Chapter One

INTRODUCTION

1. Introduction :

Economic growth is defined as "a long term rise in capacity to supply increasingly diverse economic goods to its population, this growing capacity based on advancing technology and the institutional and ideological adjustments that it demands"[1]. But growth in short run implies in the limited sense an increase in the rate of growth of total output[2] with only a few constraints on growth being affected, since a major development in the long run implies as noted above changes in institutional, technological and ideological adjustments which cannot change in the short run. Therefore in the long run as asserted rightly by the monetary economists, the factors to be considered are the real or physical, while in the short run monetary and fiscal policies of the government can influence growth of output and pave the way for sustained increases in output.

By 1960's most of the underdeveloped countries became politically independent and one of the main objectives of

---

1. Kuznets Simon (1971)

2. We have taken total output and not per capita output, as in the short run with an increase in population pressure, it is all the more difficult for an economy to raise the latter. Thus a less strict condition for growth is used.

these countries was to achieve higher rates of growth in output, in order to raise current levels of consumption and to provide resources for investment and future consumption. Thus literature in economics is dominated in this era on how to reduce poverty in these dualistic economies and to start the process of modernisation.

The structure of economy that most of the colonial countries inherited on the eve of their Independence (and this applies to India also) necessitated that a strong government with the motive of improving the general well being of its people, actively participates in the process of economic growth of the economy, thus correcting the imbalances left behind by the foreign rulers. Thus as Gadgil[3] puts "planning for economic development is undertaken presumably because the pace or direction of development taking place in absence of external intervention is not considered to be satisfactory and because it is further held that appropriate external intervention will result in increasing considerably the pace of development and directing it properly."

Before we make an attempt to study any developing economy, we would like to know the chief characteristics of these countries. Most of the countries including India are characterised by low levels of living and productivity; high rates of population growth and dependency burden; high and rising

---

3. Gadgil, D.R. (1972).

levels of unemployment and underemployment; significant dependence on agricultural production and dominance of primary products in exports, dependence and vulnerability in international relations etc.

The Literature on economic growth has been dominated by two major strands of thoughts:

a) The stages of Economic growth theories of the 50's and early 60's.[4]

b) The structural international models of the late 60's and 70's.[5]

In the stages of economic growth theories the process of growth is viewed as a series of successive stages through which all the countries must pass. It is primarily an economic theory of growth dealing with the growth process of the present day developed economies in the historical perspective. It views the right quantity and mixture of saving, investment and foreign aid as neccessary to enable the 3rd world nations to proceed along an economic growth path. Thus as Lewis, A[6] states "The central problem in the theory of economic growth is to understand the process by which a community is converted

---

4. Rostow, W.W. (1960).

5. Associated with the structuralist approach to development policy are a number of economists, among them :
   a) Chenery, H. (June 1975)
   b) Singer, H. (October 1970)

6. Lewis, W.A. (1955)

from being a 5% to a 12% saver - with all the changes in attitudes, in institutions and in techniques which accompany this conversion".

The structuralists view underdevelopment in terms of international and domestic relationship, institutional and structural rigidities. They tend to emphasize external and internal institutional constraints on economic growth.

None of the above arguements advocated by the two schools of thought are in itself sufficient for promoting growth. An effort should be made to solve these two problems of (1) raising enough resources to finance growth programmes and (2) to remove institutional constraints and structural rigidities. For a democratic government the task is formidable especially as far as the second objective is concerned in the short run. It takes a long time to change the structure of the economy;therefore in the short term studies, we take the structure as given and stress the need for raising the resources as "in such countries productive investment is not small because there is no surplus;it is small because the surplus is used to maintain unproductive hoardes of rentiers and to build pyramids, temples and other durable consumer goods instead of to create productive capital. If this surplus were going instead as profits to capitalists or as taxes to productivity inclined governments much higher levels of investment would be possible without inflation".[7] Along with

---

7. Lewis, W.A. (1955)

raising the resources or diverting them to more productive use the government should also remove the institutional bottlenecks.

As we are interested in studying the short term growth rates of developing countries, our study is directed towards one crucial factor that promotes growth - viz 'Saving and Capital formation in the economy'.

2. Saving and Economic Growth :

In the process of economic growth much emphasis has been placed on capital formation. Capital formation implies that the society does not apply the whole of its current productive activity to the needs and desires of immediate consumption but puts aside a part of it to making capital goods that so greatly increase the efficiency of productive effort.

This emphasis on capital, as the main determinant of economic growth has received considerable attention at the hands of analytical economists. The Crux of the hypothesis may be gathered from the much acclaimed version of the Harrod Domar type of formulation. In a nutshell the main idea of growth equation as conceived by Harrod[8] Domar[9] is:

$$\Delta Y_t/Y_t = \frac{S_t/Y_t}{\Delta C/\Delta O}$$

If Y_t is the level of national product at a point of time t. Then $Y_t - Y_{t-1}$ is the increment in national product

---

8. Harrod, R.F. (1948)

9. Domar, E.D. (1957)

between two periods. If I_t is the net investment in period t and $\Delta C/\Delta O$ is the incremental capital output ratio i.e. the amount of capital required to produce an additional unit of output then

$$\Delta Y_t/Y_t = \frac{I_t/Y_t}{\Delta C/\Delta O}$$ where $\Delta Y_t/Y_t$ is the rate of growth of output. For every level of income and employment, investment is equal to saving, therefore we say $I_t = S_t$, So that

$$\Delta Y_t/Y_t = \frac{S_t/Y_t}{\Delta C/\Delta O}$$

If S_t/Y_t is the saving output ratio, then growth in output is determined by S/Y and $\Delta C/\Delta O$.[10]

---

10. This model has been used by underdeveloped countries in their planning exercise. Its practical applicability is as follows:
Suppose it is found that in the beginning of the planning period that $\Delta C/\Delta O = 4 : 1$ and if the planners set the target at 3% p.a. growth, then with the help of the above model we will be able to find saving ratio required i.e. 12%. With $\Delta C/\Delta O = 4 : 1$, the economy is required to save or provide for inflow of international saving of 12%. Having discovered this the planners would chalk out the plan in such a manner that the community is saving 12% of its annual income during the planning period. Thus the fundamental task of the planner would be to find out suitable methods for generation within the economy, the required volume of savings during the planning period. They must also provide for proper steps for effective mobilisation and utilisation of this saving in a manner which would facilitate the fulfillment of investment target of the plans.

Whether we follow the classical view that prior saving is necessary for investment or we follow the Keynesian view that investment spending can generate its own saving, it is important that a country cannot grow faster than the willingness of the community to accumulate real capital. Thus growth essentially depends on saving and investment. Hill[11] concludes that "investment is necessary condition of growth. No country with high growth rate had a low investment ratio. Some countries with high investment ratio had low growth rates"

A similar view is held by the U.N. world economic survey of 1960 which was concerned with the question of saving and economic development[12] "It is therefore clear that investment is of the utmost importance in the process of economic growth. At the same time it is equally evident that in order to realise investment, the necessary resources must be made available. If the low growth countries are to accelerate their rate of growth through increase in investment there is no escaping the fact that corresponding increases in saving must be secured. It is in this manner that the supply of saving may become a factor limiting investment and thereby growth".

---

11. Hill, T.P. (1964)

12. United Nations Department of Economic and Social Affairs, (1961).

3. Inflation and Growth :

We shall now see how Inflation[13] affects growth. Can inflation raise the capital resources in real sense in a capital starved economy like India? The deliberate use of inflationary policies to promote economic growth in the Short run has been recommended on theoretical grounds by certain economists[14]. The main theoretical arguement for inflationary development policies derives from two systems of economic thought:

A) The Keynesian theory of Income Determination

B) The Quantity theory of Money.

a) Keynesian Theory : Kaldor[15] believes that ".....a slow and steady rate of inflation provides a most powerful aid to the attainment of a steady rate of economic progress. Price stability is only consistent with steady growth, when the rate of growth of productivity and/or the working population is sufficiently large to give a relatively high rate of growth to national product. In a weakly growing economy price stability will mean stagnation unless the propensity to consume is raised sufficiently to offset the effect of a

---

13. We are not interested in the cause of inflation. Most of the present day inflation are dis- to a number of factors, like structural rigidities, deficit financing, bad harvest, Oil imports and demand factors.

14. Following Keynes are:
a) Kaldor, N. (1959)
b) Robinson, J. (1956)

15. See Kaldor, N. (1959)

lower rate of growth of profit". In Kaldor's model the money rate of profit depends on the rate of inflation. Kaldor concludes that if faster growth is an objective of policy it would be unwise for a country with a low rate of real growth to aim for price stability.

Underlying the Keynesian approach to finance development by inflationary means are the following hypothesis which remain to be tested:

i) Inflation can stimulate investment by raising the nominal rate of return on investment and by reducing the real rate of interest.

ii) To match this increased investment, it can generate its own saving by keeping aggregate demand buoyant and by redistributing income from wage earners with low propensity to save to profit earners with a higher propensity to save.

iii)A mild inflation keeps resources fully employed. The pressure of demand upon capacity encourages manufacturers to maintain production at full capacity level and refrains from cutting back output for fear of deficient demand which would reduce real growth.

The above arguments would hold only if prices rise such that relative prices change. In particular it is likely that wages will tend to lag behind the rise in prices for sometime, with the consequence that there will be an increase in profit share. As profit receivers have higher propensity to save and invest than do wage earners, the overall saving and investment ratio in the economy will rise and growth will be affected favourably.

This mechanism rests on inflation not being fully anticipated by some groups in the economy or if anticipated then on the failure of these groups to get compensation for inflation, so that on theoretical grounds inflation can affect growth in the short run when it is not fully anticipated.

But to see the effect of inflation on growth, four empirical tests should hold in the short run:

i) that money wages do lag behind prices so that real wages are lower than would be in a regime of stable prices.

ii) the marginal propensity to save of profit earners is higher than that of wage earners

iii)that nominal interest rates lag behind prices, so that real interest rates are lower than would be in a regime of stable prices

iv) investment is determined by real rate of interest.

"Early empirical work on 16th or 17th century Europe and post 1st World War inflation in U.S. seemed to give a great deal of empirical support to wage lag hypothesis. But more recent empirical work has seriously undermined the wage lag hypothesis. Later work mainly on post 2nd World War U.S. data has produced such mixed results that the only safe conclusion about the wage lag hypothesis must be that it postulates a phenomena which is certainly not universal but which may from time to time have happened"[16].

---

16. Laidler, D.E.W. and Parkin, J.M. (December 1975)

Even if we grant that real wages lag behind price changes in the short run we have to prove that the marginal propensity to consume, with, increases or decreases in real income, is constant. Gupta, S.B.[17] states "that it is more likely in the short run that workers try to protect their conventional standard of living in the face of reduction in their real income by cutting back their voluntary saving especially in the initial stages of inflation, when inflation is unanticipated i.e. their consumption behaviour is asymmetrical. Marginal propensity to reduce consumption due to fall in real income is less than marginal propensity to increase consumption when real income rises - this is the hypothesis of downward stickiness of consumption standards. Under this hypothesis net forced dissaving is more likely to follow".

In the context of underdeveloped economy like India, the redistributive effects of inflation may not be in the form of factor shares, especially where the share of mixed income is very high[18]. The redistributive effect of inflation might be examined in the form of redistribution to urban or rural sector or the terms of trade effect. Rao, V.K.R.V.[19] observes that "it is the primary sector which has gained the most (or lost the least) from the inflation that has accompanied the growth of real net domestic product during the period

---

17. Gupta, S.B. (April 1975)

18. The share of mixed income in net domestic product is approximately 43% (at current prices)

19. Rao, V.K.R.V. (1983)

1950-51 - 1979-80[20] (though there is a reversal of trend from 1970-71 - 1979-80). If the terms of trade move infavour of primary sector and thereby the incomes of agriculturist increase, then we would expect the aggregate saving to fall, as the empirical results[21] point out that marginal propensity to save out of rural sector is less than that of urban sector.

As regards the contention that real interest rates lag behind prices and therefore the creditors lose and debtors gain, Irwing Fisher[22] suggests that inflationary expectation

---

20. a) This conclusion is also confirmed by studies which have been made in net barter and net income terms of trade between agriculture and non-agriculture sector:
    i) Venkataramanan, L.S. and Prahaladachar, M. (February 1979)
    ii) Thamarajakshi, R. (June 28, 1969) states: "During t1951-66 while all prices received by agriculturist rose at 5.94% p.a., those paid by agriculturist registered an annual rate of increase of 4.45%; consequently net barter terms of trade improved in favour of agriculturist at 1.49% p.a. Finally the index of income terms of trade which is a true reflector of the economic betterment of the agricultural sector has grown at as high a rate as 4.53% p.a. during this period thereby showing the increasing capacity of this sector to purchase non-agricultural commodities".
    b) For a further discussion on this see Part II, The Indian Economic Association (December 28-30, 1985).

21. a) Gupta, K.L. (December 1970b)
    b) Krishnamurthy, J and Saibaba (1982)

22 Fisher Irwing ( )

would exert a powerful influence on the level of nominal interest and produced empirical results consistent with this hypothesis. Recent studies as far as U.S. long term rate of interest is concerned found that inflationary expectations exerted an important influence on it particularly after 1967. "How long it takes for rates to change sufficiently to compensate fully for a change in inflation rate - as far as U.S. is concerned, is somewhere in the region of two decades. If this is the case then there is ample scope for inflation to redistribute wealth from creditors to debtors in the interim"[23]. Thus in the short run, the creditors usually the households would be losers and debtors - the private corporate sector and government would be gainers. In India most of the interest rates are administered, so that they do not reflect the true market conditions.

In any case in the short run, Inflation is likely to reduce the real rates of interest.

Another pertinent question in regard to Keynesian effect of inflation on real output is: How far investment is responsive to real rates of interest? The empirical studies do not clearly indicate the significance of this variable.[24] All that can be said is, the more important external finance is for investment the greater the effect of interest rates on it. If investment is largely financed by internal sources then a rise in the interest rates would not affect the investment

---

23. Laidler and Parkin (1975)
24. Krishnamurthy and Sastry, D.U. (1975)

decisions immediately. Since in India, the corporate sector is heavily dependant on external finance and since its proportion in total sources of funds has increased in most of the industries, rates of interest are likely to have some effects.

It has been discussed in the context of underdeveloped countries that because of the existence of large unemployed resources, which is due to lack of complementary factors of production and not due to deficient demand, the argument for inflation that fuller capacities will be utilised may not necessarily hold and for similar reason the Keynesian multiplier may not work in underdeveloped countries[25] as idle capacity is not existing. Contrary to this argument certain others[26] argue that if deficit spending is utilised for investment in quick yielding projects, the supply would increase and the capacity creating effects will raise the rate of growth of income provided investment is made in projects of not very long gestation and also utilise less capital.

Inflation on the other hand is seen by few as a necessary evil and a price to be paid by the underdeveloped countries if they want to mobilise the resources for development. This view is based on the various rigidities and immobilities that are characteristic of these underdeveloped countries. "In any major development programme major

---

25. Rao, V.K.R.V. (1963)

26. Thirlwall, A.P. (1972)

shifts of resources are required from traditional activity. When this is imposed on the society which is not accustomed to priceincentives than relative prices will have to be severe to get the desired effect."[27] Therefore development programme would move at a slower pace with stable prices than with rising prices.

On the other hand Friedman[28] states: "the view that development makes inflation inevitable is misleading and arises from confusing physical magnitudes in the economy with the monetary magnitudes".

We can therefore argue that in a country like India in the short run with inflation real rates of interest are likely to fall, which may lead to increases in investment. Also inflation is likely to change the redistribution of income and therefore saving ratio may increase. Yet growth may not positively respond to inflatdon; this is because incremental capital output ratio is not assumed to remain constant. Instead inflation is likely to create a new class of consumers who demand more of consumer durable goods.[29]

---

27. Johnson, H.G. (1969)

28. Friedman, M. (1968)

29. In underdeveloped countries inflation is not likely to affect the lower classes as part of their wages are in kind (and savings are less likely to be affected as this is essentially not the class that saves). Real redistribution is likely to take place from salary earners to profit earners. The former to maintain their standardof living may reduce saving but not consumption when their real income falls, but the latter on gaining may spend on luxuries. For further discussion on these and other factors on the demand side leading to lopsided development refer to: Monga, G.S. and Panigrahi, M.S. (1985)

(which need sophisticated technology). As investment is determined by demand, it will flow into these industries (as profit margins are higher here). In these industries the capital required per unit of output is more and therefore general incremental capital output ratio increases. Thus the effect of inflation on growth may not be very encouraging and the purpose of undertaking deficit financing might be defeated unless the government is very vigilant to offset the negative aspect of inflation.

b) Quantity Theory : In contrast to the Keynesian theory which emphasizes the favourable effect of inflation on growth in the short run, the quantity theory stresses the favourable effect of inflation in the long run, when all have adjusted to the expected inflation. Here inflation which is due to increase in money supply produced by government helps the latter to procure real resources which are given up by the holders of money i.e. the public[30]. The argument is as follows: Inflation yields direct revenue to the government because inflation requires increase in money supply. This increase in money supply requires very little cost relative to the revenue or profits that government gains from issuing it. This revenue is slightly less than the value of currency issued. However the real yield from currency expansion depends

---

30. Provided these holders of money are not increasing their demand for money at the expense of other forms of saving, but are reducing their consumption to increase nominal money balances.

on the rate of inflation. The arguments about real yield from currency expansion can be discussed in two steps:

1) non-inflationary component of currency expansion in a growing economy and
2) inflationary expansion of currency.

In a growing economy with monetisation of the economy still in the initial stages the public demand for real money might grow faster. Therefore government can increase the supply and raise the revenue, so long as this increase in the supply of money is to meet the increased demand for it at constant prices. On a reasonable assumption that income elasticity of demand for money is unity, this yield per period will be given by real stock of money at the beginning of the period multiplied by the rate of growth of income. This revenue yield is in this nature of monopoly profit which the government as the ultimate authority makes from its monopoly of money issue.

While the revenue yield from inflationary currency expansion is like a tax or forced transfer of income due to such expansion. Inflationary expansion of currency by causing inflation, lower the real value of money balances of the public. But at a certain steady rate of inflation and given the level of real income as well as of the rate of interest, the public demands a certain amount of real money; therefore it makes good the loss of real money caused by inflation by adding to its nominal balances of money. In the process the government gains

real income when it supplies new money - this is inflation tax on cash balances.

It has been shown by Bailey[31] that in equilibrium, the real yield of this inflation tax is given by; real money balances of the public multiplied by the realised rate of inflation, which would also be equal to proportionate rate of money expansion. Of the two, the former is called the tax base and the latter the tax rate. It has also been shown that the real yield of inflation tax does not increase monotonically with increase in the rate of inflation tax, but first increases, reaches a maximum and then declines. The total yield from money expansion can as well be negative[32]. At what rate of inflation this happens will very much depend among other things upon how fast the demand for real money falls as the rate of inflation is stepped up i.e. elasticity of demand for real money balances with respect to the expected rate of inflation. But the important thing to note is the result that if the rate of inflation goes 'too high' the real yield from expansion can as well be negative. The presence of this tax in turn encourages the public to attempt to evade the tax by reducing their real holdings of money by shortening payments periods, holding inventories of goods instead of cash and so forth. These efforts involve a waste of real resources and a reduction of real income, which is cost

---

31. Bailey, M.J. (April 1956)

32. Friedman, M. (July-August 1971)

of collecting the inflation tax. On the other hand these resources collected can be used to finance development programme which could accelerate growth. How much ~~~~ resources can be made available for financing development depends on rate of growth of money demand, the ratio of money to income and the portion of additional money that can be used to finance public spending.

Mundell, R.A.[33] has estimated the contribution that inflationary financing might make to economic growth. His results show a maximum inflation tax yield of 3% of national income and maximum increase in the growth rate of 1.5% on one formulation of the influence of the rate of inflation on demand for money and a yield of 3.2% of National Income and increase in growth rate of 0.8% on another.

Aghevli and Khan[34] results for the period 1950-1972 for Indonesian economy yield a revenue maximising rate of monetary expansion of 182% per annum. It produces revenue for the government from deficit financing equivalent to 6% of national income. However they obtain a welfare cost equivalent to 14% of National Income suggesting that this may be very burden some means of raising government revenue.

In the framework of adaptive expectation model of inflation, Sjaastad[35] has demonstrated that, the longer it takes for expectation to adapt (i.e. the smaller the coefficient of expectation λ), the better it is for the issuer of

---

33. Mundell, R.A. (April 1965)
34. Aghevli, B.B. and Khan, M.S. (June 1977)
35. Sjaastad, L. (1977)

money. A smaller coefficient of expectation i.e. λ means that a rise in the rate of inflation will take a long time to significantly affect expectation, so that the demand for money balances will adjust only slowly towards its new equilibrium level. In this situation the government can earn revenue at a higher level in the short run.

It is revealed in case of India[36] "that Seignorage is larger than the direct lending of the private sector to public sector accounting for about 16% of real public investment during 1975-80 and about 20% in 1980-82. Seignorage was particularly large in period 1980-82 when inflation rates were relatively high".

This suggests that in India the government has gained from inflationary policies. As this gain has been used for increasing public investment, therefore inflation is financing growth although some costs are attached to it.

c) Financial Repression and Inflation : The activities of financial institutions open up safe channels of saving and investment which are vital for promoting growth. To the extent that the growth of financial institutions reduces risks and diminishes the rate of interest, investment is expected to rise. Growth in developed countries has been significantly associated with the growth of financial institutions. The role of the institutions has been particularly emphasized in Gurley and Shaw[37] thesis.

---

36. Pinell Siles, A. and Ravishanker, V.J. (1985)
37. Gurley, S.G. and Shaw, S.E. (1967)

If saving and investment both are functions of real interest rate, then without any financial constraint r_e - the equilibrium real interest rate, is where S = I. With financial repression, the institutional interest given by $r^i < r^e$, thus saving will fall and so would investment, as it is constrained by saving. This will have effect on growth.

McKinnon[38] model rests on the following assumption (a) all economic agents are restricted to self finance and (b) there are important indivisibilities in investment activities. He puts forward a hypothesis related to the basic complementarity between money and physical capital. He argues that conditionsthat make real money (M/P) attractive to hold, enhance rather than inhibit private incentives to accumulate physical capital.

In this framework Mckinnon[39] and Shaw[40] have analysed the effect of inflation on the level and quality of capital formation. Inflation acts as a deterrent to holding money for long period and therefore produces tendency for investment by small scale entrepreneurs to purchase small doses of capital more or less continuously. These may have a much smaller return than more indivisible items of capital equipment. The study by Vogel and Buser[41] concludes that "In Latin America Inflation has had an adverse effect on real level of demand, time and saving deposits. The currency ratio rises from low

38. McKinnon, R.I. (1973)
39. McKinnon(1976)
40. Shaw, E.S. (1973)
41. Vogel, R. and Buser, S. (1976)

to high inflation countries and rates of growth of deposits are slowed in high inflation countries". They conclude that the negative impact of inflation on the ratio of time and saving deposits to gross domestic product is not only highly significant but also approximately unit elastic; this study also finds that the ratio of time and saving deposits to gross domestic product has a positive effect on capital formation thus giving strong support to complementary hypothesis. They stress that in practice inflation does not affect all prices equally; it lowers real interest rates on deposits, so it reduces the attractiveness of holding this asset in household portfolio and thereby the operation of financial intermediaries. Low or negative real rates on loans tend to encourage relatively capital intensive investments and may be associated with high levels of surplus capacity.

In case of India Gupta K.L.[42] finds that "Financial intermediate ratio does not appear significant either for financial saving or real saving suggesting no direct effect of financial intermediaries in altering the composition of saving".

d) Inflation and Monetisation : Another effect of inflation is on monetisation of the economy. Non monetised sector in India may be as large as ⅓rd of gross domestic product[43]. Monetisation of transaction makes possible a higher degree of specialisation and hence a higher level of productivity than

---

42. Gupta, K.L. (1984)
43. Chandravarkar (1977)

is possible in subsistence and barter. If Inflation increases the risk and cost of using money it can be expected to have an adverse effect on the growth and efficiency of the economy by slowing down or even reversing the trends towards monetisation.

Thus the relationship between inflation and growth is likely to be both complex and varied, and the broad conclusion is: that for developing countries a moderate rate of inflation upto 10% may promote growth.

4. Inflation and Saving :

a) Importance of Saving : From our study of Inflation and growth, we can see that whether it is the Keynesian or the Quantity theorist or the financial repressionist school of thought, all of them are emphasizing at some stage or the other the role that inflation plays in generating additional resources for development purposes.

Hicks[44] too states "it is wrong to give impression to a poor country which is very far from equilibrium even on past technology that capital accumulation is a matter of minor importance". As capital accumulation requires saving to finance it a number of empirical studies have investigated the factors determining saving.

b) Survey of Literature on Empirical Studies Estimating Household Saving Function : In the classical framework, Saving is determined by rate of interest, while in the Keynesian

---

44. Hicks, J.R. (1965)

framework Income is the main determinant of saving.

In the empirical studies estimating saving function (by saving is meant personal saving) some of the important factors are income, rate of interest, distribution of income, financial intermediation ratio, Inflation etc.[45] We shall briefly examine each of these factors.

How much individuals save will depend on their Income. Keynes used the absolute income as the explanatory variable. But the so called 'ratchet' theories of consumption have proved very useful. They assume that by virtue of habit or sense of caution individuals do not immediately react to their income increases; rather there is some inertia in expenditure.[46] Therefore the more swiftly incomes expand, the greater will be the volume of saving.

Friedman[47] advocated the role of permanent income. An unexpected increase in income is treated as transitory and frequently saved. The permanent income hypothesis requires a considerable volume of data which is generally lacking in most of the underdeveloped countries.

Empirical Studies relating to underdeveloped countries support absolute income hypothesis "but the relationship is

---

45. For an exhaustive Survey on saving function refer to :
    a) Suyder, D.W. (Jan. 1974)
    b) Ferber, R. (March 1962)
    c) Mikesell R. and Zinser, J. (March 1973)

46. Dusenberry, J.S. (1967)

47. Friedman, M. (1957)

erratic and some what weaker than for advanced countries."[48] For Indian economy Gupta[49] has estimated personal saving function with both absolute income and permanent income; the evidence is for absolute income as the transitory income results are less clear cut. Krishnamurthy and Saibaba[50] relate household saving ratio to rate of change of per capita income. Their conclusion is "It has a positive impact on household saving rate; this lends support to the hypothesis of lags in consumption in response to changes in income with regard to household sector".

Regarding distribution of income, the standard hypothesis is that savings between different types of income differ. The marginal propensity to save out of non wage income marginal propensity to save out of wage income.[51] As already noted that in case of underdeveloped countries the distribution effect can also be studied with respect to distribution of income in rural and urban area and here all studies consistently get the result that marginal propensity

---

48. Suyder, D.W. (Jan 1974)

49. Gupta, K.L. (June 1970a)

50. Krishnamurthy J. and Saibaba (1982)

51. a) Houthakker, H.S.
'The reasons for differances has to do with the returns on Investment available to different classes of people'

b) Juster, F.T. and Taylor, L.D. (May 1975)

c) Ramnathan (1970)

save in urban areas is greater than Marginal propensity to save in rural areas; therefore any policy directed towards increasing the share of urban income would increase the saving ratio also.

In general it is assumed that people have a strong preference for present consumption over future consumption. Therefore a person will forgo present consumption only if he is paid premium equal to or greater than his marginal rate of time preference. Therefore a higher rate of interest will induce an individual to forgo some more present consumption in favour of future consumption, so that a positive relationship between the two is postulated. It is possible to have inverse relationship between saving and interest rate - this is when individuals save towards a lumpsum of wealth in future. An increase in the rate of interest will enable the individual to put aside a smaller sum every year and still reach the desired goal of saving a fixed sum, so that while an increase in the rate of interest will induce the individual to substitute future consumption in place of current consumption, the high rate of interest also improves his future income prospects that may tend to make him save less today. The former effect is likely to be more. Empirical Studies[52] in case of India

52. a) Gupta, K.L. (December 1970), He found the relationship between urban sector saving and interest rate positive and significant. He tried a number of interest rates but the best results were in terms of rate of interest on commercial bank saving deposits.

b) Lakdawala, D.T. and Mody, R.J. (1975), They have estimated total saving function with yield on debentures as a proxy for rate of interest as independent variable. The coefficient are significant and interest elasticity at mean level is 1.25

indicate that Indian households positively respond to rates of interest (both short term and long term rates of interest).

Regarding financial intermediaries, it is noticed that an inadequate or less developed financial superstructure is generally associated with a greater proportion of saving being diverted to relatively less productive assets. For Indian economy Gupta[53] reports of "no direct effects of financial intermediaries in altering the composition of saving," while Pandit[54] reports "the significance of number of bank branches, in the household saving in time deposits". Probably what can tentatively be said (though much more needs to be explored on this) is: financial intermediaries are likely to change the composition of saving, diverting savings towards them, but whether these savings are at the cost of reducing the other components of saving is still not well established. If financial intermediaries are not affecting total household saving then there is an indication that, there might be certain assets in households' asset portfolio which are substitutes, and therefore the effect is nullified on the total household saving.

Another factor which has assumed a lot of importance in the determination of saving is inflation. The effect of

---

53. Gupta K.L. (1984)
54. Pandit, B.L. (1985)

inflation on household saving is via

a)Real Balance effect

b)Uncertainty effect

c)Intertemporal commodity substitution effect.

The real balance effect of Inflation is to reduce the value of that part of wealth which is held in liquid asset form and which may have influence on consumption saving decisions. The wealth effect of inflation on liquid assets is to reduce the real value of that part of disposable income which is derived from ownership of liquid assets. To the extent households hold in real terms a fixed proportion of these liquid assets more of such balances will have to be added in conditions, when their value is falling - to that extent therefore they need to save correspondingly more.

At conceptual level two arguments are offered in favour of positive relationship between inflation and consumer uncertainty: (a) Juster and Wachtel[55] argue that rising prices add an extra variable in making forecast of real income i.e. inflation adds to uncertainty as to whether nominal income will rise as fast as nominal prices. (b) Inflation may affect unfavourably consumers' attitudes and expectations about the future in terms of job opportunities, costs and available finance and social and political stability.[56] Leyland[57] too

---

55. Juster F.T. and Wachtel, P. (1972)
56. Juster F.T. (1974)
57. Leyland, H.E. (August 1968)

argues that inflation is associated with greater consumer uncertainty and that as a consequence consumers will increase their precautionary saving.

Rational households with the expectation of rising prices will increase their current consumption expenditure to protect themselves from future higher prices and therefore their savings will fall.

Thus on theoretical grounds the effect of inflation on saving is not settled and it is a matter of empirical evidence that we have to look for. A lot of empirical work[58] has been done to study the effect of inflation on personal

---

58. Freebain, J.W. (1977) -"has included two price variables $\Delta P/P$ and $\Delta(\Delta P/P)$ in their functions for the period 1948-49 - 1974-75 for the Australian economy and report." Rising rate of inflation is associated with a fall in consumption ratio. There is evidence suggesting that in practice households place much utility on a fairly constant liquid asset to income ratio, irrespective of the real rate of return on liquid and alternative assets; this could be explained by lumpiness of real assets and their relatively higher transaction costs as compared to liquid assets or by households' imperfect knowledge of such variables as the current and future period realisation values of non liquid assets".
Similar results are obtained by:

a) Tautt, A. and Burnell, F. (1976)

b) Buch, S.W. and Wernela, D. (May 1975)

saving and most of the results pertaining to advanced countries do indicate that there exists a positive relation between inflation and saving. Regarding underdeveloped countries the results are conflicting. Thirlwall states "that none of the results are very encouraging for the hypothesis that inflation raises the saving ratio independently of other variables. The inflation variable generally has a correct positive sign but in most samples the coefficient is statistically insignificant. When the less developed country group was split into two using $ 200 as the criterion for division, the results for inflation are : its coefficient is negative in the very poor countries and it is consistently positive in the sample of countries with per capita income between $ 200 and $ 799 but in neither case is the relation statistically significant"[59]. In case of India too a number of studies have included Inflation as an explanatory variable in saving function. For the price level effect both Joshi[60] and Diwan[61] get a negative effect on saving. In recent studies by Krishnamurthy and Saibaba and Pandit, the results are at variance. All that can be gathered from the conflicting and scattered results is that if inflation was to proceed at slow pace and is unanticipated then the effect is likely to be negative, but if inflation is anticipated then saving rates might increase; so if

---

59. a) Thirwall, A.P. (Jan. 1974)
    b) Yoo Jan. H. (July 1977) - states that inflation stemming from money supply increasing, is conducive to Economic growth because it can be positively related to saving ratio at moderate rate of inflation; this being defined as 4 - 6% for underdeveloped countries.

60. Joshi, V.H. (April-June 1970)

61. Diwan, R. (April 1968)

resources are to be raised for development purposes by inflationary means, then for it to have any effect inflation must proceed at higher rates and also the rates should be well anticipated.

5. Objective and Scope of the Study :

We have already emphasized the need to raise and mobilise domestic saving in a capital scarce economy like India and in that context discussed the various factors affecting saving functions.[62] All the studies cited above have treated saving as Income minus consumption that is they are following the residual approach. This is because of Keynesian analysis, which gives emphasis to the role of demand in determination of income and growth of income. As supply is our main constraint on growth we give due emphasis to the process of saving. We are emphasising saving behaviour of individuals not only as the other side of consumption, but as a goal by the individuals to achieve the set targets of savings. By doing so what we are really postulating is that, saving of individuals is determined alongwith other factors by the amount of different assets they wish to hold and the kinds of assets available in the market. Thus the composition of saving itself determines the saving of household. It might be argued that in an underdeveloped economy like ours, saving as residue of income after

---

62. Reference may be made to section 4

consumption is allowed for, would be a better way of analysing the behaviour of household.

Here it may be mentioned that, saving is mainly done by a small proportion of household in India who are having relatively a higher standard of consumption, so that their consumption habits are already determined to a large extent by past habits.[63] The volatile part of consumption i.e. consumer durables is taken as a component of total saving of households. Thus changes in income or any other factor affecting the behaviour of the household under these circumstances is likely to affect the composition of saving and total saving rather than consumption. For people, whose consumption is at low levels and therefore fluctuates with general conditions of the economy, are not really considered in our study, as they simply do not save and whatever little they save in the form of precious metals and traditional consumer durables, does not come under our definition of saving. We have considered the dissaving function of the households, but as it refers to the liability being incurred by households from institutions only, so it does not fully reflect the dissaving behaviour of the households, as most of it approximately 80% is cancelled on account of aggregation over households.

---

63. We are not denying the fact that the first charge on income is that of consumption but are allowing for the fact that the availability of different assets and a desire to own them may also influence the saving behaviour.

Such a framework will help us to study saving behaviour as a source of growth in under developed economies. Thus in our study, saving is the net worth of all individuals and is defined as changes in net assets minus changes in liabilities. Thus our study is directed towards studying the structure of capital account of the households over time. This method of analysis is adopted as opposed to only studying net outflow of saving from household sector (the main surplus sector) because, as pointed out by NCAER[64] "information on structure of household saving is of interest as it provides a clue to the extent to which household saving get transferred to other sectors". Thus in our scheme of analysis the structure of capital account of households apart from determining the saving ratio, Capital output ratio and growth, allows us to study where the surplus funds are flowing: Are they going

1) Into government securities or to corporate sector directly?
2) To financial intermediaries?
3) To self finance?
4) To consumer durables?

The flow of saving along with other factors is likely to affect the investment which in turn affects growth. Thus the emphasis on composition of saving stems from its likely effect on saving ratio and on the capital output ratio in the shortrun and there by on the growth of an under developed economy.

---

64. National Council of Applied Economic Research, (1966-67)

With the commencement of 2nd five year plan heavy investment in long gestation lag industries were made. This was with a view to broaden the capital base of the economy, which in turn would increase the future rates of growth of the economy. Then domestic saving rates were low and as foreign savings were not forthcoming, therefore heavy deficit financing (an easy tool to finance growth) was incurred by government both for development purposes and for welfare schemes. These deficits were mainly financed, by borrowing from Reserve Bank of India, which in turn meant increasing the supply of money. Thus from 1955 onwards, we have a central government dedicated to increase the economic growth of the country. This meant that, it will have to directly participate in a number of productive activities (as the necessary infrastructure and resources were not available) especially in those areas, which yielded high social returns. Thus in a resource constraint economy with feudal interest still predominant, it was difficult to raise finance for development and therefore it meant easy financing through inflationary means. As a result of this, ever since 1955, the economy has witnessed intermittently rising prices allthrough, though the rate of increase in prices was mild. Nonetheless, overtime the rate of inflation has both increased and varied a great deal. Thus the rate has been accelerating and not self liquidating as advocated by Keynes' followers; the reasons for this could be many e.g. the structure of the economy

breeds inflationary spiral once started; deficit financing is resorted to continuously on account of government failure to raise resources from other sources; faulty investment plans which did not result in increasing outputs and so on. Whatever be the reason, we notice that India has been facing the inflation problem for the last two decades, though the rates have neither been steady nor substantial but rising. It is in this context that we want to see how growth has responded to inflation when it was mainly anticipated and at relatively low levels.

We shall therefore examine whether inflation mainly caused by deficit financing and other structural rigidities could in the short run (a) release resources for investment i.e. increase saving ratio and (b) productively employ these released resources for investment and thereby enhance productivity i.e. reduce incremental capital output ratio. Thus, could inflation increase the growth rate of the economy?

We shall attempt to answer the following questions:

a) Does inflation have any effect on the composition of the household saving?

b) Does this effect on composition of saving get transmitted to:

   i) total quantum of saving of the household? and

   ii) incremental capital output ($\Delta C/\Delta O$) ratio alongwith other factors? If it does, then inflation would seem to have impact on short run growth rates of the economy. Our study therefore makes a very modest attempt to examine the effect of inflation on growth via both the saving ratio and

incremental capital output ratio.

Our study has certain limitations:

a) An important component of saving of household i.e. Gold could not be explicitly introduced in the model due to lack of data. Its effects can be studied indirectly in our model through the independent variables - expected rate of return on gold. Also ashort note on its effects, is placed as an appendix to chapter 3.

b) Similarly black money which is partly due to inflation would have some effect on the economy. Again due to non-availability of time series data on this, we have not introduced this in our model. Yet a small note on its effects is displaced as an appendix to chapter 3.

6. Methodology :

The model is subdivided into 3 parts:

a) Itconsists of 8 equations with 8 dependent variables to be estimated over the period 1951-52 - 1984-85. All these equations are dealing with domestic saving, household saving and its components. The independent variables affecting these saving ratios are: disposable income, expected rate of inflation and expected real rates of return on different assets.

b) It consists of 1 equation dealing with incremental capital output ratio which is estimated in the reduced form. Similar variables as in parta are its explanatory variables.

c) It consists of certain identities dealing with growth.

We are going to estimate equations of only the first two parts, and then through these study the effects of inflation and other variables on growth.

All the equations to be estimated are in the linear form and they are estimated by method of ordinary least squares.

7. Plan of the Study :

Chapter I, the present one is an introductory chapter dealing mainly with the scope and importance of the study. We have also reviewed the work done, both abroad and with specific reference to India.

In Chapter II, following this, we have spelt out our approach to the problem and explained the methodology, Here the definitions of the variables used and the methods of estimating them are explained. The data sources and their compilation are discussed.

In Chapter III, we present our model consisting of 3 parts (1) Composition and total saving of the household and domestic saving (2) incremental capital output ratio and (3) Growth equation. An appendix to this chapter deals with neglected variables i.e. Black Money and Gold.

Chapter IV, is dealing with an analysis of trends in the exogenous and endogenous variables and simple relationship between different variables.

Chapter V, presents the empirical estimate of the parameters of the model and their implications.

Chapter VI, is the concluding chapter dealing with the significant results and some policy prescriptions.