Chapter 2

Theory of Income, Saving and Investment

2.1 Introduction

After introducing the research topic under study in chapter 1, researcher has reviewed related literature in Chapter 2; both the chapters have discussed the conceptual framework of saving investment behavior of the households in relation to their disposable income. Chapter 3 covered socio-economic background of the population, research methodology applied in conduct of this work and the present chapter 4 is devoted to theoretical background of the behavioral aspects of society in general with a view to test those theoretical predictions in the real world of savers and investors in the selected region.

2.2 Logic behind the theorisation of the topic

The basic idea of discussing the theoretical predictions is to test the validity of theoretical predictions in a real world of savers and investors from a small fraction of sample units from Nashik Municipal Corporation Area during a specific time period to trace the similarities and differences, if any, from the macroeconomic theory explaining the relationship between Y (income) C, (consumption) and I (Investment). The functional relationship between these variables as predicted in economic theory has been elaborately discussed. Motives behind saving differ from individual to individual depending upon their sex, family responsibilities, occupations they choose, socio-economic environment around them and so many other factors in such a way that there is a possibility of actual behavior may differ from theoretical predictions. All such parameters, other than money income also have to be covered in this study.

It is therefore apt to consider these variables affecting saving-investment behavior of the individual households and then arrive at an aggregative inference on the behavior. This chapter shall mainly focus on theoretical predictions and avenues of saving investment available to the households in general. Actual usage of these avenues shall be examined on the basis of sample households in chapters 5 and 6 that follow and the inferences drawn shall be summarized in concluding chapter 7.
2.3 Macroeconomic Theory of saving/Investment behavior

Macroeconomic theory predicts a straightforward positive correlation between incomes (Y), saving (S) and investment; saving and investment amounts tend to rise when income increases and fall with a fall in income. However, on micro level, when income of an individual increases, his consumption increases but not exactly in proportion to rise in his income but goes on declining as the income increases. Conversely, savings also increase with a rise in money income but in relation to income added, rate of saving goes on increasing with every rise in income. In Technical terms, a change in income leads to less than proportionate change in consumption, which is called {\text{MPC}}^1; marginal propensity to consume {\Delta C}/{\Delta Y} goes on decreasing as income increases and vice-versa. Marginal propensity to save is a change in saving in response to a change in income is defined as {\Delta S}/{\Delta Y} on the other hand shows a positive relationship with a change in income. MPS goes on increasing with increasing income and falls as income falls. These theoretical predictions will be tested on the basis of empirical data in chapters 5 and 6.

2.3.1 Aggregate demand (AD) and Equilibrium Output (EO)

Figure 2.1

Aggregate Demand, Aggregate Supply and Equilibrium Level of Income

Aggregate demand is the total amount of goods demanded by the people in any economy. Goods are demanded for consumption (C), investment by private sector (I), Government Investment (G) and Net Exports (NX). 

{\text{AD}} = C + I + G + NX

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The AD can be shown with the help of a figure given below:

In the above given figure 45° line which reads as AD = Y indicates that AD equals to the level of output at any point on the line. At point E, we find AS Curve and AD=Y curve intersecting with each other point that OP = AD at any situation prior to that will indicate that OP < AD and after that OP > AD In other words lU < 0 and lU > 0 respectively as shown in the figure which takes of either inventory falling short of demand or it is more than the requirement which will force the organizer to pile up stock of the output. So he will have to cut down the output in order to avoid the losses.

Equilibrium Output and National Income Identity

\[ \frac{AD}{C} + I + G + NX = Y \]

In the national income accounts, i.e. AD is equal to actual level of output (Y). If the firms produce output equal to ON1 In the figure OP< AD and of they produce to the level of ON2, OP > AD, so we can say that

\[ UI = Y - AD^4 \]

Where UI is unplanned inventory both ways and where

\[ Y = AD \]

It would mean planned inventory.

Consumption Function is the functional relationship between income and consumption expenditure denoted by (C) and Aggregate Demand (AD). In practice, we will never find Y and C equal, where Y is Income and C is Consumption.

People earning more Y will consume more than low Y group families. There is a positive correlation between Y and C. This is described as Consumption Function.

Consumption Function\(^5\): - Assuming that Consumption increases with the increase in Y

\[ C = \hat{c} + CV \quad \hat{c} > 0 \quad 0 < C < 1 \]

When the level of Y is zero \(\hat{c}\) is the minimum amount of consumption required by the households regardless of what is the level of income and from there onwards every increase in Y, the C also increases.

The coefficient \(C\) is termed as ‘Marginal Propensity to consume’ (MPC) i.e. with the increase in Y, C also will increase. But in practice, at a later stage we will not find the increase in Y equaling the increase in C/
2.3.2 Consumption and Saving (C) and (S)

When the Y increase but is not followed by increase in the C by the same proportion we will have savings (S) as income can be either spent (C) or saved (S) So the equation can be

\[ Y - C = S \]

Where Y is income, C is Consumption and S is savings

Definition of Savings: - \( Y - C \) is savings i.e. income minus consumption is savings.

Saving Function

Budget Constraints is putting the above two equations together i.e. Saving Function equation, where \( \hat{c} \) is autonomous consumption expenditure, even though the income is zero, that much consumption expenditure is a must.

\[ C = \hat{c} + CY \quad \hat{c} > 0 \quad 0 < C < 1 \]

And Saving Function equation \( Y - C = S \), we derive of a new equation

\[ Y - C = S = Y - \hat{c} - CY = -\hat{c} + (1 - C) Y^6 \]

Saving is an increasing function of the levels of income MPC is \( 1 - C = S \) is positive, in other words when the ratio between Y & C is 80:20. When Y increase by Rs. 100/- C only increase by Rs. 80/- and the balance Rs. 20/- is savings. Therefore one important factor of savings is level of Y.

2.3.3 Investment Function (IF)

For a lay man, investment means purchase of shares, bonds etc. but this is not real investment (inv) this is transfer of assets into another form. According to Keynes, investment is adding to capital equipment which leads to increase is Y and prod. Investment is adding to new plant and machinery, construction of dams, public work, roads building etc. this is making addition of existing stock of goods.

Capital refers to the assets like factories, plant, equipment and inventories i.e. the existing ones capital is a stock concept and investment is acquisition of real capital assets during the period of time. If a firm has a capital assets worth 100 Crore in 2010 March and in the following year i.e. March 2011 if the organizer adds 10 Crore the total capital will be 110 Crore.
If $I$ is investment, $K$ represent capital and $t$ time period (in year) then 

$$I_t = J_t - K_{t-1}^7$$

$K$ and $I$ are related to each by net investment. Gross investment is the total amount spent on new $K$. on the other side some $K$ wears out every year which is depreciation. So net $I$ is gross investment minus depreciation which is net addition to the stock of $K$ to the economy. If gross $I$ is equal to the depreciation then there is no addition to the economies $K$ stock. If gross investment is less than depreciation then it is equal to disinvestment. So gross investment is more than the depreciation it will add to the net investment.

### 2.3.4 Types of Investment

There are two Types of investment: Autonomous Investment and Induced Investment.

#### Figure 2.2

**Autonomous Investment Function**

- **Autonomous Investment** — It is the independent of level of $Y$ means not at all influenced by changes in income but is influential by factors like innovations, inventions, population growth, labour force, weather changes, war etc. influences the investment.

- **Induced Investment** — This is profit or income motivated price, wage and interest changes will affect profit and will influence induced investment.
When \( Y \) increases consumption demand increases will be followed by Autonomous investment. So, \( I = f(Y) \) this investment is directly related to income and is income elastic i.e. more the \( Y \) more will be the volume of \( I \). The induced investment may be further divided into two types –

**Average Propensity to Invest (API)**

**Marginal Propensity to Invest (MPI)**

**Average Propensity to Invest** – This is the ratio of investment to \( Y \) i.e. \( I/Y \). If \( Y \) is 50 Crore and \( I \) is 5 Crore then \( I/Y \) will be \( 5/50 = 0.1 \)

**Marginal Propensity to Invest** – This is the ratio of change in \( I \) to change in \( Y \) i.e. \( \Delta I/\Delta Y \). If \( I \) change by 2 Crore and \( Y \) changes by 10 Crore then \( \Delta I/\Delta Y \) will be \( 2/10 = 0.2 \)

**Factors Influencing Investment** – There are three important factors which will decide the Investment by a firm. These are –

- The cost of capital asset (\( k \))
- Expected rate of returns (\( r \))
- Market rate of interest (\( i \))

Keynes has consolidated all the above three into one and named them as Marginal Efficiency of Capital (MEC)

**Marginal Efficiency of Capital (MEC)** – This is the highest rate of return expected from an additional \( K \) over the cost to be paid for it.
If the supply price of K is Rs. 20,000/- and the annual yield is Rs. 2000/-, the MEC is 
2000/20000 X 100 = 10 per cent
Thus the MEC is per cent of profit expected from a give I on K asset
Keynes defines MEC as “Equal to the rate of discount which would make the present 
value of the series of given by the return expected from K asset during its life equal to 
the supply price”.
Equation is as follows

\[
SP = \frac{R_1}{(1 + i)} + \frac{R_2}{(1 + i)^2} + \frac{R_n}{(1 + i)^n}
\]

Here \(SP\) is supply price of K, \(R_1\), \(R_2\) and \(R_n\) are expected yields annually (years) 
1, 2 and \(n\), \(i\) is the rate of discount.
Therefore MEC is the rate of discount where equals the two sides of equation.
If the SP of a new K is Rs. 1000 and its life time is 2 years, it is expected to yield Rs. 
550/- in the first year and Rs. 605/- in the second year, its MEC is 10 per cent which 
equals the supply price to the yield of this K asset.

Thus,

\[
\begin{align*}
550 & \quad + \quad 605 \\
\text{Supply Price Rs. 1000} & \quad \frac{550}{(1.10)} \quad + \quad \frac{605}{(1.10)^2}
\end{align*}
\]

In the equation (1) the form

\[R_1\] is the Present Value (PV) of K asset 
\[\frac{1}{(1 + i)}\]
“PV is the present value for the payment to be received in ‘future’. It will depend upon 
Rate of Interest (R1) at which it is discounted.
Suppose we expect Rs. 100/- from a machine in a year’s time and the rate of interest is 5 per cent the PV of this machine is

\[ R_1 = \frac{100}{1 + i} = \frac{100}{1.05} = 95.24 \]

After two years, the PV will be

\[ R_2 = \frac{100}{(1 + i)^2} = \frac{100}{(1.05)^2} = 90.70 \]

The PV of a K asset is inversely related to the R.l. The lower the interest rate higher will be the PV and Vice Versa.

- If R.l is 5 percent the PV of 100/- will be 95.24,
- If R.l is 7 percent the PV of 100/- will be 93.45
- If R.l is 10 percent the PV of 100/- will be 90.91

This will help an organizer to take a decision whether to invest or not. If the PV of K exceeds its cost of buying one should take a decision to invest otherwise not.

The same result can be held by comparing MEC with the market R.l. If MEC of K is higher, then market R.l at which it is borrowed is worth buying K

**Figure 2.4**

Marginal Efficiency of Capital

The MEC Curve is negatively sloped. This indicates that higher the MEC lower the K stock. This is due to the law of diminishing return in production. In other words as there is a decrease in R.l Stock the K will increase.
2.3.5 Marginal Efficiency of Investment (MEI)\(^{14}\)

Marginal Efficiency of Investment is the rate of return expected from a given investment on a capital asset after covering all its costs, except the interest, lower the interest higher will be the investment and vice versa. So the MEI Curve also slopes downward from left to the right as shown in the figure given below –

**Figure 2.5 A and B**

Different slopes of MEC curves

![Investment Fig. A](image)

![Investment Fig. B](image)

Fig. A indicates the relationship between MEI and the rate of interest is less elastic and fig. B indicates more elastic.

Sometimes when there is reduced investment due to heavy profits then even without a change in interest rate, investment will increase as shown in the figure below.

**Figure 4.5**

![Investment Fig.](image)

2.3.6 Relation between MEC and MEI –

The MEC shows the rate of return of capital on existing stock. MEI shows the return on units of capital over and above the existing stock of capital. MEC is the stock concept.
while MEI is the flow concept. MEC determines the optimum stock of K at each level of interest rate. MEI determines the net investment of the economy at each rate of interest; Factors affected Induced Investment other than rate of interest.

1) **Uncertainty**: like general mode of business community, rumors, technical development, political events etc.

2) **Existing Stock of Capital Goods**: if it is large it would discourage the investors from entering the market. Induced Investment will not take place if there is excess or idle capacity in the existing stock of the K asset. If the plant is working to the full capacity only then the induced investment will take place.

3) **Level of Y**: if the Y increases in both wages and for other factors of production i.e. Rent, wage and R1 then there will be excess demand and will be followed by induced investment.

4) **Consumer Demand**: if the Consumer Demand increases due to the above mentioned point no. 3, it will also increase the induced I (Investment).

5) **Inventions and Innovations**: Technological inventions will decrease the cost of MEC will increase will be followed by increase in induced I. The same is true with the innovations which will open up in the new areas like transport, roads, housing etc.

6) **New Product**: if the sales prospect of a new product is high and so are high revenues the MEC will be high and will encourage MEI i.e. induced investment.

7) **Growth of Population**: More population will mean more AD so more induced investment.

8) **Government Policies**: Changes in fiscal policies will have a positive impact on the induced Investment i.e. if taxes are lower I will be also cheap power, credit facilities will increase I.

9) **Political Climate**: stability in the political atmosphere will always have an positive impact on induced I

**2.3.7 GDP and GDS relationship**

Theoretically speaking, there has to be positive relationship between gross domestic product and gross domestic saving because as the level of income increases, marginal propensity to consume falls progressively with a corresponding rise in marginal propensity to save. To test the validity of this theoretical prediction, official data on GDP
and GDS for the period 2004-05 to 2012-13 at factor cost as well as at market prices at current market prices has been tested in table 2.1 given below:

Table 2.1

Gross Domestic Product At market prices, Factor price at current prices. And Gross Domestic Saving

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<thead>
<tr>
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<tbody>
<tr>
<td>1</td>
<td>2004-05</td>
<td>3,242,209 (0.0)</td>
<td>2,971,464 (0.0)</td>
<td>1,050,703 (0.0)</td>
<td>763,685 (0.0)</td>
<td>327,956 (0.0)</td>
<td>435,729 (0.0)</td>
<td>212,519 (0.0)</td>
</tr>
<tr>
<td>2</td>
<td>2005-06</td>
<td>3,693,369 (13.9)</td>
<td>3,390,503 (14.1)</td>
<td>1,235,150 (17.6)</td>
<td>868,988 (13.8)</td>
<td>438,331 (33.7)</td>
<td>430,657 (-1.2)</td>
<td>277,208 (30.4)</td>
</tr>
<tr>
<td>3</td>
<td>2006-07</td>
<td>4,294,706 (16.3)</td>
<td>3,953,276 (16.6)</td>
<td>1,485,908 (20.3)</td>
<td>994,396 (14.4)</td>
<td>484,256 (10.5)</td>
<td>510,140 (18.5)</td>
<td>338,584 (1.0)</td>
</tr>
<tr>
<td>4</td>
<td>2007-08</td>
<td>4,987,090 (16.1)</td>
<td>4,582,086 (15.9)</td>
<td>1,836,332 (23.6)</td>
<td>1,118,347 (12.5)</td>
<td>580,210 (19.8)</td>
<td>538,137 (5.5)</td>
<td>469,023 (38.5)</td>
</tr>
<tr>
<td>5</td>
<td>2008-09</td>
<td>5,630,063 (12.9)</td>
<td>5,303,566 (15.7)</td>
<td>1,802,619 (-1.8)</td>
<td>1,330,872 (19.0)</td>
<td>571,026 (-1.6)</td>
<td>759,846 (41.2)</td>
<td>417,467 (2.0)</td>
</tr>
<tr>
<td>6</td>
<td>2009-10</td>
<td>6,477,827 (15.1)</td>
<td>6,108,903 (15.2)</td>
<td>2,182,338 (21.1)</td>
<td>1,630,799 (22.5)</td>
<td>774,753 (35.7)</td>
<td>856,046 (12.7)</td>
<td>540,955 (29.6)</td>
</tr>
<tr>
<td>7</td>
<td>2010-11</td>
<td>7,795,313 (20.3)</td>
<td>7,248,860 (18.7)</td>
<td>2,621,742 (20.1)</td>
<td>1,800,174 (10.4)</td>
<td>773,859 (-0.1)</td>
<td>1,026,315 (19.9)</td>
<td>620,300 (3.0)</td>
</tr>
<tr>
<td>8</td>
<td>2011-12</td>
<td>8,974,947 (15.1)</td>
<td>8,391,691 (15.8)</td>
<td>2,824,460 (7.7)</td>
<td>2,054,737 (14.1)</td>
<td>632,196 (-18.3)</td>
<td>1,422,541 (38.6)</td>
<td>658,428 (6.1)</td>
</tr>
<tr>
<td>9</td>
<td>2012-13</td>
<td>10,028,118 (11.7)</td>
<td>9,388,876 (11.9)</td>
<td>3,043,474 (7.8)</td>
<td>2,212,414 (7.7)</td>
<td>717,131 (13.4)</td>
<td>1,495,283 (5.1)</td>
<td>713,141 (4.0)</td>
</tr>
</tbody>
</table>

Source: Compiled from official sources of Government of India, financial reports of the respective years.

The table given above gives figures of the gross domestic product, gross domestic savings (GDS) classified further into few specific sub-groups of saving from 2004-05 to 2012-13. The year 2004-05 is considered as base year with the index value as 100. During the year 2005-06, GDP at current prices and GDP at factor cost increased by 13.9 per cent and 14.1 per cent when GDS increased by 17.6 percent. This supports the theoretical prediction that there is surely a positive relationship between GDP and GDS, however, the relationship is not necessarily proportionate, GDS rises at a higher rate than GDP. The same tendency is observed during the period from 2005-06 to 2007-08 Further there was an increase in the GDS was increased to 20.3 percent. During the year 2007-08 the GDS increased further to 23.6 percent. Unexpectedly the GDS came down abruptly to -1.8 percent and again during the year 2009-10 there was a sharp increase in the GDS to 21.1 percent but however this less than 2007-08. A further reduction in GDS was noticed during the year 2010-11 to 20.1 percent. During the next two years i.e. 2011-12 and
2012-13 a sharp drop in the GDS was noticed by almost three times, taking the GDS to 7.7 percent and 7.8 percent respectively.

In the same table we notice the Gross Domestic product (GDP) at current prices. The trend which was noticed regarding the GDS is also noticed in GDP keeping the base year as 2004-05 when the GDP at current prices was 0.0 percent. It increased to 13.9 percent in the year 2005-06. A further increase was noticed in the year 2006-07 when it went up to 16.3 percent. A marginal drop was noticed in the year 2007-08 to 16.1 percent. During the year 2008-09 the GDS was -1.8 percent but the GDP was 12.9 percent lesser than the previous year. During the next two years i.e. 2009-10 and 2010-11 an increase in the GDP was noticed to 15.1 percent and 20.3 percent respectively. But during the next two years i.e. 2011-12 and 2012-13 it reduced to 15.1 percent and 11.7 percent respectively.

We also notice in the table given above the figures regarding the GDP at factor cost at current prices during the year 2004-05 it was 0.0 percent increase to 14.1 percent in the year 2005-06. In the year 2006-07 a further increase in GDP at factor cost was noticed as 16.6 percent but during the next three consecutive years i.e. 2007-08, 2008-09 and 2009-10 a reduction in the GDP at factor cost was visible as 15.9 percent, 15.7 percent and 15.2 percent respectively. In the year 2010-11 this increased to 18.7 percent. We notice that both GDP at current prices and GDP at factor cost increased over the previous year i.e. 2009-10. And during the last two years i.e. 2011-12 and 2012-13 the GDP at factor cost reduced to 15.8 percent and 11.9 percent respectively.

My area of study is regarding household savings. This table also gives the information about household savings. The total household savings as par the base year 2004-05 is 0.0 percent. During the year 2005-06 it was 13.8 percent. In the year 2006-07 this increase to 14.4 percent and then during the year 2007-08 household sector savings reduced to 12.5 percent and increase in the household savings was noticed in the year 2008-09 to 19.0 percent. A further increase was seen in the year 2009-10 to 22.5 percent. Surprisingly the household savings in the next year i.e. 2010-11 dropped by more than half to 10.4 percent. During the year 2011-12 an increase was noticed as 14.1 percent. But again in the year 2012-13 the household sectors savings recorded by almost half over the previous year as 7.7 percent.
The household sector savings is normally divided into two as financial savings and savings in form of physical assets. Both the physical and financial savings in the base year 2004-05 was 0.0 percent. The financial savings during the year 2005-06 was 33.7 percent and savings in physical assets was -1.2 percent. During the year 2006-07 physical savings dropped to 10.5 percent but a sharp increase was noticed in the same year as 18.5 percent over the previous year. During the period 2007-08 financial savings was 19.8 percent and 5.5 percent as savings in physical assets. In the year 2008-09 financial savings dropped down considerably to -1.6 percent. But the savings in physical assets recorded abrupt growth to 41.2 percent. Then again there was a shift in the savings in financial forms as 35.7 percent and physical savings as 12.7 percent. In the year 2010 financial savings dropped down to -0.1 percent and physical savings increased to 19.9 percent over the previous year. In the year 2011-12 financial savings showed a negative growth -18.3 percent but the physical savings was almost double to 38.6 percent over the previous year. And finally in the year 2012-13 financial savings showed a positive trend as 13.4 percent and physical savings as 5.1 percent.

It can be noticed over here that the households take a decision to shift their savings from financial savings to savings in physical assets forms considering the market fluctuations on rate of interest, risk involved, attractive schemes declared by various players in the market and change in the government monetary and fiscal policies.

In the table given above we also notice the private sector savings. In the year 2004-05 it was 0.0 percent went up by 30 times to 30.4 percent. But it reduced by almost the same proportion in the year 2006-07 to 1.0 percent. Again a sharp increase was noticed in the year 2007-08 by almost 38.5 percent during the period 2007-08. Then in the year 2008-09 it came down to 2.0 percent and in 2009-10 the private sector savings increased to 29.6 percent. And the next three years i.e. 2010-11, 2011-12 and 2012-13 the private corporate sector savings were in single digits as 3.0 percent, 6.1 percent and 4.0 percent respectively.

Various Committees formed to Study the Savings of Household

There are three committees formed so far to study the savings made by the households (H.H). They are a) Raj Committee b) Chelliah Committee c) High Level Committee (HLC).
Other factors responsible to decide the rate of S: - a) Level of Y b) rate of interest, size of family. Larger is the size of family, lesser will be the amount of S d) Interval of Y earnings: - Smaller the intervals between earnings Y', smaller will be the per cent of savings of the families. Bigger the intervals larger will be the per cent of S. e) Level of Inflation in the economy, higher the per cent of inflation and longer the period it continues in the economy smaller will be the per cent of savings. f) Speculations in the H.H speculate a drop in price in future they will save today to be spent at latter day. g) Health conditions in the family if the in the houses is very stable then the quantum of the savings would be more. h) Various agents: - If various agents will appoint agents like postal agents, LIC agents, M.F agents, daily collection agents, etc. they will encourage in good amount of savings even for small amounts. i) Price of precious metals :- If the prices of gold, silver, platinum, diamond is high the rate of savings will be high j) Composition of the family:- If the parents have more female members than the male members then the rate of savings will be more so that the couple can take care of themselves with out-taking help of anyone

2.4 Avenues for Savings

There are a number of sources available today unlike in the past previously people and to save only in land, building, Gold, Silver, etc. Today number of avenues are opened like Bank of All forms, PSB, Private Banks, Cooperative Banks, Cooperative credit societies, Post offices recently have been given the permission to start to bank even big industrial house with some conditions applicable are allowed to establish banks, chit funds, mutual funds, LIC, precious metals, govt. bonds, land, building, Capital market, Money market.

There are various schemes adopted by various agencies to attract savings like:

Banks have various types of deposits in the form of savings a/c. F.D a/c, R.D a/c which suit the requirement of all the classes of all the society i.e. high Y groups and low Y groups.

Post Offices also provide R.D facility to their customers, F.D schemes or M/S scheme, savings a/c, various certificates like NSC, KVP, etc.
Capital Market is useful to those people who have large volumes of money and who are prepared to take risk. They may not want safe and sure returns. The I is either long term or of a permanent time.

Money Market is helpful to the small investors who would like to I for short terms are prepared to take small amount of risk.

Mutual Funds. - are meant for the people who are not ready to take risk to enter the capital markets but do have investable funds in small amounts. Over year they can get some assured returns and also incur some amount of risk. M.F do collect the money normally for the period of 10 years but the customer can withdraw his money after a lack in period of 3 years

Gold and Silver: - These metals have highest amount of liquidity and also they give good returns on investment/savings.

Govt. bonds: - They are the most trustworthy forms of I so the people will like to put their savings in govt. bonds. They also give some returns on maturity.

Chit Funds: - There are forms of savings normally to a small group which come together every month and save a part of their Y which can be as small as RS.100/- p.m. and get back their savings at the end of 12 months, 24 months, etc.

Land and building: - Due to the huge population always demand for land and building exceeds the supply this always increase the price so people will want to invest in this.

Life Policies: - This type of insurance as both public and private are available to those people who will want to invest for return and also will want to cover up their life risks.

2.4.1 Reasons for the Savings

There can be two important reasons that can be pointed out for savings by households. They are safety about the future and return of an investment in form of RI to compensate with the inflation prevailing in the economy when people can’t have good mobility, physical strength work in old days as they can in younger days. This is called as the savings for the rainy days.
The H.H factor plays a very important role in generation of savings in the economy. IILC was of the opinion that estimation of households, S is to be collected from number of sources including Apex Body.

The HLC focused on addressing the following TOR while dealing with H.H with H.H sec S.

1. To examine the possibility of estimating H.H savings through integrated Y and expenditure surveys.
2. In the light of higher growth path of the economy to undertake the review of the available estimates of H.H savings and I in economy.
3. To study if vigorous financial deepening in the economy is getting densely reflected in the estimates of financial savings and suggests improvements where ever needed.
4. To examine the flexibility of arriving at separate estimates for pure household, entrepreneurs and unincorporated bodies through a suitable method
5. To examine the empirical method and procedure used in the estimates based on the flow of funds and suggest improvements.
6. To suggest new database if any.

Approach Adopted By HLC to Examine the Estimation of Households in Saving

The worksheet approach where every item is examined with respect to:

I. Sources of data and underlined conceptual issue.
II. Methodology adopted for each parameter along with limitation and problem.
III. Prescribed procedure for estimation Identified in data and methodology.

The present practice is either the data on various Households' is obtained from induction institutions estimated HLCs was of the opinion that efforts should be made to keep the actual methodological practice in alignment with description with National Accounts Statistics (NAS).

All the apex bodies were directed to examine the Households from the following Points.

Identification of the database used.
Methodology prescribed in practice used.
Validation of data
Comment on changes required in procedure.
Discussions in meeting
Recommendations
2.5 Conceptual and Methodological Issues in Currency Held by Households

Currency is held by households and also by various agencies. At present a fixed ratio of 93.0 per cent of the currency held by public is used as households. There is a need to reexamine this periodically.

Raj Committee Recommendations – The amount of currency held by households we have to subtract currency held by private corporate business, co-operative institutions, Govt. undulating and Govt. treasurers and local authorities from the total currency.

The Chelliah Committee Recommendations – The Flow of Funds data reveals that the currency held by households is estimated to be 93 per cent of currency held with public which is obtained from monetary data for the last data of each financial year. The Chelliah Committee recommended that where the data is not available an average ration for the past three years should be applied.

Identification of Data Source – The data of total currency is got from DEAP, RBI which is used to estimate cash holdings with households

Methodology prescribed –

Household Savings is the form of currency is derived by misusing the currency held by Pvt. Corporate bodies, public sector enterprises from the total currency with public. The data of the total currency can be available in the R.B.I. Bulletin.

Discussions in the HLC Meetings – Two issues were mainly discussed

i. Including currency as a part of households’ holding

ii. Presently 93 per cent of currency issued is with the public as households’ holdings

On the first issue HLC stated that out of the households Currency holdings part may be used for present or future spending or may be used for speculation purpose they cannot be a part of households.

On the second issue, the currency ratio of households is currency as proportion of currency with public used as 93 per cent and the ratio was decided in 1985-86. So there is a need to revise the data to get the amount of savings with households as with the financial inventions the ratio can be of lower size.

HLC noted that to understand the amount of household saving, the census studies should be carried out of least once in five years as same companies grow and closure of camp will take place.
There are a large number of credit societies which are scattered throughout; this situation is likely to give upward trend of household saving.

The use of credit and debit cards ATM’s have put down the need of cash holdings so the ratio also will be at a lower side. Now a day, a lot of electronic transfer of funds takes place. There may be lesser use of cash holdings by households. There is a practice of reporting the data of flow of funds for all the sectors in some countries U.K., USA, Germany, France etc. there are practice for selling the flow of funds usually a fixed proportion is adopted.

There is no specific methodology used to find out the amount of savings by households accurately as lot of time and money will be involved in understanding that. So the latest flow of fund data may be used i.e. up to 2000-01 which exhibits an average of 93 per cent for house hold cash holdings.

The table given below shows that average households Currency holdings during the three years shows an average of 95 per cent of currency with public. [Table 6.4 from page 106 of RBI Bulletin April 2009]

2.5.1 Recommendation of HLC – The committee recommends that currency held by households as per the latest flow of funds data be considered for the purpose of estimating the currency component for the households’ sector savings.

Bank Deposits – Various banks like the commercial banks, co-operative banks, credit societies, cooperative non credit societies, private banks etc. are the main source of household savings.

Raj Committee - There is a need to classify the ownership of deposit so that a clearer picture of the sub categories called others including unclassified owned as much as 40.7 per cent and 32.1 per cent of commercial band deposit. In March 1976 and 1978 respectively and further clarity would be got if form households and nonfarm households and unincorporated.

2.5.2 Chelliah Committee Recommendations

For estimating the savings of households in commercial banks, aggregated deposits with scheduled and non-scheduled commercial banks are added. The data of scheduled commercial banks can be obtained from RBI Bulletin which is collected on last day of March each year and of non-scheduled, every Friday of March. The
aggregated is further classified into current savings and FD obtained from ex statement. Thereafter, N. R. I. deposits inclusive of interests are deducted to obtain domestic deposits.

The Committee made the following observations regarding BSR-4 Survey. The survey on ownership of deposits of commercial banks which was biennial is made on annual basis now.

**Identification Of Data** The data is obtained from division of money and banking, DEAP, RBI Form X data available from identification of data. Foreign currency obtained from N.R deposits, obtained from division of international finance department of the RBI. BSR Survey on composition of ownership pattern of scheduled commercial banks deposits DSIM, R.B.I.

**2.5.3 Methodology**

The share of household deposits in current, savings and FD is estimated on basis of RBI annual survey undertaken each year. The households consist of:

- Individual included (HUF)
- Trust association clubs
- Proprietary and partnership concerns
- Educational institutions
- Religious institutions
- Others

**Discussion in HLC Meetings**

The HLC noted that the data of SCBs are based on survey of composition and ownership of deposits conducted as part of BSR system (BSR4). A stratified sampling design is used for selection of branch banks. All the SCBs are first stratified state wise population groups like: Rural, Semi urban, Urban and Metropolitan.

Five Bank Groups are:

1. SBI and other associate banks
2. Nationalized Banks
3. RRBs
4. Other SCBs i.e. Pvt. Sector banks.
V. Foreign banks

After that, each stratum is divided into these groups

I. Up to 25 Crore.

II. 25 to 100 Crore.

III. 100 Crore and above

To form the ultimate strata all branches having deposits of 500 Crore and above are included in sample with currently. From the other deposit classes, sample is drawn using the (SRS) Simple Random Sampling Technique.

By making use of above procedure sample for March 2006 consisting of 10531 branches of SCBs out of total 68681 branches reporting as per quarterly BSR-7 return as March 31 2006 2759 branches each of Rs. 100 Crore deposits were chosen. These branches accounted for 44.8 per cent of deposits, 7772 branches accounted for 7.8 per cent deposits and 10531 branches covered 52.6 per cent of deposits. In case of states of Delhi and Maharashtra, where large branches with deposits above 100 Crore, at present, the share of deposits is higher than the population due to branches being included in sample within small states it is the opposite case.

The HLC recommended that NGOs should be treated as a separate category. The further it is also suggested that bifurcation of NRE deposits between savings and FDs is available with the monetary policy department of RBI. There is no need to apply a historical ratio to bifurcate this FCNR deposits can be taken as FDs.

2.5.4 Recommendations

RBI's annual survey on composition and ownership pattern of SCB bank deposits needs to be looked at for further refinement in terms of

Representative nature of sample

Margin of error

Reduction of time lag

The HLC recommended that NGOs, SHG, which are gained a good amount of importance today that they should be treated as a separate category under H.H

There is a need to standardize the database for the estimation of households by using consistently the March 31 figures in place of last reporting Friday of March which is available for every year with a time lag of 3-4 months.
Deposits with Cooperative Banks and Credit Societies

2.5.5 Raj Committee This committee has not given any specific recommendations on Chelliah Committee. The data on assets and liabilities of all the cooperative societies are published in statistical statements relating to cooperative moments in India

Part I – Credit Societies

Part II – Non Credit Societies by NABARD.

Deposits with primary societies are taken as households deposits while in the case of cooperative and other credit societies the households deposits are estimated using information available on ownership pattern which furnishes details of such deposits. Individual deposits are treated as household deposits and in the same fashion for non credit societies. The deposits are derived on the basis of households’ shares in total deposits. The flow of such deposits during a year represent house hold sector in such deposits. The data of non-credit societies the estimation of households’ Savings is worked out on the basis of available data. The data of households is got from Statistical Statement relating to Co-operative movement in India (NABARD). This is estimated on past trends in growth rate or some other judgmental basis where of non availability of those publications on time. Normally the time lag is 6 to 7 months. Due to this there is a small deviation from the procedure that is prescribed.

2.5.6 Discussions in the HLC Meeting

The HLC had no problems using the data received other than time lag problems. According to NABARD the data for the “Statistical Statement relating to the Co-operative Movement in India” is compiled on the basis of audited statements submitted by SCB’S, DCCB’s, SCARDB’s and ICB’s. They all are compiled and forwarded by respective agencies and the state level and national level. Consolidations fare each agency is done by NABARD. The data of primary credit societies and all non credit societies

The data is consolidated at the state level RCS i.e. Register of Cooperative Societies, Functional Register, Concerned directorates of states and finally the national level Consolidation is done by (NABARD) for each category of society.
There are total of 51 forms used to collect the data from various agencies like SCB’s/DCB’s/ICB’s/SCARDB’s/RCB’s on the recommendation of review along with the guideline to fill up the format. HLC was of the opinion that an effective & timely collection and competition of Cooperative statistics would only be possible if all the cooperatives will submit their report in one single format annually. The audit of societies should be done on time. HLC also suggested that provisional data should be submitted without delay with allowing some Correlation of a later date i.e. after final audit report.

At the bankers institute NABARD organized a meeting with RCB’s held at BIRD “Banker Institute of Rural Development”. The Chairman in the meeting kept on records that statistical data base of the co-operative Sector is very important for NABARD and RBI and Government and demanded a reduction in the time lag by not more than one year. In order to reduce time lag Dr. Shetty who was representing HLC recommended an action plan at RCB’s should depute suitable staff for the posting of data. It is being observed that there is a pattern of heterogeneity in the pattern of receipts of audited statements. In such cases also the time lag for submitting the reports should not be more than a year. The HLC is the opinion that NABARD may supply provisional estimate based on the test receipt position of co-operative data from RCB’s every year to RBI for households’ Saving and FOF’s and CSO’s for NI accounting as the estimates are to be prepared year after year in a time bound manner.

2.5.7 Recommendations

HLC recommended that NABARD should be involved in providing a projection to households’ ‘Savings in Co-operative Banks & Credit Society’s to get around the problem of considerable time lag in the publication such as “Statistical statement” relating to Co-operative movement in India for both , Credit & Non-credit Societies. Efforts should be taken to reduce the time lag.

NABARD should continue to play an important role as an open agency for the Co-operative Sector & provide Data for the compilation of National Accounts. Savings Estimate & FOF Accounts in so far as the Co-operative Sector is concerned, the NABARD should collaborate with National Federation of State Co-operative Banks (NAFSCOB)
(1) Deposits with Co-operative Non-Credit Societies:

The same problem as seen in the earlier case is also found here i.e. time lag & non-availability of publications on time. So past trends have to be used.

Discussions in the HLS meeting were also in time with that of the previous, i.e. for Co-operative Banks & Credit Societies so the same recommendations should be applied.

(2) Non-Banking Deposits

The Non-Banking Co-operative Financial & Non-Financial Government & Non-Government Companies & Electricity Boards accept public deposits as a part of their business.

Raj Committee: This is an important area of households’ saving as they give higher returns therefore it is imperative that steps are taken in the RBI to ensure adequate coverage of Non-banking Companies in the survey of deposits. Recently fully Government own Public Sector Companies started accepting deposits from the public. So Raj Committee recommended that RBI also should cover such type of households saving, Security Deposits kept with various improvement fruits, Housing Boards, Electricity Boards etc. They should be treated as Household savings.

Chelliah Committee: This Committee also wanted the security Deposits kept with Telephone Companies should be brought under the preview of households’ saving.

The data source can be collected from Public deposit data in respect to Financial Companies are obtained from the Department of Non-Banking Supervisions (DNBS), RBI, Housing Financial Companies from NHB, etc.

Methodology prescribed:

The NBFIS are classified into:
Registered & Regulated by RBI
Non registered with RBI, but RBI gives directives regarding Deposit acceptance
Exempted from RBI regulations
Under Category (I) Loan Companies, Investment Companies, Equipment using Companies, Higher Purchase Finance Companies
Under Category (II) Mutual Deposit Finance Companies like NIDHIS & Miscellaneous NBF, Chit fund Companies are included
Under Category (III) Insurance Companies, Stock Exchanges, Stock Brokers, Merchant Banking, Housing & Micro-finance Companies are included.

On the basis of DNBS survey, the ratio of Government & Non-Government, Non-financial Companies is calculated & the ratio is applied to Non-government Non-financial Companies. The share of households' saving in Total Security Deposits is worked out by allocating it on the basis of households share in total consumption of electricity.

The methodology for Non-banking Financial Companies is the same as per the prescription. Studies on finance of Public Limited Companies & Private Limited Companies by DSIM, RBI are not available on time. There is one additional problem that blow-up factor for arriving at the global figures from sample has not been available. With DISM for recent years so data is estimated on the basis of last 3 years & past trends in case with Electricity Boards.

**Trend and Composition of Gross Domestic Saving**

The Gross Domestic Saving (GDS) rate has exhibited a generally upward trend since the 1950's with some intermittent sharp escalations, notably over the period 2002-03 to 2007-08. The composition of GDS shows the continued predominance of household sector saving (at around 70 percent), notwithstanding a reduction in its share from the peak attained in 200-02 (over 94 percent).

After the 1990-91, the share of the private corporate sector in SGS has exceeded that of the public sector, in contrast to the trends prevailing earlier. These trends are explained in subsequent sub-sections.

**Contrasting Movements in the Saving of the Household, Private Corporate and Public Sector:-**

The rapidly evolving macroeconomic and policy environment has been associated with contrasting movements in the rates of savings of the household, private corporate and in the trends in the savings rates of the three sectors. While household savings has continued to account for the predominant share of gross domestic savings over the years, the household savings rate which has generally moved upwards at an increasing pace till 2003-04, generally leveled off thereafter at around 23 percent. In contrast, the private corporate sector saving rate which had remained nearly stable at around 2 percent up to
the 1980’s picked up subsequently and increased sharply after 2002-03 to over 9 percent by 2007-08, on the back of improved corporate profitability; the private corporate sector savings rate has hovered around 8 percent since then. The private corporate sector has remained vibrant and has benefitted from increasing consumption and investment demand arising out of consistently high economic growth. With robust sales growth improved productivity and healthy profit margin, corporate recorded good growth in profits which translated into higher saving. The public savings rate turned positive in 2003-04 and peaked at around 5 percent in 2007-08 largely reflecting the decline in public sector saving occurred in 2008-09 largely on account of the Sixth Pay Commission arrear payouts and fiscal stimulus measures, which persisted in 2009-10 with the public sector savings rate declining further to 0.2 percent.

It is noteworthy in this context that both public sector savings and private corporate sector savings improved substantially during 2000s is even as household savings rate plateaued somewhat.

**Trends in Household Sector Savings-Rate and composition:**

A striking feature of the 2000s is the general leveling off of the household savings rate at about 23 percent from around the middle of the decade in contrast to the upwards movement in the previous year (Table 3). Moreover, this leveling off occurred even as the economy generally cruised along a high growth trajectory (Barring a brief hiccup in 2008-09). The factors underlying the stability in the household savings rate are discussed next.

Total saving of the households comprises financial savings and physical savings. Financial savings are treated on a net basis i.e. household’s (change in gross) financial assets less their (change in gross) financial liabilities. It is evident from table 2.2 that while physical savings of the households increased.
Table 2.2

Average Trends in Household Savings As percent of GDP at current market prices

<table>
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<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
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<tr>
<td>1970s</td>
<td>6.0</td>
<td>1.5</td>
<td>4.5</td>
<td>7.3</td>
<td>11.8</td>
</tr>
<tr>
<td>1980s</td>
<td>8.9</td>
<td>2.4</td>
<td>6.5</td>
<td>7.2</td>
<td>113.7</td>
</tr>
<tr>
<td>1990s</td>
<td>11.2</td>
<td>1.6</td>
<td>9.6</td>
<td>8.2</td>
<td>17.9</td>
</tr>
<tr>
<td>2000s</td>
<td>14.2</td>
<td>3.4</td>
<td>10.8</td>
<td>12.3</td>
<td>23.2</td>
</tr>
<tr>
<td>2000-05</td>
<td>12.8</td>
<td>2.4</td>
<td>10.3</td>
<td>12.9</td>
<td>23.1</td>
</tr>
<tr>
<td>2005-11</td>
<td>15.5</td>
<td>4.2</td>
<td>11.3</td>
<td>12.2</td>
<td>23.5</td>
</tr>
</tbody>
</table>

Sharply during the first half of 2000s, the pace of increase in gross financial assets as well as gross financial liabilities slowed down. With the net financial savings rate resultanty showing a modest increase, most of the overall increase in the households' savings during the first half of the 2000s was on account of physical savings. The household sector's preference for savings in the form of physical assets since 2000-01 could be attributed partly to the robust economic growth as well as rising availability of credit to meet financing needs of the household sector.

During the second half of the decade, even though the gross financial savings (assets) and gross financial liabilities of the households increased sharply, the increase in net financial savings rate remained modest.

At the same time, the rate of physical savings declined partly in response to the tightening in credit norms, offsetting the increase in the financial savings rate. Consequently, the household’s overall savings rate remained largely unchanged (at around 23 percent) since mid-2000s.

Since the 1970s the allocation of household savings between financial assets and physical assets had been progressively moving in favour of the former, with the notable exception of the first half of the 2000s. The allocation became almost evenly balanced during the second half of the 2000s.
The extent to which household physical assets were funded through loans and advances increased sharply during 2004-05 to 2006-07, coinciding with the high growth phase and real estate boom. Subsequently, this ratio has declined.

**Evolving Structure of Households’ Gross Financial Savings:**

The composition of (changes in) the gross financial assets of households has also changed substantially over the years (Table 2.3)

- The share of currency has declined to around 11 percent during 2005-10 as compared with 14 percent in the 1970s reflective of the spread of banking facilities, the declining share of agriculture in GDP and moderation in inflation.

<table>
<thead>
<tr>
<th>Table 2.3</th>
<th>Composition of (Changes in) Gross Financial Assets</th>
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<tbody>
<tr>
<td>Period</td>
<td>Currency</td>
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<tr>
<td>-----------</td>
<td>------------</td>
</tr>
<tr>
<td>1 2 3 4 5</td>
<td>6 7 8 9 10</td>
</tr>
<tr>
<td>1970s</td>
<td>13.9</td>
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<tr>
<td>1980s</td>
<td>11.9</td>
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<td>1990s</td>
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<td>2000s</td>
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<tr>
<td>i)2000-05</td>
<td>8.9</td>
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<tr>
<td>ii) 2005-11</td>
<td>10.7</td>
</tr>
</tbody>
</table>

- **Bank** deposits continue to account for the predominant share of gross financial assets, with their share increasing sharply in the second half of 2000s in contrast to the declining trend in the previous years; part of the recent increase in the share of bank deposits could be attributable to the increase in deposits rate and aggressive deposit mobilization by banks.

- The share of life insurance funds continued to increase during 2000s, in line with higher insurance penetration and robust economic growth. As indicated in the Economic Survey 2010.

50
Life insurance penetration in the year 2000 when the sector was opened up to the private sector was 1.77 and it has increased to 4.73 in 2009. The increase in levels of insurance penetration has to be assessed against the average growth of over 8 percent in the GDP in the last five years.

The share of provident and pension funds has progressively declined over the years.

2.6 The Principle of Acceleration

The concept of ‘Accelerator’ refers to the number of times investment expenditure increases in response to a change in consumption expenditure under given set of conditions. In the process of economic growth, an increase in the level of income leads to an increase in consumption expenditure by households. If an increase in consumption expenditure is likely to continue in the long run, the capacity of existing capital equipment falls short of the requirements, investment in capital goods must be increased to fulfill additional demand for consumers’ goods. The required investment for additional output is much more than the change in the demand for consumers’ goods.

J.M. Clark (1917) introduced the term Accelerator Principal further it was developed by Hicks, Samuelson and Harrod.

Acceleration principal is based on the increase in the demand for capital goods as a result of an increase in demand for consumer. Whenever the consumers’ demand for consumer goods increases, it will be followed by increase in investors demand for capital goods. According to Kurihara, “The accelerator co-efficient is the ratio between induced investment and initial changes in consumption expenditure”:

Symbolically, $\beta = \Delta I / \Delta C$

Where $\beta$ is accelerator coefficient,

$\Delta I$ is change in investment expenditure and

$\Delta C$ is change in consumption expenditure.

If the consumers’ demand increases by Rs. 10 Crore, investors will have to increase their investment in capital assets say, by Rs. 40 Crore, in this case the value of accelerator is said to be 4.

2.6.1 Working of Accelerator
If the capital output ratio is assumed to be 5:1, it implies that to produce goods worth 10,000/- investment in capital goods required would be to the tune of Rs. 50,000/- or five times the change in initial change in consumer demand.

If $\Delta I$ is 10 Cr. and $\Delta C$ is 2 Cr. and accelerator it would mean that the value of Accelerator is:

$$a = \frac{\Delta I}{\Delta C} = \frac{10}{2} = 5$$

The acceleration principal is based on the following assumptions:

1) Capital output ratio in the economy remains unchanged.
2) The resources available are ample; there is no scarcity of resources enabling instant additional investment as and when needed.
3) The increase in demand for consumer goods is of payment nature, so that the investors are assured of their investment being fruitful.
4) Supply of Credit is assumed to be elastic.
5) There is no time lag between rise in net investment and increase in output.

Following are the limitations of the principal of acceleration:

1) We cannot expect a constant capital output ratio with the improvement in technology this ratio is bound to change.
2) The availability of resources is also a very vague assumption there can be shortage of resources available which can vary from time to time.
3) The plants and machinery always have uncured capacity or excess capacity when there is an increase in demand there may not be additional investment on capital goods.
4) The increase in demand for goods may not be of permanent nature.
5) If the producers will forecast an increase in demand for consumer goods indenture and start preparation of that earlier the process of acceleration may not take place.

2.7 Multiplier:

2.7.1 Concept of Multiplier:

F. A. Kahn in the year (1930) developed this theory. Latter on this was refined by Keynes. F. A. Kahn developed this concept with reference to increase in direct and indirect employment due to the initial increase in investment. Keynes developed this concept with reference to increase in total income. So Kahn’s multiplier is known as
employment multiplier and Keynes multiplier is known as investment or income multiplier.

The initial investment increase will increase the income, output and employment many folds to that of increase in consumption expenditure, if this increases by two times the multiplier is 2 and if it increases by 4 times than multiplier is 4.

The formula used for multiplier is \( K = \frac{\Delta Y}{\Delta I} \) where \( K \) is multiplier \( \Delta I \) is new investment and \( \Delta Y \) is new income.

The amount of multiplier will depend upon the MPC (Marginal Propensity to Consumes) if the MPC is 80% then the people will spend 80/- rupees out of 100/- Rs of additional income and this way accusing 80% as MPC this chain of income and expenditure will continue up to the end and the income of profile will go an increasing.

2.7.2 Derivation of investment Multiplier

This can be expressed in the mathematical form as

\[
100 x \frac{1}{1-0.8} = 100 x \frac{1}{0.2} = 100 x 5 = 500
\]

Thus when MPC is 4/5 the effect of multiplier effect is 5 times.

The equation of multiplier is as follows

\[
\Delta Y = \Delta I \frac{1}{1-MPC}
\]

Here \( \Delta Y \) is increase in income \( \Delta I \) is increase in investment and MPC is marginal propensity to consume so

\[
\frac{\Delta Y}{\Delta I} = \frac{1}{1-MPC}
\]

\( \frac{\Delta Y}{\Delta I} \) Measures the size of multiplier

So \( K = \frac{1}{1-MPC} \)

We know the fact that Savings is the residual of income and consumption so the multiplier is equal to

53
\[
\frac{1}{1 - \text{MPC}} = \frac{1}{\text{MPS}}
\]

Diagrammatic representation of Multiplier

**Figure 2.6 A**

**Panel - A**

MPC = 0.5

In the panel A the slope of the curve ‘C’ is 0.5 which indicates that MPC is 50%. 
C + I is the investment curve which intersects with the 45\(^{th}\) line at point E’ showing the income level at OY on X axis. The curve C+I moves upwards to C + I + ΔI hear is...
government expenditure on the infrastructural development this curve now intersects with the 45° line at E” showing the new income as OY” therefore the change in income from OY’ to OY” is ΔY. It can be noticed that this distance is twice the distance between C + I and C + I + ΔI. Since the MPC is 0.5, so the multiplier effect is 2.

The increase in income due to the multiplier effect has an impact on the savings pattern of the households. This largely depends upon the amount of MPC. This can be clear from the panel B in the above given figure. Over here, OS curve starting with a negative note below the X axis and moving upwards with a positive note. We have the first investment curve drawn parallel to X axis intersecting with OS curve at point E’ then autonomous investment takes place and this curve moves upwards as I + ΔI where I is investment and ΔI is autonomous investment. The curve I +ΔI curve intersects with the OS curve at point E”. One can observe that the distance between Y’ and Y” is twice the distance between I and I + ΔI indicating twice the increase in income due to MPC being 0.5.

2.7.3 Assumption of Multiplier

The theory of multiplier given by Keynes is based on certain assumptions which are as follows.

i. The MPC is constant throughout.
ii. There is a change in autonomous investment only.
iii. Consumption is a function of current income.
iv. There is no time lag in the entire multiplier process.
v. The factors of production are available for additional production, in other words there is less than full employment situation prevailing in the economy.

2.7.4 Leakages of Multiplier

Following are the leakages.

1) The quantum of savings by the households will have an adverse effect on the multiplier in other words higher the MPS lesser will be the amount of multiplier.

2) If the increased incomes are spent on the purchase of old stocks and securities instead of consumer goods multiplier process will be hampered. Same is true if the increased be income is used for clearing the old debts.
3) If the induced investment will be followed by inflation the multiplier effect will be multiplied.

4) If the increased income is used for import of goods then this is a leakage in multiplier.

5) The progressive taxation policy in a country will weaken the multiplier effect.

6) If the producers are in position of finished goods then the increase in new output will not take place.

2.7.5 Limitations of Multiplier

1) When there is a time lag between income received and consumption it will have a negative impact on the multiplier.

2) In an economy where there is a full employment situation prevailing multiplier effect will not be noticed.

3) If the investment activity is once in a way the multiplier effect will not be up to the mark.

4) In an open economy the chances of leakages are more so the amount of multiplier is small i.e. capital/money flow to outside countries in form of deposits.

5) The interaction between multiplier & accelerator generate fluctuations in output, employment GDP, etc. which in turn also generate fluctuations in the rate of savings by the households, MPC in the short run remaining Constant.

2.8 Inflation

Inflation is always and everywhere a monetary phenomenon and can be produced only by a more rapid increase in quantity of money than output.

2.8.1 Meaning of Inflation

Inflation is an increase in the general price level. The prime cause of inflation is excess supply of money.

There are major types of inflation are 1) Demand pull inflation 2) cost push inflation 3) wage push inflation and 4) profit push inflation out of these are the major course of inflation as well.
2.8.2 Demand Pull Inflation:

Whenever there is an increase in demand due to excess of money supply, this may not be followed by an increase in the supply of goods beyond certain level the prices are bound to rise. This can be made clear from the figure given below.

**Figure 2.7**

In the figure given above we have two curves. AS curve which is Aggregate supply curve and fair AD Curves which is Aggregate demand curves. In this figure we show AD and as on the X axis and the price level on the y axis.

The as curve has a kink at point E2 this curve foam As to E2 is a normal supply curve moving upwards from left to the right and from E2 to As it is a parallel line to ‘Y’ axis in indicating supply cannot be increased Beyond point OQ2. The first AD curve intersects with AS curve at point ‘E’. Then the increase in money supply due to C+I+G or C+ I+ G’ takes place that is due to increase in the infrastructural development activities taken up by the government the AD curve moves to the right to become AD, this intersect with the As curve at E1 this intersects with the As curve at E1 this leads to increase in price from OP to OP1 and again AD, moves to AD2 to intersect at E2 to take the price to P2 in both the situations a small amount of increase in supply is possible due to excess capacity of the plant and machinery but when the AD curve is now as AD3 intersecting with the AS curve at E3 there is a rise in price to OP2 but this rise more than earlier price.
rise as supply of goods cannot increase beyond OP2 and excess supply of money will force an increase in prices due to excess demand of goods which we call as demand pull inflation.

Whenever there is a state of demand pull inflation then due to excess supply of money there are also chances of excess savings by household—which can be attributed as one more factor influencing savings.

2.8.3 Cost Push Inflation

The basic cause of cost push inflation is increase in the input cost of production like the prices of oil, raw material cost, electricity cost technology cost etc. This type of inflation can be expressed with the help of figure given below.

**Figure 2.8**

In the figure given above we have SS curve SS1, and SS2, curves as the supply curves and DD and D1 D1 as the demand curves price levels shown on ‘Y’ axis and quantity of production (OP) on y axis.

The demand curve DD intersects with the SS curve at point E this indicates that OQ amount OP is sold at OP price. Then there is an increase in input cost which the producers to culture supply of products, to the level of SS1. This curve intersects with the DD curve at point E1 which indicates that there is a reduction in OP from OQ to OQ 1 to
the left side forcing the equilibrium position to move upwards to E1, position to increase to OP2. This also on the other hand will increase the unemployment. This kind of inflation is termed as cost push inflation.

Whenever a cost push inflation situation arises there are chances of increase in unemployment and this will lead to disserving by the households.

**Domestic Savings, Domestic Investment and Net foreign Investment**

The savings of Government and the private sector together account for the total savings in a country. (Economy) whenever there is a surplus budget due to less spending then it receives taxes and when there is a deficit financing then there is dissaving.

Following is the equation for the level of savings in the economy. National savings = Private savings + public savings or \( S = S_{private} + S_{public} \).

**S^\text{private}** or private savings is the amount of income not consumed by the households i.e. \( Y - C = S \) and the amount of tax paid by households so

Private Savings = National Income – Consumption – Taxes,

Or

\[ S_p = Y - C - T \]

Public savings is equal to the difference between government spending and taxes

Government savings + taxes – Govt. spending.

Or

Public = T - G

Finally, the basic macroeconomic equation for GDP or National income

\( Y = C + I + G + NX \)

This equation can be used, our definitions of private and public savings, and the fact that net exports equal to net foreign investment to arrives at the important relationship known as Savings and investment equation.

National Savings = Domestic investment + Net foreign investment.

Or

This implies that economic savings will either be invested domestically or overseas which will largely depend upon the comparative rates of interest in the two countries (Rate of returns)
To sum up the entire discussion in this section, the principle of Accelerator, concept of Multiplier and Inflation do have some impact on the level of income, saving and investment behavior of households. Interaction of accelerator and multiplier induces growth in income, saving and investment under the given set of conditions. Inflation, on the other hand, erodes real income, discourages savings and investment.

In the present study, an attempt is made to trace the reasons behind changes in the saving investment behavior of sample households in Nashik and around under changing economic environment such as level of income, inflation, fluctuations in the market prices of assets and so on.

### 2.9 Summary

Macroeconomic theory predicts a straight forward positive correlation between income (Y), saving (S) and Investment; saving and investment amounts tend to rise when income increases and fall with a fall in income. However, on micro level, when income of an individual increases, his consumption increases but not exactly in proportion to rise in his income but goes on declining as the income increases. Conversely, savings also increase with a rise in money income but in relation to income added, rate of saving goes on increasing with every rise in income. In Technical terms, a change in income leads to less than proportionate change in consumption, which is called MPC; marginal propensity to consume $\Delta C/\Delta Y$ goes on decreasing as income increases and vice-versa. Marginal propensity to save is a change in saving in response to a change in income is defined as $\Delta S/\Delta Y$ on the other hand shows a positive relationship with a change in income. MPS goes on increasing with increasing income and falls as income falls. These theoretical predictions will be tested on the basis of empirical data in chapters 5 and 6.

The coefficient $C$ is termed as ‘Marginal Propensity to consume’ (MPC) i.e. with the increase in Y, C also will increase. But in practice, at a later stage we will not find the increase in Y equaling the increase in C.

**Saving Function**

Budget Constraints is putting the above two equations together i.e. Saving Function equation, where $\hat{c}$ is autonomous consumption expenditure, even though the income is zero, that much consumption expenditure is a must.

$$C = \hat{c} + CY \quad \hat{c} > 0 \quad 0 < C < 1$$
And Saving Function equation \( Y - C = S \), we derive of a new equation
\[
Y - C = S = Y - \ddot{c} - CY = - \ddot{c} + (1 - C) Y
\]

Saving is an increasing function of the levels of income MPC is \( I = C = S \) is positive, in other words when the ratio between \( Y \) & \( C \) is 80:20, When \( Y \) increase by Rs. 100/-, \( C \) only increase by Rs. 80/- and the balance Rs. 20/- is savings. Therefore one important factor of savings is level of \( Y \).

\( K \) and \( I \) are related to each by net investment. Gross investment is the total amount spent on new \( K \). on the other side some \( K \) wears out every year which is depreciation. So net \( I \) is gross investment minus depreciation which is net addition to the stock of \( K \) to the economy. If gross \( I \) is equal to the depreciation then there is no addition to the economies \( K \) stock. If gross investment is less than depreciation then it is equal to disinvestment. So gross investment is more than the depreciation it will add to the net investment.

When \( Y \) increases consumption demand increases will be followed by Autonomous investment. So, \( I = f(Y) \) this investment is directly related to income and is income elastic i.e. more the \( Y \) more will be the volume of \( I \). The induced investment may be further divided into two types –

- Average Propensity to Invest (API)
- Marginal Propensity to Invest (MPI)

Average Propensity to Interest (API) – This is the ratio of investment to \( Y \) i.e. \( I/Y \). If \( Y \) is 50 Crore and \( I \) is 5 Crore then \( I/Y \) will be \( 5/50 = 0.1 \)

Marginal Propensity to Invest (MPI) – This is the ratio of change in \( I \) to change in \( Y \) i.e. \( \Delta I/\Delta Y \). If \( I \) change by 2 Crore and \( Y \) changes by 10 Crore then \( \Delta I/\Delta Y \) will be \( 2/10 = 0.2 \)

Marginal Efficiency of Investment is the rate of return expected from a given \( I \) on a \( K \) asset after covering all its costs, expect the \( RI \), lower the \( RI \) higher will be the \( I \) and Vice versa.

The classical economists were of the opinion that \( S \) always equals \( I \) because both \( S \) and \( I \) are the functions of \( RI \)
\[
S = f(r)
I = f(r)
\]
Therefore, \( S = I \)

Theory believes that when the \( r \) increases, the savings will increase but at the same time \( I \) will decrease and Vice Versa.

The classical economists were of the opinion that \( S \) always equals \( I \) because of both \( S \) and \( I \) are the functions of rate of interest: \( S = f(r) \). \( I = f(r) \). Therefore \( S = I \). They believed when the rate of interest increases, the savings will increase but at the same time \( I \) will decrease and vice versa. This is already cleared with the help of the figure given earlier.

View of Keynes was criticized on the grounds that the people who \( S \) and \( I \) take their decisions independently considering number of factors like investors will decide to \( I \) considering rate of interest and people who some will take their decisions considering \( Y \) level future requirements, price levels etc. Therefore, saving can never equal Investment.

Other factors responsible to decide the rate of \( S \): 

- a) Level of \( Y \)
- b) rate of interest, size of family. Larger is the size of family, lesser will be the amount of \( S \)
- d) Interval of \( Y \) earnings: Smaller the intervals between earnings \( Y \), smaller will be the per cent of savings of the families. Bigger the intervals larger will be the per cent of \( S \).
- e) Level of Inflation in the economy, higher the per cent of inflation and longer the period it continues in the economy smaller will be the per cent of savings.
- f) Speculations in the H.H speculate a drop in price in future they will save today to be spent at latter day.
- g) Health conditions in the family if the in the houses is very stable then the quantum of the savings would be more.

- h) Various agents: If various agents will appoint agents like postal agents, LIC agents, M.F agents, daily collection agents, etc. they will encourage in good amount of savings even for small amounts.
- i) Price of precious metals: If the prices of gold, silver, platinum, diamond is high the rate of savings will be high.

Composition of the family:
- If the parents have more female members than the male members then the rate of savings will be more so that the couple can take care of themselves with out-taking help of any one.

There is no specific methodology used to find out the amount of savings by households accurately as lot of time and money will be involved in understanding that.
So the latest flow of fund data may be used i.e. up to 2000-01 which exhibits an average of 93 per cent for household cash holdings.

To sum up macroeconomic predictions, as the aggregate level of income increases, aggregate consumption expenditure goes on falling, resulting in increase in savings and the various avenues of savings are increasingly put to use in terms of capital formation for generating more income in future. Let us test this relationship on the basis of empirical study in the chapters that follow.
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