Chapter Two

METHODOLOGY AND SOURCE OF DATA

1. Introduction :

In the context of a planned econmmy desirous of stepping up its rate of capital formation, without dependence on foreign saving, it is not just enough to target a particular investment required for a postulated growth rate but also to see whether such investment will be supported by the flow of savings. Thus for each real investment programme there should be a corresponding plan to raise the financial resources which supports the programme. If an exercise of this sort is not carried out at least for the overall investment programme then financial imbalances between borrowers and lenders in the economy may act as a constraint towards the realisation of the target rate of growth[1]. Therefore there is a need to study the behaviour

1. In underdeveloped countries savers typically prefer to accumulate tangible assets e.g. real estate, precious metals, inventories, jewellery and foreign exchange in place of domestic and financial assets, partly because opportunities for latter do not exist, also the former are more secured assets. But such wealth forms represent 'low priority' investment for purposes of growth, so that though wealth accumulation is taking place, yet investors in 'highpriority' capital projects may be unable to issue primary debt to finance their deficits on terms that are acceptable to such savers. Therefore in a rudimentary financial system, in the absence of government intervention, a primitive outlook will lead to a less efficient programme of capital formation and consequently to reduced rate of growth of real output. In this case economic units with promising investment opportunities but lacking outside finance are compelled to forgo deficit expenditures, while other economic units spend their saving on low priority projects.

of not only the major surplus sector "household saving", but its composition as well i.e. the allocation of its additional wealth and wealth among the different assets that are available. Once the factors influencing the household demand for various assets are known, the government can then attempt to operate upon these to ensure proper flow of funds to the deficit sectors, so that investment targets can be fulfilled. Therefore, it is necessary to study the households' portfolio behaviour along with the net outflow of its saving.

The Keynesian system accorded financial relationship a central role even though Keynes himself was highly skeptical of the empirical responsiveness of consumption, saving and investment decisions to interest rate variations. Neo Keynesian theorists introduced real wealth including both tangible and financial asset stocks as a variable affecting spending and production behaviour. More recent analysis of economic behaviour in the face of uncertainty has led to recognition, that portfolio composition as well as the total value of wealth stocks play a critical role in influencing asset owner behaviour on current account.

Inflation usually associated with nominal monetary change alters not only the total of real private wealth, but also the composition of private wealth among different types of financial and tangible wealth forms. With uncertainty

---

Thus distribution of expenditure is forced back toward the distribution of income, resulting both in a lower level of capital formation and saving and in a less efficient ordering of investment expenditure.

existing and increasing with inflation[2], wealth owners may not be regarded as indifferent to the portfolio composition of their assets and debts. Consequently once wealth is admitted as a factor affecting current economic behaviour, portfolio considerations provide an additional reason why financial change can no longer be regarded as leaving the real equilibrium configuration of an economy unaffected.

2. Survey of Work on Portfolio Behaviour of Household :

a) Importance of Portfolio Behaviour : In the face of uncertainty, there is both theoretical and empirical evidence that, households attempt to maintain some balanced portfolio position depending on their taste, occupation, age, information and opportunities. The recognition of saving as a demand for asset underlines the obvious fact that with regard to the goal of economic development and growth, the crucial relationship is not simply the magnitude of the ratio of saving to income, but the form saving takes[3]. The diversion of current income to the accumulation of land, cathedral, precious metals or inventories will not generate a rise in future productive capacity. It is the particular set of assets that are accumulated which is critical for growth. Financial assets play an important role in the growth process by facilitating the transfer of purchasing power from surplus

---

2. Juster, T.F. and Taylor, L.D. (May 1975)
3. Moore, B.J. (1968)

to deficit spending units to finance real capital formation.

In empirical studies we find that the effect of interest rates on saving is not clear[4] and therefore the conclusion reached is, that it is not an important variable determining this function. If on the other hand composition of saving was also examined, then it might be that these rates effect certain components negatively and others positively, so that on aggregation the results are inconclusive[5]. To therefore disregard such variables on the basis of only saving function will be wrong, for in so far as they are diverting saving from one asset to another, they are performing an important role. Therefore in studying the behaviour of saving it is essential to study the portfolio behaviour also if the correct impact of each independent variable is to be known.

b) Present Approach Towards The Study of Portfolio Management : The problem of portfolio behaviour may be studied in the context of general optimising behaviour. Each economic unit (and here our consideration is 'household sector') is confronted with one or both of the following sets of decisions regarding its economic behaviour :

i) Income and Expenditure decision

ii)Asset holding decision.

Our study is directed towards analysing the asset holding decision of 'household sector' and what implication it has

---

4. Mikesell,R and Zinser, J. (March 1973)
5. Gupta, K.L. (1984)

on 'household saving' and growth of the economy during an inflationary phase.

There are two types of assets from which households have to choose. They are physical assets and financial assets. Expenditure on durable consumer goods and capital goods lead to an increase in stock of physical assets like transport equipment, land, building, machines etc. Similarly financial assets like cash deposits, securities etc are acquired during a period of time. At the same time claims on themselves are sold by these economic units for borrowing purposes. There are many financial assets available to the household sector, depending upon the financial structure of the economy. The commonly available financial assets are money, bank deposits, securities and other contractual commitments like provident fund, life insurance etc. The problem of holding financial assets is termed as 'portfolio behaviour' of an individual.[6]

Each type of asset has certain risk liquidity and rate of return associated with it. Cash e.g. is a liquid asset with zero risk and zero rate of return. Deposits are little less liquid asset than cash with zeroe risk and positive

---

6. The portfolio behaviour of an individual usually does not cover the physical assets because, as individual consumers most households have in their saving portfolio (in the developed countries) a sizable share allocated to financial assets. "For Germany, U.S., France and U.K. household acquisition of financial assets accounts for between ½ and 2/3 of the total financial asset flow during 1960-65"

interest rate, while securities are still less liquid assets than deposits with some risk and positive interest rate. An individual is assumed to have a preference pattern regarding risk and liquidity.[7] The problem of portfolio management is that of maximising utility from the asset holding subject to the constraint of total wealth. Prices of each asset and rate of return on it are determined by forces of demand and supply in a competitive market. Crude Keynesian analysis takes into account only two assets viz money and bonds, while Tobin and others have analysed a large spectrum of financial assets (Monetary economists analyse not only financial assets but physical assets as well). A structure of interest rates is determined by simultaneous system of equation involving equilibrium condition.[8]

Following Tobin a number of empirical studies have used stock adjustment models to explain the portfolio behaviour of the household. In these models, saving is viewed as a means of accumulating assets which perform specific function for the saver. Here the desired level of assets (A*) is a direct function of permanent income. Saving consists of a stock adjustment by which an individual closes the gap between

---

7. Tobin, J. (1965)
8. Tobin, J. (1971)

actual and desired asset holding i.e.

$$A_t^* = a_o + a_1 Y_{pt} \quad - \quad (1)$$

$$S_t = b_o (A_t^* - A_{t-1}) - (2)$$

$\therefore$ combining equation (1) and (2)

$$S_t = b_o a_o + b_o a_1 Y_{pt} - b_o A_{t-1} - (3)$$

where A_{t-1} is the actual holding of asset in period t-1, Y_{pt} is the permanent income, b_o is the stock adjustment coefficient and S_t is saving in period t.

In some studies A_t^* apart from being a function of permanent income dependson tastes and on a vector of returns on financial assets and other assets.[9] Empirical work has proceeded in this framework both along single equation models and simultaneous equation models. In the single equation models generally stock demand for individual assets is considered given the initial wealth, income and rates of return[10],

Recently there is a shift from single equation models to a simultaneous determination of both (i) individual asset demand functions and (ii) changes in net worth or saving function of the household sector[11]. In the latter framework too, total savingsof the household are determined,first independently

---

9. a) Motley, B. (August 1970)
   b) Ortmeyer, D.L. (April 1985)
10. Hamburger, M.J. (January 1968)
11. Ortmeyer, D.L. (April 1985)

of the asset holding of the household. Then these total saving along with rates of return on different assets, disposable income and the general state of disequilibrium of the capital account jointly determine the demand function for each asset.

As far as studies on saving behaviour of Indian Household[12] is concerned, they are all in the framework of single equation model. Thus the currently dominating approach to the demands for individual financial assets such as money, bonds etc. view the demands as problem of portfolio choice in a

---

12. a) Divatia, V.V. and Venkatalachalam (June 1972) - have estimated the components of money : currency, demand deposits and time deposits mainly to study the income and interest elasticity of these components and examine the substitutability between money and corporate securities in the framework of linear single equation model.

b) Lakdawala, D.T. and Mody, R.J. (1975) - have estimated the following categories of household saving : i) Financial Saving (ii) Demand deposits with Bank (iii) Time deposits with Bank. The Independent variables affecting these are income, Interest rates on deposits and yield on substitute assets mainly private securities. Other studies considering more number of assets of household are:

c) Pandit, B.L. (Jan.-June 1985)

d) Gupta, K.L. (1984)

e) Krishnamurthy, J. and Saibaba (1982)

general equilibrium framework given the total amount of wealth as 'investment balance'. The key feature of this approach following Keynes is that it divides the single problem of wealth accumulation into two independent but sequential decision problems: one of decision to save (or consume) and the other of asset choice of deciding the form of asset in which to hold additional wealth. The decision to save is assumed to precede the other decision. As such the latter decision is not allowed any opportunity to affect the former decision. To quote Tobin[13] "The key behaviour assumption of this procedure is that spending decision and portfolio decision are independent, especially that decisions about accumulation of wealth are seperable from decision about its allocation. As savers people decide how much to add to their wealth, as portfolio manager they decide how to distribute among available assets and debts, the networth they already have". This will not be necessarily so if the two decisions are coordinated in time or they are treated as two aspects of the same decision problem and not two separate decision problems viz if it is accepted from the very beginning that any decision to save necessarily implies a decision to add to net wealth in various forms and vice versa. This is the more "General Approach".[14]

---

13. Tobin, J. (1971)
14. Gupta, S.B. (January 1973)

The implication of the two alternative approaches: the portfolio balance and the general approach is: (1) Under the portfolio balance approach the sum of the net incremental demand for all kinds of assets from the ultimate owners of wealth must be equal to the predetermined amount of saving - this implies that (a) no amount of variation in quality, availability of financial assets, their desirability of holding can have any direct effect on saving because saving has been assumed to be a given datum for the problem of (incremental) portfolio choice (b) All assets in the portfolio of households are substitutes.[15] Thus under the general approach, it allows composition of saving to affect saving as the two are simultaneously determined under the overall budget constraint (i.e. Income) and not ahead and independent of the latter.

c) Inflation and Portfolio Behaviour of Households : Households as noted above choose a portfolio mix, that maximises their utility from them keeping in view liquidity, risk convenience, maturity period and rate of return. With inflation continuing for long periods and inflationary expectations built into the system; the uncertainty in general increases as a result households will not be indifferent to their portfolio mix.

Inflation may be viewed as a phenomenon in which the real rates of interest is continuously deteriorating. Here again it may be mentioned that yields on different assets are

---

15. O'Brien, J.M. (Nov. 1974)

differently affected by inflation.[16] Inflation has two depreciating effects that an asset may be exposed to (1) Capital effect : any asset which is priced or valued in money terms will depreciate in real terms through inflation (2) Income effect: Any asset which yields a money income stream will have that flow reduced in real terms by inflation; whether or not any asset is vulnerable to these depreciating effects will depend on the basic nature of the asset and its yield. Those assets which are valued in money and their returns too are in money are most Vulnerable. Next to these are those assets w whose capital is valued in money, but returns are non-monetary and then there are those assets whose capital is not valued in money, but its returns are in monetary terms. This third category is less Vulnerable than second one as income yield in any period is generally less than capital yield. The last category is where both capital and income are not in monetary terms and so these are inflation proof.

Just Vulnerability to inflation of an asset will not make it neccessary for its holders to lose on this asset. Any redistribution effect of inflation will depend on whether some method is available to compensate for inflationary depreciation. If it is there, then to what extent compensation is actually

---

16. There is a detailed discussion on how Inflation affects yields on assets' in Foster, J. (Feb. 1976). The above discussion heavily draws on this article.

made. The greater the compensation on an asset, the less the asset holder loses. The asset holder will be generally less affected (a) the more accurate his expectations are concerning inflation (b) his response to these expectations. Let us consider each asset step by step. From the characteristicsof the tangible and financial assets, we know that all financial assets are assets whose capital and income are valued in monetary terms, where as in tangibles, capital is valued in monetary terms but income is the services they yield. Of the financial assets,moneyas an asset,does not have a compensatory method; this is because the real flow of money services depends on the size of real money balances. Therefore just as the real value of money balances declines by the rate of inflation the real services yielded by money balances will also decline by the rate of inflation, in exactly the same way as would a stream of income fixed in nominal terms. For other financial assets like deposits - a compensatory method is available i.e. indexation. But this is an expost compensation device and it does not help to restore the loss in capital value of asset, but only income, therefore some redistribution is bound to take place. Similarly household will loose by holding contractual assets too as both the capital value and income falls. Only in case of equities nothing certain can be said, here both income and capital values,

can vary to compensate for inflation and therefore these are considered as a good'hedge' during initial period of inflation when the rates are low, uncertainties are less, so that firms' profitability is positively affected by inflation. But real assets like investment in real estate, gold, precious metals, commodity stocks, consumer durables - all these are good inflationary hedges. Thus under inflationary condition, asset holders to minimise their losses might shift to these inflationary hedges from other financial assets. As mentioned earlier uncertainties are associated with inflation so that household would prefer to hold short term assets vis-a-vis long term assets as they can be fairly certain of immediate return than distant future return in real terms. Inflation usually leads to emergence of black money,[17] which cannot be used like the other money in all assets. The existence of a parallel economy makes certain assets in household portfolio preferred ones. Thus the portfolio of household saving in conditions of continuous inflation does change.

3. Framework of Our Study :

In our study of saving, apart from inflation, the other variables affecting the asset demand functions are disposable income and the expected real rates of return on different assets.

---

17. Rao, V.K.R.V. and Others (1970)

a) The Model : It consists of three parts :

Part - A : Here we are examining the effects of independent variables like expected rate of inflation, disposable income and expected real rates of returns on different assets, on the composition and total saving of the household simultaneously. Thus we have departed from the standard portfolio theory's framework where savings are first determined and then these are allocated to different assets. All the components of saving and household saving are flow concepts referring to changes in asset holding of particular asset in question and to changes in assets and liabilities over a period i.e. one financial year. We have chosen flow variables as opposed to stock since we are analysing growth in the framework of Harrod Domar model, where flow variables affect growth.

The components of saving are all in the framework of single equation model; it has only independent variables affecting the behaviour of the household. The total saving function in its structural form is an identity equation. It is defined to be equal to the sum of its components. We are estimating the total saving function in the reduced form only as we are interested in total impact of the independent variables.

Part - B : Here we have examined the behaviour of incremental capital output ratio. The independent variables in the structural form are some components of household saving and inflation. This function is again estimated only in the reduced

form having the above mentioned independent variables which appear in the saving function also.

The estimation of the parameters of the reduced form equation is through ordinary least squares method. Our study covers the period of 34 years from 1951-52 - 1984-85

Part-C : From the analysis of part-A and B of the model, we know the effect of inflation on saving and incremental capital output ratio; combining these effects we conclude what is likely to be the effect of inflation on growth. The details of the model are explained in the next chapter.

b) Components of Household Saving : The breakup of total saving into different components is primarily based on the nature of our study. We have generally included in each of our components those assets that are similarly affected by inflation and have similar effects on growth. Thus our components of saving are :

i) Saving of Household in Liquid Asset (SLA) :

They refer to the assets in the form of currency and demand deposits. These are short term assets. They are likely to have positive effect on growth when their holding displaces commodity holding, but negative effect when it displaces other financial assets.[18] In inflation, the returns from holding these assets fall.

---

18. Rama Mohan Rao, T.V.S. (Jan. 1979)

ii) Saving of Household in Illiquid Asset (SILA) :

It includes saving in the form of (1) term deposits with all institutions (2) contractual savings like life insurance fund and provident fund and (3) certain other deposits like compulsory deposits covered under CDS (additional emoluments and income tax payers) scheme 1974. All these assets are of long term maturity. Their rates of return are likely to fall and can also become negative during inflation. Most of the interest rates on these are administered. Almost all these assets are likely to promote growth for these funds can be used for financing long term projects or for granting term loans which are generally used to increase the capital base.

iii) Saving in Assets where Funds Flow Directly to the Deficit Sector termed as Direct Investment (SDI):

It includes (a) loans and advances directly given by household sector to the corporate sector (b) Small saving schemes of government of India like saving deposits with post offices, National development bonds, gold bonds etc. and (c) Investment in securities - ordinary shares, debentures etc. of corporate and financial intermediaries and government securities, units of Unit Trust of India. Here we are not certain of how the returns are likely to behave during inflation, but these have positive effect on growth.

iv) Saving in Consumer Durable Assets (SCD) :

It consists of expenditure incurred by household to own such consumer durables as furniture, furnishing, household

equipment etc. and personal transport equipment.

v) Saving in Physical Assets (SPA) :

It includes net addition to physical assets of household comprising of net investment in construction, Machinary and Equipment and stocks.

vi) Negative Saving in the Form of Liabilities Incurred by Household or Household Borrowing (SB) :

These include financial liabilities incurred by household, by borrowing from banks, other financial institutions, government and corporate sector. It also includes net Trade Credit/Debt. The real costs of borrowing these funds are likely to fall as these too are administered and many a times linked to the deposit rates of the institutions. Their effect on growth is likely to be negative for any increase in these is first likely to decrease the flow of funds to deficit sector. The effect on growth can be positive, provided these borrowings are financing growth promoting assets of household sector like machinery and equipment in unincorporated sector and in agriculture.

All the components of saving and household saving are taken as proportion to household's disposable income. The absolute magnitudes of these are not taken because what matters in the process of growth are the different proportions and relative rates of growth in these assets over time. We are studying household saving behaviour and components of saving behaviour as these are the instruments for financing investment programmes.

Looked at it from the point of view of financing investment, it is neccessary that all the componentsand household saving be estimated at constant prices, for how much saving generates growth is very much dependent on how much of real investment does it support.[19] Therefore each of the components has been deflated by an implicit price index no. The base year choosen for deflating these series is 1970-71 for which the data is available. The details of deflating the series are explained as appendix to this chapter.

c) Inflation : Its Expected Effect on Composition of Saving and Incremental Capital Output Ratio : Inflation as already noted above by changing the relative yields on assets, by increasing uncertainty and generating black money is likely to make a few assets more attractive in the household saving portfolio. In response to this we expect the household demand for different assets to be different during inflation period as compared to stable price regime. Such household sector behaviour is likely to affect (1) the total flow of funds supporting the deficit sector investments. (2) The total saving of the household sector itself. Each one of these will have a direct effect on growth.

If total flow of funds falls it implies that investment will have to be reduced as foreign savings cannot be relied on.

19. In the latter period especially after prices of capital goods have risen faster than general index. Thus saving at current prices support less capital investment in real terms. It is partly to do away with this problem that we have deflated the saving series.

It therefore means dependence on own capital to finance investment. Under such conditions, therefore the divergence between the ownership and the use of saving is reduced, i.e. the spending units resources are tied to its own current income. This directly imposes constraint on growth.

Another effect of inflation is that it is likely to divert savings from financial assets to physical assets and consumer durables; such asset holding especially consumer durables have a negative effect on the generation of future saving. An increase in the proportion of consumer durables, in households' changes in net worth would imply that consumption complementary to these consumer durables increases which reduces saving. These complementary consumption goods items mainly relate to their maintenance and associated expenditure like electricity with television, petrol with cars. Similarly due to uncertainties the utility from holding wealth decreases and so the desire to hold wealth falls which may lead to higher consumption and lower saving and growth. On the other hand, wealth owners, when they find their real value of wealth falling might increase their saving to maintain this desired amount. So that uncertainty can either increase or decrease saving depending on how households react. It is quite likely under our conditions where consumption standards are not too high, that households in inflationary conditions may not reduce consumption; rather due to

recurrent shortages of even essential goods, the household may purchase and store well ahead of actual consumption, thereby reducing saving. Also composition of saving will have some effect on the composition of demand generated for current output, which in turn effects the composition of output produced e.g. a higher allocation to saving in consumer durables due to inflation changes the composition of output produced, which now favours output of consumer durables due to high expected profitability in this production. Such an output mix, favouring production of consumer durables has two effects (1) Most consumer durables require a sophisticated technology and therefore a higher capital labour ratio which implies raising general capital output ratio (2) By such diversion (in a capital scarce economy) capital is not available to more important industries : infrastructure and capital goods industries, so that inflation effects via the portfolio effects do not appear very encouraging on the growth process.

d) Inflation and Growth : The effects of inflation on growth are analysed in the framework of Harrod Domar model. If inflation (1) Increases saving ratio and simultaneously reduces incremental capital output ratio, then inflation definitely promotes growth. (2) Increases saving ratio and simultaneously increases incremental capital output ratio, then the statistical impact of inflation on each of these two

functions will be examined. If the statistical effect of inflation on saving is greater than that on incremental capital output ratio, then inflation will lead to higher growth rates. (3) Decreases saving ratio and simultaneously decreases incremental capital output ratio then again the statistical impact of inflation on each of these two functions will be examined. If the statistical effect of inflation on saving is greater than that on incremental capital output ratio i.e. it decreases saving more than it decreases incremental capital output ratio then inflation will lead to lower growth gates. (4) Decreases saving ratio and simultaneously increases incremental capital output ratio; then inflation definately reduces growth rate.

4. Concepts and Definitions:

a) Household sector comprises of individual non-corporate business and non profit private institutions. This definition of household sector in India is broad. It includes economic units in the country which cannot be classified as either belonging to government sector or to private corporate sector, including cooperative institutions or the foreign sector. Thus besides the 'pure' household as we commonly understand in their role as consumers, the household sector includes a sizable segment of household engaged in unincorporated business as also the private 'non profit institution'.

'Pure household' have different motives for saving as opposed to motives of saving by business household and others

included in the household sector. The latters' motives are interwoven with their opportunities for investment while for the former it is the precautionary, transaction and asset motives for saving. In advanced countries unincorporated business enterprises are few and this sub sector contributes a negligible proportion to the domestic income, saving and investment. But in the Indian case these types of enterprises form a significant portion in the economy.[20] Even if agriculture is excluded this subsector makes a significant contribution to domestic production. Logically therefore the saving hypothesis of Keynes (Absolute Income hypothesis), Friedman (Permanent Income hypothesis), Modigliani (Relative Income hypothesis) etc. are not strictly applicable to test the saving behaviour of household sector which comprises of a heterogeneous group, unless with the pure household motives for saving, 'profitable investment opportunities' too are taken into account as motives of unincorporated business in house hold saving. In empirical testing of saving hypothesis, the scope and relevance of saving estimates for such testing have very often not been examined at all.[21] The reason behind these two classes being clubbed together is more statistical in nature i.e. no seperate data are available to estimate the saving of unincorporated business enterprises.

---

20. The share of mixed Income in net domestic product (at current prices) is around 43%.

21. Gothaskar, S.P. & Venkatachalam, T.R. (October 1979)

The statistical results therefore may not be clear cut in empirical study. This is the limitation of our study as data on household used by us comprise of hetrogeneous group.

b) Saving : Saving of an economic unit can be estimated[22] from: (1) Income account as earned surplus which is the difference between current income and consumption. (2) Balance Sheet (Capital account) as an earned net worth which is the difference between changes in assets and liabilities.

By looking at the income account we merely get a measure of saving of the economic unit. It does not reveal anything regarding the destination of this surplus, which can be obtained only through an analysis of the pattern of assets and liabilities of the economic unit.

Therefore we have used the Balance Sheet approach according to which household sector saving is defined as :

Net saving of household = Changes in Assets of household - Changes in liabilities of household

Here assets include financial assets and physical assets. Financial assets comprise of currency, demand deposits, term deposits, investment in government securities and equities, provident fund, life insurance fund, while physical assets consist of investment in agriculture by household, construction of house and changes in stock by household. In the calculation of household physical assets, consumer durables are not

---

22. Gold Smith, R.W. (1955)

included. Among these durables are television, refrigerators, motor cars, scooters etc. Substantial household savings are used up in the acquisition of these items. Infact they are treated as 'assets' by many households. Sometimes liabilities are incurred to acquire these assets. In Indian conditions loans are not popular means to finance expenditure of household. Indian households prefer to internally finance rather than borrow. Most households do save in other forms, in order to meet their specific demands for consumer durables. The logic is the same as advanced by Mckinnon[23] with regard to complementarity between money and capital. Now complementarity may exist between financial assets and consumer durables also. It is therefore logical to treat expenditure on acquisition of consumer durables as investment and include it in our saving estimate; consumer durables expenditure includes expenditure on furniture, furnishing, household equipments and personal transport equipments, while changes in liabilities are borrowing of household as explained earlier. Thus net saving is the sum of net addition to existing stocks of financial and tangible assets and reduction of debt. An increase in aparticular asset need not necessarily imply an increase in net saving, since the increase in this asset may be at the cost of reducing another asset or may be from incurring more liability.

c) Personal Disposable Income : It comprises of personal income of individuals and households (i.e. non-government, non-

---

23. Mckinnon, R.I. (1973)

corporate sector) which is equal to wages, salaries, rents, dividends and interest that accrue to individuals or households and also all transfer payments received from government and business. Thus it is personal income minus direct tax payments made by individual household, which is equal to personal disposable income.

d) Rates of Return : The rate of return on any asset comprises of two components : (a) Return as income which is interest component (b) With changes in the capital value of the asset, there are corresponding capital gains and losses.

Most of the studies in the framework of single equation models of total saving or components of saving have used the concept of either nominal rate of interest or real rate of interest as the explanatory variable. The real rate of interest is defined as nominal rate of interest minus expected rate of inflation.

In our framework of analysis, where we are not just considering a few financial assets of the household, but changes in capital account of the household, all assets available to the households are included in our study, no matter what their proportions are in disposable income. Therefore the relevant concept for our purpose is not rate of interest i.e. income yield but real rates of return which comprises of income and capital yield. These rates are the objective rates on which, households could compare returns from different kinds of assets

notwithstanding their nature. All the rates of returns calculated are, in percentage terms and answer the following question. If an household invests Rs.100/- for a year in different assets what is the real rate of return that it expects on each one of these (i.e. making allowance for expected price rise). Returns are calculated on a year to year basis i.e. it is assumed that household invest only for one year. Details of the methodology adopted for calculating each rate of expected return on assets is given as an appendix to this chapter.

e) Inflation: It is clear from the series relating to actual rate of inflation, that India has not experienced continuously high rates of inflation. Also these low rates are not consistent, but have fluctuated widely from one year to another. Thus we have not faced steady inflation. In such circumstances it is natural that household would not by guided by recent price increase as the factor determining their choice. We also notice that though the rates of inflation are low and variable, yet they have been a regular feature for such a long time that households would be expecting some inflation; this is particularly so since the late 60's, when the rates have increased too.

In some studies[24] relating inflation to household saving, actual rate of inflation is taken as the explanatory variable. Inclusion of actual rate of inflation in our scheme

---

24. a) Diwan, R.K. (April 1968)
    b) Krishnamurthy, K. and Saibaba, P. (1982)

implies that households expectations about inflation are realised instantaneously. Expectations about prices are formed by households, according to how they perceive the past price trends and the perception of price trends by households is dependent upon the 'inflationary stimuli'.[25] Inflationary stimuli consists of past and current price increase as well as news about inflation appearing in newspaper or radios and televisions.

In India there could not have been strong inflationary stimuli on account of the following: (1) that price increases in the past have not been very high and steady; as a result household would have considered this phenomena as temporary especially before 1965. In the post 1965 period, the rate of inflation has increased and because it has continued for very long period some expectation of inflation is likely to be formed by households. On the whole as actual rate of inflation was not too high except for few years , so inflationary stimuli could never have been too strong (2) As the economy is not fully monetised some transactions are still materialised in kind (3) Due to low level of literacy households are not fully aware of price rise.

So that when we are considering a span of 34 years, it is reasonable to assume that households perceive of inflas a permanent problem, but still of a small magnitude; from

---

25. Muller, Eva (May 1959)

this we can conclude that there would be some lag[26] involved. So we have considered on the basis of the above an adaptive expectation model for price increase. Here expectations are dependent on the past behaviour of prices. Our expected price series is calculated by averaging the last five years rate of inflation.

5. Data Sources :

a) Dependent Variables :

i) Saving of Household Sector : The first attempts to estimate saving for the Indian union was made by group of research workers in the ministry of finance. Later two major studies in this field were however those of NCAER (National Council of Applied Economic Research) and RBI (Reserve Bank of India), which were started almost simultaneously. The first results of the NCAER study were presented in 1959 based on two approaches (a) aggregative approach (b) Survey Approach. Later on NCAER continued with the survey approach. The first RBI study was published in its Bullet-in of March 1960. These estimates covered the period 1950-51 - 1957-58. In these estimates an institutional approach was followed. The financial saving of the household was estimated through institutional approach, the physical assets of the households were estimated for the bench mark years and carried forward - the data source in this case was its survey of All India Credit and

---

26. Trivedi, M. (July-Dec. 1979)

Investment Survey of 1951-52 and follow up surveys conducted by RBI. An interesting feature of these estimates was the inclusion of changes in gold stocks with the household sector. Subsequently in 1961, these estimates were revised and estimates for 1958-59 were included. The third study in March 1965 further revised the earlier estimates and presented estimates for the period 1959-60 -1962-63. In this estimate gold holdings was excluded from saving estimates due to data problems. Since the publication of the third study in March 1965, the Reserve Bank of India has confined only to the estimation of financial saving of household. The Central Statistical Organisation which is responsible for releasing the official estimates of National Income and allied accounts for the Indian economy started releasing official estimates of savings only since 1969 though they pertain to 1950-51 and later years.

There are large differences in the estimates of saving that are released by these organisations. "The differences in the results arrived at by these three estimating agencies even though working with same data throw revealing light on the nature and extent of the non-random variabilities that are associated with the kind of estimation procedure adopted".[27]

---

27. Rudra, Ashok (1970)

The estimates of Reserve Bank of India are prepared in the framework of financial flow of funds accounts, where the disposition of savings in terms of borrowing sectors and instruments assumes greater importance. The NCAER estimates on the other hand are based on household saving survey and present a cross sectional analysis. The Central Statistical Organisation prepares its estimates as a part of national income accounting analysis and in the published results, the financial assets of the households are already netted against their liabilities.

Our objective is to study changes in assets and liabilities of the household sector with specific reference to inflation. Therefore, we are studying the behaviour of households as asset holders, which determines the flow of funds to the deficit sector and thereby growth also. In such a study therefore Reserve Bank of India estimates of saving in the framework of flow of funds is more suitable than the other two. Therefore the data base for our study of financial saving is the Reserve Bank of India estimates of household saving. As far as physical saving is concerned the estimates for these are not available from ReserveBank of India since 1965. As we are studying the portfolio behaviour of household, where physical assets are an important component and there are likely to be shifts from financial assets to physical assets and vice versa, data on household direct investment in assets such as machinery and equipment, construction and changes in

stock, which are its saving in physical assets are important. Central Statistical Organisation estimates these for each year as a part of National Income accounting analysis and presents figures on Gross Capital formation for a economy as a whole. A sectorwise breakdown into Government, private corporate and household sector of unadjusted gross capital formation is provided by Central Statistical Organisation. It is these estimates that we have used for our data base of household saving in physical assets. Regarding consumer durables, direct data are not available, so we have chosen "expenditure on consumer durables including expenditure on furniture, furnishing, household equipment etc. and personal transport equipment". The data for these items is taken from statements on 'Private consumption expenditure - at constant prices' published in National Accounts Statistics by Central Statistical Organisation.

ii)Incremental Capital Output Ratio: It has been argued that for underdeveloped countries, the concept relevant is average capital output ratio and not incremental capital output, as the latter is affected by fluctuations in agriculture sector output.[28] As opposed to average capital output ratio, we have taken incremental capital output ratio. This is because we are studying short term growth rates where fluctuations in incremental capital output ratio is likely to affect

---

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

the growth rates. The figures derived for incremental capital output ratio are : Net Investment at constant prices divided by net domestic product at constant prices. These are regularly published by Central Statistical Organisation in their publication "National Accounts Statistics". We have chosen net domestic product and not net national product because all through we have been assuming that the share of foreign sector is negligible and its effects therefore can be ignored.

b) Independent Variables :

i) Rates of Return : Regarding rates of return on financial assets the data source is essentially Reserve Bank of India. It publishes data on : rates of interest on its deposits, structure of interest rates, Index number of variable dividend, industrial securities and gross yields on industrial securities. Rates of return on consumer durables are derived from sub component of "Index number of wholesale prices". As physical assets include different components, to regard one particular rate as representative of this is very difficult. Under the circumstances return on stocks are best represented by inflation which is already an explanatory variable, therefore we have chosen rate of return on Residential dwellings as representative of return on physical assets. The data source for these is Central Statistical Organisation publication, National Accounts Statistics. The details about its calculation are given in the

appendix. Interest on borrowings refers to the rate of interest charged by commercial banks/cooperative banks for short term financing of working capital to farmers. The rates of return on gold are obtained from the 'Spot prices of gold' published by Reserve Bank of India.

ii)Inflation : For prices we have used price index of wholesale prices with 1970-71 as base. This index was preferred to consumer price index for non manual employees because (1) the latter are with the base year as 1960 = 100, whereas our series is with the base year as 1970-71. (2) The latter index no's in their calculations use as weights only those commodities which are consumed by the consumers whose income is less than Rs.750 per month. Most of the saving will be coming from households whose income is greater than this and therefore this will not be the appropriate index that our household face.

The choice of wholesale price index also has certain limitations : it does not include the prices of services which is an important item of consumption; secondly these are wholesale prices and not retail prices that household actually confront. To the extent retail prices are higher and more volatile than wholesale index, our series is an underestimate of the actual inflation. The series is directly taken from Chandhok, H.L. "Wholesale price Statistics India 1947-1978", which is derived from index number of wholesale prices.

6. Estimation of Variables :

a) Financial Saving[29]:

i) Approach of Reserve Bank of India : The economy is divided into the following sectors:

A) Banking Sector comprising of Reserve Bank of India, Commercial banks, Cooperative banks and Credit Societies.

B) Other financial institutions comprising of financial and investment companies including The Industrial Credit and Investment Corporation of India, Industrial Finance Corporation of India, The Industrial Development Bank of India, State Financial Corporations and other institutions such as Life Insurance Corporate of India.

C) Corporate Sector : These are private and public limited companies and branches of foreign companies operating in India, engaged in manufacture and trade of goods. Also included are cooperative non credit societies.

D) Government Sector : It includes central government and state governments. Also included are departmental and non departmental commercial undertakings of central and state governments.

E) Rest of the World Sector

F) Household Sector: It is defined to include not only

---

29. This section is based on various issues of "Reserve Bank of India - Bulletin" dealing with flow of fund: (i) March 1967 (ii) July 1969) (iii) Feb. 1972 (iv) August 1975 (v) March 1980.

consumer sector, but non corporate non farm business, non profit organisation and thus covers residual items which could not be properly classified and allotted. The claims or liability of the household sector is obtained as a residual after elimination of claims of other sectors.

The data as published in flow of funds account of household, consist of the following asset holdings: Cash in hand; demand deposits; time deposits; deposits with non credit societies; investment in government and semi government securities; small saving; provident fund; life insurance fund; loans and advances; shares and debentures of banking sector, other financial institutions and corporate sector.[30]

ii) Adjustment in Data : The methodology in preparing the accounts of financial flows overall and sectorwise is by and large the same as followed in all its studies except for a few modifications arising from larger coverage, availability of fresh or additional information and changes in the basis of collection of data in case of some sectors. Whenever modifications are made Reserve Bank of India publishes estimates - both before and after modifications for the two consecutive

---

30. For details about how each component is derived refer to the various issues of "Reserve Bank of India - Bulletin", op. cit.

years e.g. estimates before modification are available for the years 1960-61 & 61-62 from Reserve Bank of India Bulletinn March 1967 and after modification for the same years from July 1969 Bulletinn. As there are large differences in the estimates for these two years, to make the series comparable we have calculated the average percentage difference in the two years between the two estimates and then adjusted the earlier figures by this percentage change. Similarly one finds great differences between the estimates given in Reserve Bank of India Bulletinn of August 1975 for the years 1970-71 and 71-72 and those given in the Bulletinn of March 1980 for the same years. Again the same method is adopted and the earlier estimates are thus made comparable to the latter ones. For the years 1966-67 and 1967-68 when there are some modifications, we have not made any adjustment as the two estimates do not vary much. The adjustments are not made for each item as given by flow of funds accounts of Reserve Bank of India. We have made adjustments with respect to our categorisation of assets e.g. we have not adjusted currency and demand deposits seperately but the total of the two as this is the relevant measure of our study.

iii) Estimation of Saving in The Post 1976-77 Period: For the post 1976-77 period we have constructed householdsector saving in financial assets accounts from "Financial flow instrument wise and sector wise accounts" published in various

issues of Reserve Bank of India "Report on Currency and Finance".

iv) Bifurcation of Time and Demand Deposits : The break up of total deposits between demand and time deposits laid down in regulation 7 of Reserve Bank of India, Schedule banks regulation[31] 1951 "the maximum amount that was permitted to be withdrawn from the saving bank account without previous notice was regarded as a demand liability and the excess over the maximum amount as a time liability". Therefore as the regulation left it to the bank to decide what maximum amount the holders of saving deposit could withdraw from their accounts several banks reported all or larger of their saving deposits as demand liabilities. In October 1977, the Reserve Bank informed scheduled commercial banks that the manner in which saving bank deposits were being apportioned between demand and time liabilities was not realistic and that the average monthly minimum balances arrived at for crediting interest should be treated as 'time liability' with the rest as 'demand liability'. In our estimates from 1977-78 onwards we have continued with the apportioning between demand and time liabilities as was laid down before 1977 i.e. 14% of saving deposits are held as term deposits and the rest as demand deposits, this is to maintain consistency in the whole series.

The break up of bank deposits of household sector into demand and time deposits is done on the basis of results obtained

---

31. Reserve Bank of India - Bulletin, July 1981.

from ownership of bank deposits. The survey of 1976 is used for compiling this break up for the years 1974-75 and 1975-76, while that of 1978 is used for 1976-77, 1977-78 and the survey results of 1980 for the years 1978-79 and 1979 and 1979-80. As the last survey results available are only for March 1980, these are used for all the years till 1984-85.

b) Physical Assets : Household saving in physical assets consists of addition to construction, machinery and equipment and stocks. This is identical to the household sector investment.[32]

c) Consumer Durables[33]:

---

32. For a detailed discussion on how each of this components is derived refer to :
a) Central Statistical Organisation, (1980)
b) Raj, K.N. (1982)

33. Reference may be made to Section 4 (b)

APPENDIX - 2.1

RATES OF RETURN

Introduction :

For the preclassical writers 'interest is the income received by those who lend their funds and that interest rates are the effective yields on such invested funds'. For the classical writers, it is the price paid to the person to forgo present consumption and therefore should be greater than or equal to the marginal rate of time preference. It is the rate that makes the utility of a rupee today equal to or, smaller than the utility of the sum the consumer collects in a year if he lends the rupee and therefore it is a rate of discount.

Keynes[1] discussing the generalised nature of interest rates for every kind of capital asset wrote "there must be an analogue of the rate of interest on money .... Thus for every durable commodity we have a rate of interest in term of itself - a wheat rate of interest, a house rate of interest and even a steel plant rate of interest".

Writing in the same spirit Raj[2] wrote that where there is a difference between the spot and forward price of an asset, the asset can be regarded as having a rate of interest of its

---

1. Keynes, J. (1936)
2. Raj, K.N. (1958)

own, which can be expressed in terms of itself. What we call the money rate of interest is merely the % excess of the forward price of the sum of money over its spot price. In the backward rural economies the main forms of wealth besides money are gold, land and commodity stock. The own rate of interest on money and gold is its liquidity premium. The own rate of interest of land in terms of itself can be regarded in the first instance as, approximately equivalent to its yield (rental income) and the own rate of interest of commodity is the % difference between a given quantity of a commodity at a point of time and what is considered in exchange its equivalent at another point of time. As long as there is choice, asset holders will hold assets whose own rates of interest are the highest.

As land is scarce and not reproducible and demand for commodity is inelastic - both in short and long run, but supply while inelastic in short period is less so over long period, for these reasons there is no tendency in poor agrarian societies for the own rate of interest on commodity and land to decline under normal conditions and hence these are the assets preferred by the households.

During inflationary periods there is a tendency for the differential between the spot price and forward price in case of commodity stock and land to increase. Therefore the real returns on these assets increase. As interest rates on

financial assets are administered their real return falls. Thus when households are allocating their addition to wealth during inflationary periods, the real assets like commodity stocks, land, gold, consumer durables are likely to be preferred over the financial assets in general.

In case of a mixed developing economy like ours, where besides the traditional forms of holding wealth like land, commodity stock, gold and money, there coexist a set of financial assets likes deposits with banks, contractual savings, investment in securities etc. returns on which are generally administered. Therefore a household is confronted with a number of assets and has to make the choice of selecting a few in its portfolio. In this context an individual as an investor is primarily interested in comparative returns he receives from investment in various types of assets.

By returns on different assets we mean both (1) the interest income that holders of the asset get and (2) the capital appreciation/depreciation in the asset value.

All the returns here refer to the real expected rate of return on particular asset and are generally calculated as follows:

a) From the series of actual interest rate, we have constructed expected rate of interest that the household expects. These are constructed by taking the average of past five years, actual rate of interest.

b) Similarly from the series of actual capital appreciation or depreciation in a particular asset, we have constructed (whereever assets are subject to these gains/losses) the series of expected capital gain or loss.

c) For each year we have then added, the expected interest return and expected capital gain or loss - this gives us total expected nominal return on asset in a particular year.

d) To derive expected real rate of return on any asset, we have deflated the nominal rate of return by expected rate of inflation.

Presented below are tables explaining the source, adjustment and computation made in arriving at the expected real rates of return. All these rates of return pertain to a period of one year only and therefore we have assumed that each asset matures after one year, only.

A) Expected Real Rate of Interest in Unorganised Market:

Most of the interest rates on deposits are administered. To get some effect of free market rate of interest on our saving function, we chose Bazaar Bill rate; this too is subject to some ceilings, but it is not administered. This is the rate at which money lenders in the unorganised market charge the lenders, for the money that they lend. It is the rate at which bills of small traders are reported to be discounted by shroffs. These are unofficial quotations. Prior

to 1956, data relates to last friday and subsequent data provides range during the period. We have taken the average of the bazaar bill rate at Bombay, Calcutta and Madras. These rates are available in the basic source Reserve Bank of India "Report on Currency and Finance" till 1976-77. We have carried this series forward with the help of advance rate series for the latter years, as the latter had the maximum correlation coefficient (r^2) as compared to the other rates that are available.

The actual bazaar bill rate is adjusted for expected rate of inflation to arrive at the real baazar bill rate.

APPENDIX TABLE 2.2.1

ESTIMATES OF REAL BAZAAR BILL RATE FROM 1951-52 - 1984-85

Years	Bazaar Bill Rate	Expected Rate of Inflation	Real Bazaar Bill Rate
1	2	3	4
1951-52	10.91	9.3	1.5
52-53	11.71	4.9	6.5
53-54	11.26	1.4	9.7
54-55	11.21	- 0.5	11.7
55-56	11.12	- 2.7	14.2
56-57	11.10	- 1.2	12.4
57-58	11.40	1.9	9.3

Contd.....

APPENDIX TABLE 2.1.1 : Contd.

1	2	3	4
1958-59	10.77	1.8	8.9
59-60	10.76	3.9	6.6
60-61	10.57	6.2	4.1
61-62	12.72	3.5	8.8
62-63	12.82	3.6	8.8
63-64	13.33	4.1	8.8
64-65	14.07	5.5	8.2
65-66	15.70	5.7	9.4
66-67	16.60	8.5	7.5
67-68	17.35	10.0	6.7
68-69	17.86	8.5	8.7
69-70	17.61	7.1	9.8
70-71	19.12	6.7	11.6
71-72	19.62	5.0	13.9
72-73	18.61	4.7	13.2
73-74	20.37	9.0	10.4
74-75	20.71	13.3	6.5
75-76	21.98	12.0	8.8
76-77	23.40	11.3	10.8
77-78	24.47	10.3	12.8
78-79	23.30	6.3	15.9
79-80	25.90	4.7	20.2

Contd....

APPENDIX TABLE 2.1.1 : Contd.

1	2	3	4
1980-81	27.90	8.5	17.8
81-82	27.90	10.0	16.3
82-83	27.90	9.5	16.8
83-84	28.00	11.4	14.9
84-85	28.00	9.3	17.1

Source : Reserve Bank of India "Report on Currency and Finance" various issues

B) Real Rate of Return on Term Deposits :

The actual rate of interest on 1 year deposit are adjusted for the expected rate of inflation to arrive at the return on term deposit. We have not taken expected rate of interest, but actual rate of interest as household are aware of the rate of interest that is prevailing at the time of depositing their money. This rate is not likely to fluctuate much

APPENDIX TABLE 2.1.2

ESTIMATES OF REAL RATES OF INTEREST ON TERM DEPOSITS

1951-52 - 1984-85

Years	Rate of Interest on One Year Deposit	Expected Rate of Inflation	Real Rate of Interest
1	2	3	4
1951-52	1.6	9.3	- 7.0
52-53	1.7	4.9	- 3.0
53-54	2.3	1.4	0.9

Contd.....

APPENDIX TABLE 2.1.2 : Contd.

1	2	3	4
1954-55	2.3	- 0.5	2.8
55-56	2.6	- 2.7	5.4
56-57	2.6	- 1.2	3.8
57-58	3.3	1.9	1.4
58-59	3.6	1.8	1.8
59-60	3.5	3.9	- 0.4
60-61	3.7	6.2	- 2.4
61-62	3.6	3.5	0.1
62-63	4.0	3.6	0.4
63-64	4.0	4.1	- 0.1
64-65	4.0	5.5	- 1.4
65-66	4.6	5.7	- 1.0
66-67	6.0	8.5	- 2.3
67-68	6.0	10.0	- 3.6
68-69	5.9	8.5	- 2.4
69-70	5.5	7.1	- 1.5
70-71	5.5	6.7	- 1.1
71-72	5.6	5.0	0.6
72-73	6.0	4.7	1.2
73-74	6.0	9.0	- 2.8
74-75	6.0	13.3	- 6.4
75-76	7.7	12.0	- 3.8

Contd....

APPENDIX TABLE 2.1.2: Contd.

1	2	3	4
1976-77	8.0	11.3	- 3.0
77-78	8.0	10.3	- 2.1
78-79	6.3	6.3	0.1
79-80	6.0	4.7	1.2
80-81	6.6	8.5	- 1.8
81-82	7.0	10.0	- 2.7
82-83	7.5	9.5	- 1.8
83-84	7.5	11.5	- 3.5
84-85	7.5	9.3	- 1.6

Source : (1) Reserve Bank of India, "Bulletin" various issues publishing interest rate on deposits from 1958-59 onwards. (2) From 1951-52 - 1957-58 refer to RBI "Supplement to Banking and Monetary Statistics of India" Part II Table no.5 'Money rates Annual and Monthly 1950-51 - 1960-61".

All these rates relate to selected Major scheduled commercial banks category.

NOTE : The rates of interest chosen are the deposit rate, that commercial bank gives on the deposit of one year in fixed deposit. These rates are administered and so fluctuations are few. Whenever rates of interest have changed during the financial year, we have taken

the weighted average of the two interest rates, one before and the other after the change has occurred and the weights are the number of months they are actually relevant for.

C) Rate of Return on Consumer Durables :

It is very difficult to actually measure return on purchases of consumer durables, as it is an asset, whose yields are in the services it provides which are not easily measurable e.g. scooter or a refrigerator or furniture. All these assets give certain services to its owners which cannot be priced easily. As a first approximation therefore the return can be measured[3] as : increase in price of consumer durable as compared to general price rise. If the price of consumer durables are expected to rise faster than general prices then households would gain to purchase these consumer durables, because the services they yield are fixed for the same services, if one pays less than one gains. The series is derived as follows :

APPENDIX TABLE 2.1.3

ESTIMATES OF EXPECTED RATES OF RETURN ON CONSUMER DURABLES 1951-52 - 1984-85

Year	Index No. of Consumer Durable.	Percentage Increase in Price of Consumer Durable	Expected Increase in Price of Consumer Durable.	Expected Inflation	Expected Gain
1	2	3	4	5	6
1951-52	61.3	25.1	26.7	9.3	15.9

Contd...

3. Hamburger, M.J. (January 1968)

APPENDIX TABLE 2.1.3 : Contd.

1	2	3	4	5	6
1952-53	65.4	6.6	25.6	4.9	19.7
53-54	64.2	- 1.8	15.9	1.4	14.3
54-55	61.8	- 3.7	2.4	- 0.5	2.9
55-56	60.5	- 2.1	- 2.8	- 2.7	- 0.1
56-57	61.8	2.1	- 2.9	- 1.2	- 1.7
57-58	63.6	2.9	0.0	1.9	- 1.8
58-59	66.0	3.7	2.5	1.8	0.7
59-60	67.4	2.1	3.3	3.9	- 0.6
60-61	72.9	8.2	2.9	6.2	- 3.1
61-62	73.2	0.4	5.1	3.5	1.5
62-63	74.7	2.0	4.3	3.6	0.7
63-64	79.7	6.7	1.2	4.1	- 2.8
64-65	81.1	1.8	4.4	5.5	- 1.0
65-66	84.0	3.6	4.2	5.7	- 1.4
66-67	91.4	8.8	2.7	8.5	- 5.3
67-68	95.2	4.2	6.2	10.0	- 3.5
68-69	95.6	0.4	6.5	8.5	- 1.8
69-70	97-7	2.2	2.3	7.1	- 4.5
70-71	100.0	2.4	1.3	6.7	- 5.1
71-72	107.5	7.5	2.3	5.0	- 2.6

Contd....

APPENDIX TABLE 2.1.3 : Contd.

1	2	3	4	5	6
1972-73	116.4	9.2	4.9	4.7	0.2
73-74	124.0	6.5	7.9	9.0	- 1.0
74-75	156.8	26.5	7.4	13.3	- 5.2
75-76	170.8	8.9	16.5	12.0	4.0
76-77	168.1	- 1.6	17.7	11.3	5.8
77-78	171.8	2.2	3.7	10.3	- 5.9
78-79	186.6	8.6	0.3	6.3	- 5.6
79-80	229.2	22.8	5.4	4.7	0.7
80-81	263.0	14.7	15.7	8.5	6.7
81-82	298.0	13.3	18.8	10.0	8.0
82-83	308.7	3.5	14.0	9.5	4.1
83-84	307.4	- 0.4	8.4	11.4	- 2.7
84-85	323.6	5.3	2.5	9.3	- 6.2

Source : (1) Chandhok, H.L. "Wholesale Price Statistics, India 1947-78", Economic and Scientific Research Foundation, New Delhi.

(2) "Index Number of Wholesale Prices".

NOTE : The Prices of consumer durables are the prices of transport equipment, a sub category of consumer durables.

The Expected rate of increase series is obtained as follows: from the index no. of consumer durable, we

obtained the percentage increase in price of consumer durables. Consumers are likely to be affected more by recent prices of consumer durables. Therefore their expectation about consumer durables' prices, is based on the actual increase in the prices of consumer durables for only last two years. This expected increase in consumer durable prices are then adjusted for expected rate of inflation to arrive at expected gain or loss.

D) Rates of Return on Direct Investment :

In the Direct Investment Category, we have included various assets and it is difficult to identify the representative return. We have chosen return on variable dividend security, as the return with respect to this category, because we wanted to study the effect of capital market on savings of household. The alternative was post office saving rate, but as this moves closely with bank deposit rates we did not consider this. The rates of returns are given below:

APPENDIX TABLE 2.1.4

ESTIMATES OF EXPECTED REAL RATES OF RETURN ON INDUSTRIAL VARIABLE DIVIDEND SECURITIES 1951-52 - 1984-85

(1970-71=100)

Year	Index of Security Price Spliced 70-71 = 100	Actual Capital Gain	Yield on V.D Security (Gross) %P.A.	Realised Gain Current Prices	Expected Return at Current Prices	Expected Inflation	Expected Return Constant Prices
1	2	3	4	5	6	7	8
1951-52	73.0	2.8	7.5	10.3	- 7.6	9.3	-15.4

Contd.....

APPENDIX TABLE 2.1.4 : Contd.

1	2	3	4	5	6	7	8
1952-53	61.3	-16.0	7.8	- 8.9	4.0	4.9	- 9.9
53-54	62.4	1.7	8.2	9.9	1.5	1.4	0.1
54-55	73.7	18.1	6.9	25.0	3.7	- 0.5	8.6
55-56	79.3	7.6	6.8	14.4	10.3	- 2.7	13.4
56-57	79.1	- 0.3	7.7	7.4	10.1	- 1.2	11.5
57-58	65.5	-17.2	9.5	- 7.7	9.6	1.9	7.6
58-59	70.6	7.8	8.9	16.7	9.8	1.8	7.8
59-60	80.1	13.5	7.6	21.1	11.2	3.9	7.0
60-61	88.5	10.5	6.9	17.4	10.4	6.2	3.9
61-62	94.7	7.0	6.7	13.7	11.0	3.5	7.2
62-63	92.5	- 2.3	6.9	4.6	12.2	3.6	8.3
63-64	86.2	- 6.8	7.0	0.2	14.7	4.1	10.1
64-65	84.5	- 1.9	6.9	5.0	11.4	5.5	5.6
65-66	75.3	-10.9	8.1	- 2.8	8.2	5.7	2.4
66-67	78.7	4.5	7.7	12.2	4.1	8.5	- 4.1
67-68	75.3	- 4.3	8.2	3.9	3.8	10.0	- 5.6
68-69	80.2	6.5	6.8	0.3	3.7	8.5	- 4.4
69-70	91.1	13.6	5.7	19.3	3.7	7.1	- 3.2
70-71	100.0	9.8	5.5	15.3	6.6	6.7	- 0.1
71-72	95.1	- 4.9	6.5	1.6	10.2	5.0	5.0
72-73	96.4	1.4	6.9	8.3	4.7	4.7	3.2
73-74	114.6	18.9	5.6	24.5	8.9	9.0	- 0.1

Contd....

APPENDIX TABLE 2.1.4 : Contd.

1	2	3	4	5	6	7	8
1974-75	112.5	- 1.8	3.8	2.0	13.8	13.3	0.4
75-76	97.3	-13.5	5.4	- 8.1	10.3	12.0	- 1.5
76-77	103.9	6.8	6.1	12.9	5.7	11.3	- 5.0
77-78	107.4	3.4	6.8	10.2	7.9	10.3	- 2.2
78-79	130.4	21.4	5.7	27.1	8.3	6.3	1.9
79-80	143.2	9.8	5.8	15.6	8.8	4.7	3.9
80-81	159.7	11.5	5.9	17.4	11.5	8.5	2.8
81-82	191.7	20.0	5.5	25.5	12.4	10.0	2.2
82-83	180.8	- 5.2	5.9	0.7	15.5	9.5	5.5
83-84	198.0	9.6	5.2	14.8	17.3	11.4	5.3
84-85	212.6	7.4	4.8	12.2	14.8	9.3	5.0

Source : Reserve Bank of India: "Report on Currency and Finance" Statements on (1) "Index no of Security Prices-All India". (2) "Yields on Government and Industrial Securities - All India".

NOTE : A) Compilation of the Series:

(1) The Reserve Bank of India series of Index number of securites prices was first computed with Calender year 1938 as base. Since then the index was revised 4 times shifting the base to 1949, 1952-53, 1961-62 and 1970-71 (the details are given in Reserve Bank of India Bulletin : October 1949, August 1953,

June 1958 and October 1965). For the compilation of the current series with base 1970-71, price quotations from 5 principal stock exchanges viz. Bombay, Calcutta Madras, Delhi and Ahmedabad are used. The number of scrips included in the current index of ordinary shares is 356. In case of ordinary shares weights are proportional to the average market value of outstanding/ share capital of all the scrips belonging to groups/ sub groups and quoted on stock exchange as on March 31st, 1971. For details reference is made to November 1973 issue of Reserve Bank of India Bulletin.
(2) For our purpose we have spliced the series to make all the different index numbers with different base years comparable. We have converted all these different base year series into 1970-71 base year. The linking of various series is done by common period/interval after which the new series is finally adopted. (3) The yield series is complementary to the series on index no of security prices. In case of ordinary share, the yield on a scrip is taken as gross dividend declared or paid, expressed as a percentage of the average price of the share during the month. These too are available with different base years and like the earlier index have been converted to 1970-71 as base period.

Yields in case of 1952-53 series are not of tax, calculated by deducting tax at maximum rate (25%), and surcharge at 1.25% of Income upto september 1957 and at 5% thereafter, while the subsequent series are gross yields. To make the 52-53 series comparable to others we have converted the net figures into gross ones by adjusting for the taxes.

The yield figures are available from 53-54 onwards, so we have derived the figures for earlier years by taking next 5 years average as yield corresponding to the earlier year e.g. 1952-53 figure is derived by taking average from 1953-54 to 1957-58 and so on.

B) Calculation of Expected gain/loss:

(1) The percentage increase in each subsequent year in the index no of security prices gives us the capital gain/loss of investing Rs.100/-(column 3). Adding to this the yield rate on securities for that year (column 4) will give us the Realised gains (column 5 Appendix Table 2.1.4) at current prices. Then taking the average of last 5 years realised returns at current prices we get the series on expected return on current prices (column 6 Appendix Table above). This series is then adjusted for the expected rate of inflation, to get the expected return at constant prices, which is our measure of real yield on Industrial

variable securities.

E) Rates of Return on Physical Assets :

The return on residential dwellings would include (1) rents that owners get from ownership of houses and (2) capital appreciation in property due to increase in cost of construction and value of land during a given year.

Therefore we have to consider rent and the increased value of stock of housing at current prices to get the absolute return. When we divide this aggregate by the stock of houses at current prices, we get what we want namely the return on housing during a given year.

For this we need data on gross rent and housing stock at current prices[4]. Below is given table on housing stock in the post 1975-76 period.

APPENDIX TABLE 2.1.5(A)

ESTIMATES OF HOUSING STOCK AT CURRENT PRICES 1975-76 to 1983-84

(Rs. Crores)

Year	Gross Capital Formation in Residential Dwellings		Implicit Price Index	Percentage increase Price Index	Residential Stock
	Current Prices	Constant Prices (70-71=100)			
1	2	3	4	5	6
1975-76	1616	823	196.35		62776

Contd.....

4. B. Dholakia, (1980)

APPENDIX TABLE 2.1.5(A) : Contd.

1	2	3	4	5	6
1976-77	2488	1301	191.23	- 2.60	62731
77-78	3057	1576	193.97	1.42	65719
78-79	3340	1546	216.04	11.37	75460
79-80	3366	1331	252.89	17.05	90410
80-81	4100	1438	285.11	12.74	104504
81-82	4663	1411	330.47	15.90	123892
82-83	5330	1449	367.84	11.30	140930
83-84	6613	1641	402.98	9.55	158291

Source : (1) C.S.O. National Accounts Statistics Jan.1985 and Jan. 1986 : Statement on "Gross Domestic Capital Formation : By Industry of Use".

(2) Figure of 1975-76 is taken from B. Dholakia.

APPENDIX TABLE 2.1.5(B)

ESTIMATES OF RATES OF RETURN ON RESIDENTIAL DWELLINGS 1951-52 - 1983-84 (70-71 = 100)

(Rs. Crores)

Year	Residential Stock at Current Prices	Net Investment at Current Prices	Increase in Value of Stock	Rent (Gross)	Total Return	Actual Return
1	2	3	4	5	6	7
1951-52	9493	115	483	512	995	11.19
52-53	9471	45	- 67	504	437	4.60
53-54	9545	44	30	520	550	5.81

Contd....

APPENDIX TABLE 2.1.5(B) : Contd.

1	2	3	4	5	6	7
1954-55	9643	49	49	496	545	5.71
55-56	9944	62	239	519	758	7.86
56-57	10469	171	354	566	920	9.25
57-58	10963	76	418	596	1014	9.69
58-59	11933	117	853	639	1492	13.61
59-60	12442	145	364	666	1030	8.63
60-61	13131	98	591	707	1298	10.43
61-62	14205	108	966	739	1705	12.98
62-63	14762	71	486	790	1276	8.98
63-64	15401	80	589	874	1433	9.70
64-65	15890	105	384	933	1317	8.55
65-66	17918	297	1731	986	2717	17.10
66-67	19997	590	1489	1064	2553	14.25
67-68	21258	619	642	1111	1753	8.77
68-69	23579	783	1538	1170	2708	12.74
69-70	25959	932	1148	1247	2695	11.43
70-71	28752	590	2203	1350	3553	13.69
71-72	31096	751	1593	1460	3053	10.62
72-73	34936	679	3161	1588	4749	15.27
73-74	39350	1124	3290	1740	5030	14.40
74-75	53376	939	3087	1915	5002	38.12

Contd....

APPENDIX TABLE 2.1.5(B) : Contd.

1	2	3	4	5	6	7
1975-76	62776	743	8657	2085	10742	20.13
76-77	62731	1592	-1637	2486	849	1.35
77-78	65719	2092	896	2746	3642	5.85
78-79	75460	2264	7477	3135	10612	16.47
79-80	90410	2079	12871	3601	16472	21.82
80-81	104504	2572	11522	3922	15444	17.08
81-82	123892	2763	16625	4286	20911	20.01
82-83	140930	3029	14009	4782	18791	15.16
83-84	158291	3898	13463	5434	18897	13.40

Source : (1) 1951-52 - 1975-76 : B. Dholakia.

(2) 1976-77 - 1979-80 : C.S.O. National Accounts Statistics Jan. 1985 and

(3) 1980-81 - 1983-84 : C.S.O. National Accounts Statistics Jan. 1986 Statements (a) "Gross Domestic Capital Formation : By Industry of Use" and (b) "Value Added From Real Estate, Ownership of Dwelling and Business Services".

NOTE : The Change in the Value of Residential Stock (at current prices) over subsequent years is due to (1) Net Investment in Housing and (2) Capital appreciation in land and house. Given the figures on Net Investment;

from the changes in residential stock we can then derive the extent to which capital appreciation during the year has taken place (column. 4). The total return (column 6) is sum of : increase in the value of stock during the year (column.4) and Rent (column 5). This total return is on the stock existing at the end of the previous year/beginning of the present period. Therefore total return e.g. in 1975-76 is Rs.10742 Crores, this is divided by residential stock (Current prices) of previous year i.e. of 1974-75 which is Rs.53376 Crores. This in turn gives us a rate of return of 20.13% during 75-76. Since we are estimating the behaviour functions of household, which is guided more by expected return than actual return therefore we have constructed the series of expected return below:

APPENDIX TABLE 2.1.5(C)

ESTIMATES OF EXPECTED REAL RATES OF RETURN ON RESIDENTIAL DWELLING 1951-52 - 1984-85

(70-71 = 100)

Year	Actual Rate of Return on Residential Dwelling.	Expected Rate of Return	Expected Rate of Inflation	Expected Real Rate of Return
1	2	3	4	5
1951-52	11.91	7.46	9.3	- 1.68
52-53	4.60	8.20	4.9	3.14
53-54	5.81	7.60	1.4	6.11

Contd...

APPENDIX TABLE 2.1.5(C) : Contd.

1	2	3	4	5
1954-55	5.71	7.31	- 0.5	7.84
55-56	7.86	7.04	- 2.7	10.01
56-57	9.25	7.18	- 1.2	8.48
57-58	9.69	6.65	1.9	4.66
58-59	13.61	7.66	1.8	5.76
59-60	8.63	9.22	3.9	5.12
60-61	10.43	9.81	6.2	3.40
61-62	12.98	10.32	3.5	6.59
62-63	8.98	11.07	3.6	7.21
63-64	9.70	10.93	4.1	6.57
64-65	8.55	10.15	5.5	4.41
65-66	17.10	10.13	5.7	4.19
66-67	14.25	11.46	8.5	2.73
67-68	8.77	11.72	10.0	1.56
68-69	12.84	11.67	8.5	2.92
69-70	11.43	12.28	7.1	4.84
70-71	13.69	12.86	6.7	5.77
71-72	10.62	12.18	5.0	6.84
72-73	15.27	11.45	4.7	6.45
73-74	14.40	12.75	9.0	3.44
74-75	38.12	13.08	13.3	- 0.19
75-76	20.13	18.42	12.0	5.73

APPENDIX TABLE 2.1.5(C) : Contd.

1	2	3	4	5
1976-77	1.35	19.71	11.3	7.56
77-78	5.85	17.85	10.3	6.85
78-79	16.47	15.97	6.3	9.09
79-80	21.82	16.38	4.7	11.16
80-81	17.08	13.12	8.5	4.26
81-82	20.01	12.51	10.0	2.28
82-83	15.16	16.24	9.5	6.16
83-84	13.40	18.11	11.4	6.02
84-85		17.49	9.3	7.49

Source : See Table 2.1.5(B).

NOTE : The Expected Rate of Return (column 3) is derived by taking average of past 5 years actual returns (column 2). As data before 1950-51 is not available, for the earlier years these figures are derived by taking average of actual return for next 5 years. The series of Expected Returns during a given year is then adjusted for expected rate of inflation and finally we get the expected real rate of return.

F) Rates of Return on Gold :

In case of gold, only capital gain/loss is the return. There is no annual income derived from holding this asset. The percentage increase/decrease in the price of gold each year is the gain or loss. If the increase in the price of gold is

10% in a particular year, then nominal return on investment of Rs.100/- in gold is Rs.10%.

The Reserve Bank of India is regularly publishing in its "Report on Currency and finance" Statistical Statements relating to prices of gold and silver. Figures from October 1st 1960 are spot prices of gold quoted per 10 grams, instead of per tola. Earlier prices are converted by using the conversion factor 1 tola = 11.6638 grams. The figures over time are not strictly comparable as they relate in the beginning to Mysore gold, and from 14th July 1958 to July 31st 1959 to Abhyssimam gold; to Gold Bullion from 1st August 1959 to 27th August 1963 and to 14 carats gold from 28th August 1963 to 9th November 1966 and finally to standard gold from 10th July 1967 onwards. The only adjustment we have done is to convert 14 carats gold prices into 24 carats.

APPENDIX TABLE 2.1.6

ESTIMATES OF EXPECTED REAL RATES OF RETURN ON GOLD

1951-52 - 1984-85

(70-71 = 100)

Year	Price of Gold (10 grams)	Realised Return (Current Prices)	Expected Return at Current Prices	Expected Inflation	Expected Return Constant Prices
1	2	3	4	5	6
1951-52	93.5	- 3.9	1.7	9.3	- 6.95
52-53	75.5	-19.3	0.3	4.9	- 4.38
53-54	73.8	- 2.2	- 3.6	1.4	- 4.93

Contd....

APPENDIX TABLE 2.1.6 : Contd.

1	2	3	4	5	6
1954-55	76.5	3.6	- 5.3	- 0.5	- 4.82
55-56	82.2	7.5	- 4.6	- 2.7	- 1.95
56-57	89.6	9.1	- 2.9	- 1.2	- 1.72
57-58	93.0	3.8	- 0.3	1.9	- 2.16
58-59	96.1	3.3	4.4	1.8	2.55
59-60	103.7	7.9	5.6	3.9	1.64
60-61	114.9	10.9	6.4	6.2	0.19
61-62	121.3	5.5	7.1	3.5	3.48
62-63	117.7	- 2.9	6.4	3.6	2.70
63-64	108.5	- 7.8	5.0	4.1	0.87
64-65	118.0	8.8	2.8	5.5	- 2.56
65-66	133.3	12.9	2.9	5.7	- 2.65
66-67	143.7	7.8	3.3	8.5	- 4.79
67-68	156.9	9.2	3.8	10.0	- 5.64
68-69	160.5	2.2	6.2	8.5	- 2.11
69-70	179.6	11.9	8.2	7.1	1.03
70-71	184.9	2.9	8.8	6.7	1.97
71-72	200.2	8.2	6.8	5.0	1.71
72-73	242.1	20.9	6.9	4.7	2.10
73-74	369.2	52.4	9.2	9.0	0.18
74-75	519.1	40.5	19.3	13.3	5.30
75-76	545.0	4.9	25.0	12.0	11.61

Contd....

APPENDIX TABLE 2.1.6 : Contd.

1	2	3	4	5	6
1976-77	550.0	0.8	25.4	11.3	12.67
77-78	638.0	16.0	23.9	10.3	12.33
78-79	791.2	24.0	22.9	6.3	15.61
79-80	1158.8	46.4	17.2	4.7	11.94
80-81	1522.4	31.3	18.4	8.5	9.13
81-82	1719.2	12.9	23.7	10.0	12.45
82-83	1722.5	0.2	26.1	9.5	15.16
83-84	1858.4	7.89	22.9	11.4	10.32
84-85	1983.9	6.74	19.7	9.3	9.52

Source: Reserve Bank of India "Report on Currency and Finance" Statistical Statements "Prices of Gold and Silver".

The figures on Prices of Gold relate to average price of gold in Bombay per 10 grams. These are average of closing quotation for working days.

NOTE : From the series of prices of gold (10 grams) we have derived capital gain/loss incurred by household (column 3). The realised return is the percentage increase in price of gold, as compared to the year preceding it. The expected return (column 4) series is derived by taking last 5 years average of actual

return. These expected returns are then adjusted for expected rate of inflation to arrive at expected rate of return on gold (column 6)

G) Real Rates of Interest on Borrowing :

Households as we have seen incur liabilities to finance either current expenditure, capital expenditure or purchase of consumer durables. As the share of commercial banks in the total borrowing of household is substantial and these loans are primarily not for consumption purposes but for meeting the working capital needs of the farm household or/and small manufacturing plants in the unorganised sector. We have therefore chosen rates of interest charged by commercial banks on direct agricultural loans for working capital from 1968-69 onwards. Before this as the share of the cooperative banks is high in total borrowing, we have chosen rates of interest charged by cooperative societies on short term loans mainly for seasonal agricultural operations, purchase of agricultural implements, marketing of crops etc.

The data for the cooperative society is obtained from statistical statements relating to cooperative movement in India, and these rates are the rates charged by agriculture credit societies. The rates are available for different centres; we have chosen Bombay rates as this state's share in total primary credit is the highest. We have taken simple arithmetic

average of highest and lowest quotation.

As far as commercial bank rates are concerned we have taken them from 'Rates on advances" of State Bank of India. These rates are charged, on direct advances to agriculture on short term basis from 1969-70 onwards.

APPENDIX TABLE 2.1.7

ESTIMATES OF REAL RATES OF INTEREST ON BORROWINGS OF HOUSEHOLDS 1951-52 - 1984-85

(70-71 = 100)

Year	Rate of Interest	Expected Inflation	Real Rate of Interest
1	2	3	4
1951-52	8.6	9.3	- 0.64
52-53	8.6	4.9	3.53
53-54	8.6	1.4	7.10
54-55	8.6	- 0.5	9.15
55-56	8.0	- 2.7	10.10
56-57	8.0	- 1.2	9.31
57-58	7.9	1.9	5.89
58-59	7.0	1.8	5.11
59-60	7.8	3.9	3.75
60-61	7.5	6.2	1.22
61-62	7.8	3.5	4.16

Contd....

APPENDIX TABLE 2.1.7 : Contd.

1	2	3	4
1962-63	7.7	3.6	3.96
63-64	7.7	4.1	3.46
64-65	9.0	5.5	3.32
65-66	9.0	5.7	3.22
66-67	9.0	8.5	0.46
67-68	9.0	10.0	- 0.91
68-69	9.0	8.5	0.46
69-70	9.0	7.1	1.77
70-71	9.0	6.7	2.16
71-72	9.3	5.0	4.10
72-73	9.5	4.7	4.59
73-74	10.2	9.0	1.10
74-75	9.9	13.3	- 3.0
75-76	13.3	12.0	1.36
76-77	13.3	11.3	1.79
77-78	13.2	10.3	2.63
78-79	12.3	6.3	5.64
79-80	12.3	4.7	7.26
80-81	12.3	8.5	4.24
81-82	13.1	10.0	3.91
82-83	14.3	9.5	4.38
83-84	14.3	11.4	3.05
84-85	15.0	9.3	5.21

Source : (1) Reserve Bank of India "Statistical Statements relating to Cooperative Movement in India". 1951-52 - 1968-69.

(2) State Bank of India "Rates on Advances" 1969-70 - 1984-85.

NOTE : The actual borrowing rate (column 2) are adjusted for expected rate of Inflation to get the real cost of borrowing. As these are administered rates like time deposit ones, therefore households before taking the loans know the interest rate, therefore, here actual rather than expected rate is adjusted for expected rate of Inflation.

APPENDIX : 2.2

DEFLATORS

The variables included in our model are at constant prices. The reason for deflating the components of household saving and household saving itself is, that in the process of growth, saving is important because it finances real investment. How much real investment it really finances is dependent on real saving ratio, rather than nominal ratio.

All the different components could have been deflated by the same price index. As opposed to this we have used different deflators. The reason being that these are household saving behaviour functions, where our aim is not only to study the impact of saving on growth, but also to know the different factors that affect the saving behaviour of households. Therefore while choosing a particular index, it is necessary to know why a particular asset is held in the wealth portfolio of household.

Currency and demand deposit assets of the households, are mainly transactions balances held by the households, so the amount of real currency and demand deposit ratio that they would like to hold will primarily be dependent on the price of essential consumption goods and services for which these assets are held and on other factors like Income, taste etc. Therefore we have chosen implicit private consumption expenditure deflator to deflate this component.

Illiquid assets consist of time deposits, provident fund and Life Insurance fund. Most of these deposits are in the form of precautionary demand for saving i.e. these are usually used to either meet social obligations, uncertainties or build physical assets like houses or to purchase consumer durables. On the assumption that they finance other capital expenditure especially tangible assets, one could use construction index or consumer durable implicit price index to deflate these series. Instead we have chosew implicit private consumption expenditure index to deflate the series as these assets are also held to meet certain uncertainties. This index includes many items of precautionary demand, like medical expenses and other goods besides consumer durables.

Direct investment in securities and post office savings are also financial saving used either for precautionary purposes or with the aim of making speculative gains. We have deflated this also by implicit private consumption expenditure index.

The figure on consumer durables and physical assets are directly available at constant prices from central statistical organisation publication "National Accounts Statistics".

When all the assets at the constant prices are summed up we get our total saving of household at constant prices. Domestic saving is deflated by national Income deflator as it not only includes households saving, but corporate and government

saving as well. For purpose of estimation we have taken the ratio of domestic saving to net domestic product because we have assumed that the share of foreign transaction is small.

Disposable income of the household is deflated by implicit national income deflator.

The implicit index of private final consumption expenditure in domestic market is available only for the years 1960-61 - 1984-85. For the earlier years 1950-51 - 1959-60 these figures at constant prices are only available. As Net National product at market prices closely moves with the final consumption expenditure deflator in the later years, We have linked our earlier years' series for which data is not available to this index and arrived at the figures for the earlier period too.

The table below gives the implicit index used as deflators by us:

APPENDIX TABLE 2.2.1

IMPLICIT PRICE INDEX NUMBER

(70-71 = 100)

Years	Private Consumption Expenditure deflator	National Income deflator
1	2	3
1951-52	58.1	58.3
52-53	55.0	55.5
53-54	55.5	55.5

Contd.....

APPENDIX TABLE 2.2.1 : Contd.

1	2	3
1954-55	50.4	49.7
55-56	51.3	50.1
56-57	55.4	53.7
57-58	56.4	55.3
58-59	58.0	56.4
59-60	58.8	57.0
60-61	56.4	54.6
61-62	58.0	55.8
62-63	59.8	58.2
63-64	65.2	63.4
64-65	71.3	69.4
65-66	77.7	76.1
66-67	89.3	87.3
67-68	99.9	94.4
68-69	97.0	93.7
69-70	101.5	97.5
70-71	100.0	100.0
71-72	104.5	105.3
72-73	116.8	117.7
73-74	139.0	140.1
74-75	167.1	162.8
75-76	158.3	155.0

Contd....

APPENDIX TABLE 2.21 : Contd.

1	2	3
1976-77	163.5	165.8
77-78	171.6	172.6
78-79	178.2	174.6
79-80	203.1	201.9
80-81	221.7	222.7
81-82	243.4	241.6
82-83	259.5	261.0
83-84	285.8	286.4
84-85	299.9	303.7

Source : Central Statistical Organisation "National Accounts Statistics" 1986