In 1950's (1950-60) output level responded significantly with changes in money supply, while price level failed to respond to money supply significantly. Moreover, price level in this period exhibited very little volatility.

This observation seems to support (i) Friedman's view that money affects output level to the extent it fails to affect price level, (ii) Lucas' view that money may affect price level under fairly stable price situation.

(b) In 1980's (1980-1991) output level failed to respond significantly with changes in money supply while price level exhibited highest positive level of association with that in money supply over the period 1980-1992.

This is also in conformity with

(i) Friedman's view that money supply fails to affect output level in the long run. In the long run money supply affects price level only.

(ii) Friedman's view that greater the price level is affected by money supply, the less is the effect on output level.

(iii) Lucas' view that money supply fails to affect output level greater the volatility of price level in view of the fact that price level in the period 1980-1992 exhibit very high volatility and volatility is the highest observed over the period 1980-1992.

9.12 Public Policy Implications

These findings seem to have important public policy implication. It appears from these observations that since the last decade (since 1980) there have been some impediments in the way of the conversion of money supply into capital assets. Consequently, money supply has been failing to add to the supply side of the economy. It is on the other hand, has been more and more adding to the demand side of the economy. Purchasing capacity of the people are in spate following massive doses of money supply over the last two decades. Consequently, excess demand has been the regular feature of the economy adding more to the existing inflationary process.

These findings, therefore, seem to indicate that

(i) prudent and cautious steps must be taken to determine the extent of money supply in the economy. In the event of absence of any structural change in the economy allowing conversion of money supply into capital assets, money supply may only add to inflationary pressure. Reduction of the extent of budget deficit and subsidies may be taken as beginning steps in this direction.

As a matter of fact, IMF has, over the recent past, been emphasizing on curbing money supply in India through reduction in subsidies and budget deficit. These policy prescriptions may be taken as an attempt to ease the economy out of the excess demand situation.

(ii) easy money policy cannot be practised for the entire economy but can be undertaken for selective areas of the economy. It may be noted at this point that even at the far end of the twentieth century Indian economy consists of some regions which are not entirely monetised. Some regions exists which are no better than barter economy. Easy money policy practised from these regions/sectors of the economy may result in capital asset formation leading to output growth.

(iii) volatility in the price level need to be reduced considerably. Stable price level opens up a scope for the efficacy of monetary policy in affecting output level. Stable price level persisted for a considerable period of time reduces the extent of expected inflation rate. Consequently, occasional rise in money supply may not add to nominal interest rate. Consequently, there remains a scope for fix level of investment and capital formation.

9.13 However, we are aware that our study over the period 1950-1991/92 has been restricted to only a few Recursive Equations. So, the picture obtained here does not enable us to draw firm conclusions about the effecitiveness of monetary policies for the years to come. There is, therefore, a need for further research with extension of data set for drawing firm conclusion over this issue.