

## General Theories of Consumption Function

### 1. The Absolute Income Hypothesis:

“...men are disposed, as a rule and on the average, to increase their consumption as their income increases, but not by as much as the increase in their income”.

Whether or not this is the original statement of the absolute income hypothesis, there is no doubt that this statement by Keynes stimulated much empirical research to test the hypothesis and to derive the consumption function.

Many of these studies were carried out on time series, the general practice being to co-relate aggregate consumption expenditures over time with aggregate disposable income and various other variables.

The basic tenet of the absolute income theory is that the individual consumer determines what fraction of his current income he will devote to consumption on the basis of the absolute level of that income. Other things being equal, a rise in his absolute income will lead to a decrease in the fraction of that Income devoted to consumption. The first statement of this hypothesis was, perhaps, made by Keynes in the General Theory. Its subsequent developments are primarily associated with James Tobin and Arthur Smithies’— also called Drift Hypothesis as shown in the Fig. 3.1.

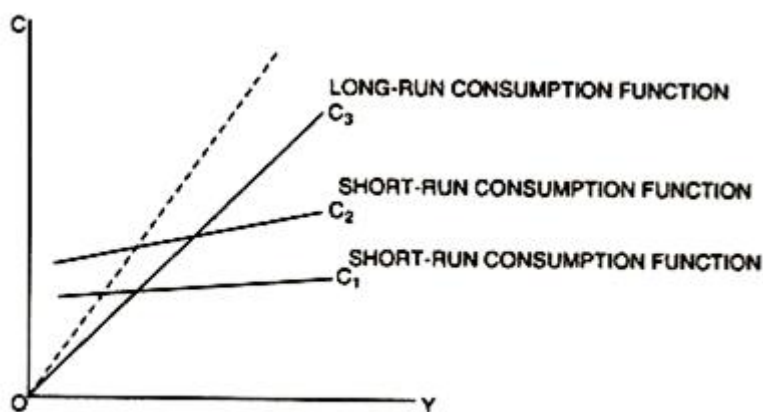


Fig. 13.1

According to absolute income theory (AIT) the level of consumption expenditures depends on the absolute level of income, with APC declining as the level of income increases. Since the level of national income grows over time, the AIT concludes that the APC should diminish continuously. As such, according to AIT, the consumption-income relationship is non-proportional, as shown in the Fig. 3.1.

In the Fig. 13.1, as income increases over time, consumption follows the non-proportional function shown by C<sub>1</sub>, but over the long-run the statistical evidence suggests that consumption function follows the path of the proportional function as shown by C<sub>3</sub>. The advocates of AIT argue that there are upward shifts in the non-proportional consumption function as shown by the shifts from C<sub>1</sub> to C<sub>2</sub> caused by change in factors other than income like consumers spending a larger portion of any given level of income than is historically normal, due to shifts in population from rural to urban areas, the age and composition of population, households spending more at every level of income in order to purchase new consumer goods regarded as essentials.

The AIT argues that these factors have caused the short-run, non-proportional consumption function to shift upward in a manner that creates an illusion of proportionality, thereby obscuring the basic non-proportional relationship. Brown has explained that the relationship between income and consumption is non-proportional and rests upon habit persistence among consumers. According to Brown, “The full reaction of consumers to change in income does not occur immediately but instead takes place gradually”.

Consumers react rather slowly to changes in income. Brown felt that the decline of the effect of past habits is continuous over time, rather than discontinuous as suggested by Modigliani-Duesenberry hypothesis. Factors as mentioned above, according to AIT, have caused the consumption function to shift upward by roughly the amount necessary to produce a proportional relationship between C and Y over long-run and thus to prevent the appearance of what would otherwise be the non-proportional relationship that would be expected on the basis of the income factor alone.

In the years following the appearance of the General Theory, economists generally accepted the absolute income theory as basically correct, but the widespread acceptance enjoyed by this theory was short-lived. Doubts about the adequacy of the absolute

income hypothesis arose because of its apparent inability to reconcile budget data on saving with observed long-run trends. Estimates of national saving and other aggregate derived by Kuznets and later by Goldsmith indicated that the aggregate saving ratio had remained virtually constant since the 1870s. Yet budget studies showed that the saving ratio rose substantially with income level.

Since incomes have risen tremendously since the 1870s by almost any standard, this would suggest according to the absolute income hypothesis, that the aggregate saving ratio should have moved up noticeably over time. Data made available by Kuznets showed that during the period 1869-1929, the ratio of consumption to national income had remained constant while income had quadrupled.

## **2. Relative Income Hypothesis:**

An answer to this apparent inconsistency is provided by the relative income hypothesis, which seems to have been first propounded by Dorothy Brady and Rose Friedman. Its underlying assumption is that saving rate depends not on the level of income but on the relative position of the individual on the income scale. As such relative-income hypothesis implies the assumption that spending is related to a family's relative position in the income distribution of approximately similar families.

Much additional theoretical and empirical support of this hypothesis was provided by the work of Modigliani and of James S. Duesenberry, carried out at about the same time. The relative income hypothesis is conceived by Duesenberry and helps to explain the differences found between consumption function derived from data of families classified by groups and those derived from overall totals (time series).

Duesenberry contended that, at any given moment in time, consumption is not particularly sensitive to current income. People spend in a manner consistent with their relative income position. With incomes rising or falling over the course of years, their spending patterns change if their relative position changes. James Tobin shows that other factors could cause the effects that Duesenberry explained by means of relative incomes.

Duesenberry develops the proposition that the ratio of income consumed by an individual does not depend on his absolute income, instead it depends upon his relative income—upon this percentile position in the total income distribution. During any given period, a person will consume smaller percentage of his income as his absolute income increases if his percentile position in income distribution improves and vice versa.

Thus, the relative income theory argues that the fraction of a family's income spent on consumption depends on the level of its income relative to the income of neighbouring family's and not on the absolute level of the family's income. If a family's income increases but its relative position on the income scale remains unchanged because incomes of other families have also risen at the same rate, its division of income between C and S will remain unchanged. According to the relative income theory, each family, in deciding on the fraction of its income to be spent, is uninfluenced by the fact that it is twice as well off in absolute terms and is influenced only by the fact that it is no better off at all in relative terms

According to RIT, the level of consumption expenditures is not determined by the absolute level of income but by the relative level of income, with the APC declining as relative income increases. More specifically, the RIT argues that the level of consumption spending is determined by the household's level of current income relative to the highest level of income previously earned.

### **Symbolically, it is shown:**

$$C = a Y + b [Y_h/Y]Y$$

where C represents the current level of consumption expenditures, Y, the current level of income,  $Y_h$ , the highest level of income previously earned, and a and b, represent numerical constants which relate income to consumption. From the above equation, we find that when the households experience a temporary and short-run increase in current income above its previous peak level of income, it increases its consumption expenditures by an amount which is less than proportional to the increase in current income.

Consequently, when current income rises relative to peak income, the APC declines and the increase in total consumption expenditures is not proportional to the increase in total income. Again, when a household experiences current and peak income

growing by the same percentage amount, it increases its consumption expenditures by an amount which is proportional to the increase in current income.

Consequently, the APC remains constant and the increase in total consumption expenditure is proportional to the increase in total income. Thus, according to the RIT, changes in current consumption are not proportional to the changes in current income only when current income increases relative to previous peak income.

If current and peak income grow together, changes in consumption are always proportional to the changes in income. However, it must be noted that RIT works for decreases as well as increases in the level of current income. The RIT is fundamentally different from AIT. The RIT explains away the short-run consumption function as a result of temporary deviations in current income, while the AIT explains away the long-run consumption function as the result of factors other than income on consumption.

**Duesenberry Hypothesis:**

On a theoretical level, Duesenberry supplied psychological support for this hypothesis, noting that a strong tendency in our social set up for people to emulate their neighbours and, at the same time, to strive constantly towards a higher standard of living. Hence, once a new, higher standard of living is obtained, as at a cyclical peak, people are reluctant to return to a lower level when income goes down. In other words, people seek to maintain at least the highest standard of living attained in the past.

On this basis, he inferred that from an aggregate time-series point of view the relative income hypothesis could be transformed into one expressing the saving rate as a function of the ratio of current income to the highest level previously reached. However, Davis suggests a variable to this approach of Duesenberry—that previous peak consumption be substituted for previous peak income. The basis of this is that people get used to a certain standard of consumption, rather than to a certain level of income, so that it is past spending that influences current consumption rather than past income.

Prof. Duesenberry has made two significant observations on the factors affecting consumption function which go by the name of ‘Duesenberry Hypothesis’. According to him, consumption expenditure of an individual is determined not only by his current income but also by the standard of living enjoyed by him in the past. As income falls from the previous level, expenditure on consumption also does fall but not to the full decrement in income because people fail to adjust their expenditure according to the new circumstances.

For example, a lecturer who has been granted a temporary commission in the army on account of emergency, and who has become accustomed to enjoy a higher standard of living, will not be able to reduce his expenditure on consumption goods when he is demobilised. Duesenberry refers to the tendency for the new and higher level of consumption purchasing associated with a previously exceeded level of income as the ‘ratchet effect’—it explains the tendency for an economy’s consumption purchasing not to fall back to earlier levels when its income does.

The diagram shows the essence of Duesenberry’s long-run and short-run consumption function:

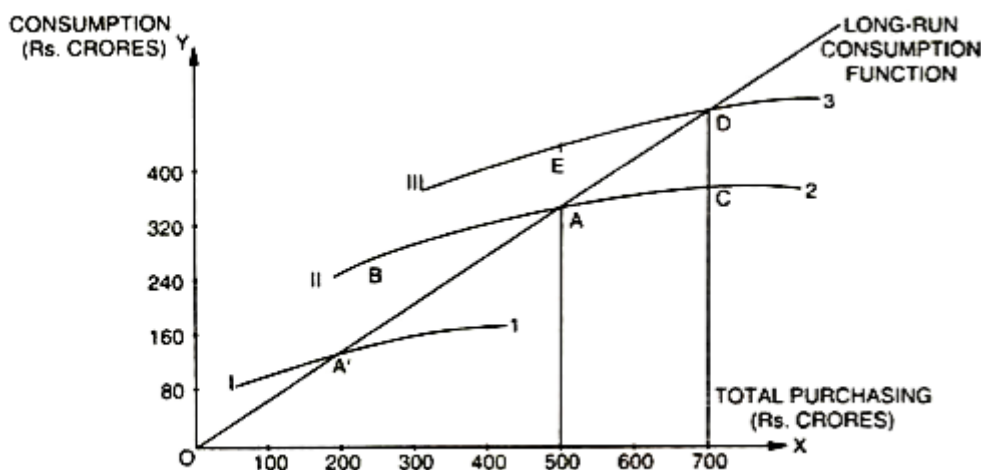


Fig. 13.2

The figure shows an economy initially in long-run equilibrium at the combination of total purchasing and consumption at point A. To establish Duesenberry type of relationship between short- run and long-run consumption functions. Let us consider the effects

of a decline in the level of total purchasing from initial Rs. 500 crore to Rs. 200 crore. The consumption does not fall to point A', the consumption expenditures will come down to Rs. 240 crore at point B.

On the other hand, an increase in the level of economy's purchasing from Rs. 500 crore to Rs. 700 crore will initially involve only slight increase in the level of consumption purchasing as the economy moves out short-run consumption function 2 to the combination of income and consumption purchasing at point C. The move occurs along short-run function 2 in the short-run but in the long-run consumption purchasing in the economy must finally reach at the point D.

This level represents the total amount of consumption purchasing that will occur when the economy's income is Rs. 700 crore and each income group in the society consumes its traditional proportion of income to mitigate its feeling of social inferiority. Point D is another point on the economy's long-run consumption function. But what will happen if the economy's income were to fall to Rs. 500 crore again? Will consumption fall along point A? No, the economy will move down short-run consumption function III to the level of consumption purchasing shown by point E; as the economy will resist cutting its purchases below that it enjoyed when the previous high level of Rs. 700 crore was attained (ratchet effect).

The theory of ratchet effect maintains that high consumption standards and high investment levels previously attained are not easily reversed. The ratchet keeps the economy from slipping back and losing all the income gains attained during the preceding expansion. Further, Duesenberry talks of the 'Demonstration Effect' according to which the consumption standards of low income groups are greatly affected by the consumption standards of high income groups.

The moment low income groups, start consuming goods used by high income groups, the latter always try to avoid consumption of such commodities and search for still better commodities. Such tendencies go to increase consumption and weaken the propensity to save.

#### **Assumptions:**

Duesenberry's theory', known as the relative income hypothesis is based on a reversal of two assumptions previously thought to be fundamental to aggregate demand theory.

#### **He states that:**

- (i) The consumption behaviour of individuals is interdependent (rather than independent) and
- (ii) Consumption relations are irreversible over time Duesenberry uses statement
- (iii) Above to develop the thesis that the percentage of income consumed by any individual does not depend on his absolute income but rather on his 'percentile position in the income distribution,' or his relative income.

The relative income hypothesis, thus attempts to explain the apparent paradox between the cross-section and time series evidence. The second key assumption of relative income hypothesis is used to explain cyclical fluctuations in the aggregate C/Y ratio. It may be understood that a rise in disposable income leaves the C/Y ratio unchanged (although some consumers find their relative income position changing over time, these changes will balance in the aggregate, so that the aggregate C/Y ratio will remain unchanged).

However, a fall in disposable income will raise the C/Y ratio. If consumer standards are irreversible, a decrease in income will have a smaller than proportional effect on consumption. Individuals will continue to base their consumption patterns partially on higher previous levels of income, which can be represented by peak previous income. The fact that consumption does not fall proportionally with income during recessions accounts for the cyclical behaviour of the C/Y ratio.

Duesenberry hypothesis establishes an important link between the theory of economic and the theory of business cycles. The fact that the long-run consumption function is likely to be linear throws serious doubts on the theory of secular stagnation which is based on the fact that saving gap increase more than proportionately to an increase in income. This may be true in the short-run but not in the long-run. Again, this hypothesis enables us to understand why some of the families decide to put to work even their non-earning members like women and children.

It shows that consumption is not only a function of income but income can also be a function of consumption. Since families want to maintain their high consumption standard, they must put even their non-earning members to work so that the income of the family could go up and consumption standards could be maintained, despite, a fall in incomes on account of depression.

Duesenberry's theory, no doubt, represents significant advances over previous consumption functions. However, there are limitations in this type of approach also and there are occasional circumstances for which the theory gives somewhat less than satisfactory results. First, this hypothesis states that consumption and income always change in the same direction; yet mild declines in income often occur concomitantly with increases in consumption.

Second, the function states that increases in consumption are proportional to any size increase in income, no matter how large or small. It seems reasonable to suggest that unexpectedly large increases in income result, at least initially, in less than proportional increases in consumption. Third, one might argue that consumer behaviour is slowly reversible over time instead of being truly irreversible. Then previous peak income would have less effect on current consumption the greater the elapsed time from the last peak. However, recent advances in the theory of consumption function have been able to settle these difficulties.

### **3. The Permanent Income Hypothesis:**

It is a theory that attempts to explain away apparent inconsistencies of empirical data on the relationship of saving to income. Data for a single year show that, as income rises, savings account for an increasing share of income, while data for a long period of years show that, even though total income rises over the years, total savings account for a fairly stable share of total income. Milton Friedman states that this does not occur because of changes in consumption habits at every income level but because a study of measured income and consumption involves inaccurate concepts of what these habits really are.

The best known exposition of the PIH is developed by Professor Milton Friedman—formerly of the University, of Chicago. He says permanent income is roughly akin to lifetime income, based on the real and financial wealth at the disposal of the individual plus the value of one's human capital in the form of inherent and acquired skills and training. The average expected return on the sum of all such wealth at the disposition of an individual would be his permanent income. But measured income is different from permanent income according to Friedman.

Over a lifetime measured income ought to coincide with permanent income, but in any one year measured income as a result to cyclical fluctuations and because of other random changes may depart from permanent income. But the best way to measure permanent income, according to this hypothesis, is through a weighted average of past and present measured income, with less weight being given to measured income that lies farther in the past. In any year the difference between the measured income and permanent income is transitory income. It may be positive or negative, but over an individual's life time it is essentially zero.

This theory like the relative income theory, holds that the basic relationship between consumption and income is proportional, but the relationship here is between permanent consumption and permanent income. Thus, quite a different approach to the role of income in the theory of consumer spending has been developed by Milton Friedman. The main point of departure is the rejection of the common concept of current income and its replacement by what he calls permanent income.

A family's permanent income in any one year is in no sense indicated by its current income for that year but is determined by the expected income to be received over a long period of time, stretching out over a number of future years. According to Friedman, "Permanent income is to be interpreted as the mean income regarded as permanent by the consumer unit in question, which in turn depends on its farsightedness". Given this meaning of permanent income, a family's measured or observed or actual income in any particular year may be larger or smaller than its permanent income.

Friedman divides the family's measured income in the year into permanent income and transitory income. The measured (actual) income is larger or smaller than its permanent income, depending on the sum of positive and negative transitory income components. For example, if a worker gets special bonus in a year and does not expect to get it again, this income element is positive transitory income and it has the effect of raising his actual (measured) income above his permanent income. On the other hand, if he suffers an unexpected loss (say, on account of plant shutdown); this income element (loss) is regarded as negative transitory income and it has the effect of reducing his actual (measured) income below his permanent income.

These unexpected additions and subtractions from family's income are expected to cancel out over a longer period relevant to permanent income but they are present in any shorter period. Similarly, Friedman divides measured (actual) consumption into permanent and transitory components. A good purchased because of an attractive reduction in sale price or a normal purchase

postponed due to the unavailability of the goods are examples of positive and negative transitory consumption. A family's actual (measured) consumption in any particular period may be larger or smaller than its permanent consumption.

**The argument can be summarized as follows:**

$$Y_m = Y_p + Y_t$$

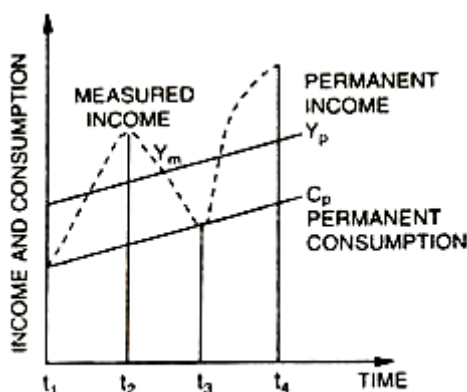
$$C_m = C_p + C_t$$

where m, p and t represent measured, permanent and transitory components. Further, the consumption function is held to be proportional— $C_p = kY_p$ , where k is the factor of proportionality and depends on interest rate (i), the ratio of non-human to total wealth (w) and a variable u—which mainly reflects age and tastes—thus,  $k = f(i, w, u)$ . These factors, and hence k, are independent of the level of permanent income.

Thus, we find, that according to PIT, the level of consumption is not determined by absolute or relative income level but by the level of permanent income with the APC out of permanent income, remaining constant as permanent income increases and the APC out of current income declining as current income increases above the permanent income in the short-run. Although PIT appears to be similar to RIT, there is significant difference. The PIT argues that, permanent consumption is proportional to permanent income—while the RIT argues that in the long-run, current consumption is proportional to current income. The measure of income determined as an average of current, past and future incomes is called permanent income.

The essential idea of the PIH is shown with the help of a single diagram. In the diagram  $Y_p$  represents permanent income,  $C_p$  permanent consumption and  $Y_m$  measured or current income. The difference between  $Y_p$  and  $Y_m$  is transitory income. The diagram shows the path over time of these three variables. Starting at the point in time  $t_0$ , measured or current income expands. As it rises from its starting level to a peak at a time  $t_2$  the ratio between permanent consumption ( $C_p$ ) and measured income will decline.

This is the ratio that may be observed from current data. As measured income begins to decline from this peak, the measured (or observed) propensity to consume will increase. This will continue until measured income falls to touch at the bottom at a time period  $t_3$ , following which it will start to rise once again. As such, it is the assumption that consumption expenditures are tied in proportional fashion to permanent income and, thus, do not fluctuate measured (or observed) income fluctuates.



**Fig. 13.3. Permanent income hypothesis**

PIH; we find, uses the concept of permanent income and rejects current income as the basis for consumption expenditures. However, the question is how far back into past income and forward into future income does permanent income reach? The answer is different for every individual and household.

The longer is the experience span required, the farther back in time the past income component must go and the greater is the degree of certainty, the farther forward in time the future income component most go. But the required experience span and the degree of certainty in expectations are influenced by a host of socio-economic factors like health, education, job security, accumulated wealth and so on.

Thus, the time horizon for determining permanent income is usually greater than one year but less than the life span of the household or individual. Again, the transitory consumption is not related to transitory income in the PIH. When a household has a transitory decline in income— its consumption expenditure do not decline too. Similarly, when a household has a transitory

increase in income—its consumption expenditures do not increase. According to the advocates of PIH, unexpected changes in income do not produce changes in consumption, instead, they produce equivalent changes in sales.

In other words, the MPC out of transitory or windfall income is Zero and the MPS is unity. It is, therefore, clear that if current consumption is unrelated to transitory income, the consumption- income relationship is non-proportional in the short-run. Since the PIH argues that proper consumption function relates permanent consumption to permanent income, it concludes that the long-run consumption-income relationship is proportional. Changes in permanent income give rise to proportional changes in permanent consumption.

Friedman showed on the basis of empirical data that there existed proportional relationship between consumption and permanent income in the long-run. But at the same time a non-proportional relation was observed between consumption and measured income in the short-run. In Fig. 13.3(a), the long-run relationship is indicated by  $C = 0.88 Y_p$  (as observed by Friedman). Suppose that the income level is  $Y = Y_p$  in an initial year, i.e., aggregate measured income and permanent income are equal. If in the next year measured income rises to  $Y_2$  due to positive transitory income.

The consumption will take place at point K on the short term consumption function. But consumption out of transitory income according to this hypothesis is always zero. Whatever increase is in consumption from H to M is due to rise in permanent income. This leads to a drop in APC of the economy.

The cyclical decline in income takes place with a fall in transitory income. With transitory income being negative would show a rise in APC. The measured income, suppose, falls to  $Y_1$  from  $Y_{p1}$ . A fall in consumption due to decline in transitory income is zero.

Therefore, consumption takes place at E and APC rises from what it is at H.

Further, as the PIH argues that permanent consumption and transitory income are unrelated— it concludes that the short-run consumption-income relationship is non-proportional.

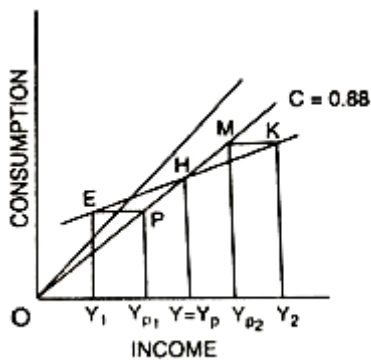


Fig. 13.3(a)

**Limitations:**

In spite of these arguments the permanent income hypothesis is by no means established. Critics argue that it puts too great a stress on the expectations and long-range planning of consumer units, while in reality consumer units change their consumption behaviour frequently. Further, on the theoretical plane, question is raised regarding the validity of the two central tenets of the theory, namely, the independence of  $k$  of the level of income, and the lack of correlation between transitory consumption and transitory income.

Similarly, the assumption of a zero marginal propensity to consume out of transitory income is questioned, partly on the basis that low income families are under strong pressures to spend any expected income to meet current needs, and partly because of the very unequal distribution of wealth which mitigates against dissaving by low-income families to maintain consumption in the face of temporary declines in income.

However, whether or not the permanent income hypothesis turns out to be valid, there is little doubt that, to quote Tobin, “This is one of those rare contributions of which it can be said that research and thought in its field will not be the same henceforth”. Most of all, it has led to under spread recognition of the possible effects of variability in income on consumption patterns and has provided a theoretical basis for measuring these effects as a springboard for a more realistic theory of consumer behaviour.

Praising the work of Friedman, Prof. Evans has stated: “Without making a final judgment on whether the strict terms of permanent income hypothesis all hold, it can be fairly said that the weight of the evidence supports this theory. Even if parts of the hypothesis are ultimately shown to be correct. Friedman’s formulation has reshaped and redirected much of the research on consumption function. It is indeed unusual to discuss the consumption function today without referring to Friedman’s terms of reference.

#### **4. Life Cycle Hypothesis:**

Life cycle hypothesis is another important attempt to explain the difference between cyclical short-run consumption function and secular long-run consumption function. It has been developed by Franco Modigliani, Albert Ando and later by Brumberg—called the life cycle hypothesis or MBA approach. It is said that life cycle hypothesis is similar to PIH developed by Friedman.

Although, the two approaches are similar in principal yet they are different in certain respects. Friedman’s version of PIH has gained more attention in recent years. In the Friedman’s approach a consumer unit is assumed to determine its standard of living on the basis of expected returns from its resources over its life time. These returns are expected to be constant from year to year, though in actual practice some fluctuation would result over time with changes in the anticipated amount of capital resources.

The expenditures of the consumer units are set as a constant proportion (k) of this permanent level of income. The value of (k) varying for consumer units of different types and of different tastes. Actual consumption and actual income deviate from these planned, or permanent levels to the extent that transitory factors, enter in. The Modigliani—Brumberg—Ando (MBA) approach is essentially a permanent wealth hypothesis rather than a ‘permanent income hypothesis’ though in practice the two approaches converge].

In its most recent formulation, the household or consumer unit is assumed to determine “the amount available for consumption over life, which is the sum of the households’ net worth at the beginning of the period—plus the present value of its non-property income—minus present value of planned bequests.”

Thus, the relationship is essentially the same as that derived by Friedman. In either formulation, the central tenet is the assumption that the proportion of permanent income saved by a consumer unit in a given period is independent of its income (or its resources) during that period and further more that transitory incomes may have no or little effect on current consumption.

#### **The life cycle hypothesis states the income consumption relationship as:**

$$C_t = KV_t$$

where  $C_t$  is the current consumption by an individual, K is the factor of proportionality and  $V_t$  is the present value of the resources accruing to the individual over the rest of his life. The total resources available to the individual over his entire life span are the sum of individuals net worth at the end of the proceeding period plus his income during the current period from the non-property sources plus the total of the discounted values of the non-property incomes expected in the future time periods.

#### **Assuming a proportionate relationship between the current non-property income and the discounted sum of expected future non-property income, an aggregate consumption function is expressed as:**

$$C_t = aY_t^n + bA_{t-1}$$

where  $C_t$  is the current consumption,  $Y_t^n$  is the aggregate non-property income in period t,  $A_{t-1}$  is the aggregate net worth at the end of  $A_{t-1}$ (proceeding period) and a and b are proportionality constants.

This simplified life cycle hypothesis serves at least to remind us that savings and consumption pattern and involve more than blind psychological urges for thrift or unthinking and mechanical responses to changes in the level of current income. The life cycle consumption function that we have derived, differs from its simple Keynesian counterpart because in the life cycle consumption function, consumption is taken as a function of wealth and of age and not simple of current income.

It does not mean that the level of current income has no effect on current consumption under the life cycle hypothesis. It does have an effect because current income is one of the important constituents of total wealth. Again, life cycle function does not mean that people will automatically and systematically become thriftier as they become richer.

On the contrary, the life cycle hypothesis says that consumption spending is strictly proportional to total wealth so that if we were to compare two individuals of the same age, one of whom had twice the total wealth of the other, we would expect that his total standard of living would also be twice that of his poorer counterpart. Some of the most striking differences between the life cycle



and simple Keynesian consumption function arise when their respective predictions of the response of budgeted consumption to these unanticipated changes in income and wealth are compared.

It must be admitted that even the life cycle hypothesis, in its simplified form as presented here, suffers from certain limitations. First of all, it involves a variety of variables that are difficult to measure, in particular anticipated future income virtually unobservable. Secondly, the theory assumes an unreasonable degree of rationality and the power to see through future, which are not there. Again, it assumes that changes in current (after tax) labour income always generate changes, in the same direction, of expected future labour income. This makes the function difficult to use, specially in cases where the changes in current labour income are temporary.

The two major theories in this category—the PIH and Life Cycle Hypothesis (LCH) have in common the primary idea that the consumer plans his consumption not on the basis of income received currently, but on the basis of long-term or even life term income expectations. As such, the fundamental theoretical relationship between consumption and income is one of proportionality, although short-term (or cyclical) factors can cause departures from the average propensity to consume.

Both the life cycle hypothesis and the permanent income theory suggest that consumers adjust their consumption patterns to the total resources which they can draw on for spending over their life-times. These resources consist of both wealth and the present value of expected income. The life cycle hypothesis differs from the theory of Friedman, however in that the propensity to consume of an individual will vary with age as well as wealth.

The basic relationship in the hypothesis is one of proportionality between individual's life-time income as determined by total resources (material wealth and human capital), but the observed relationship between consumption and income at any time will depend on the age of the consumer. Since the individual consumer's current income is relatively low at the beginning and at the end of his or her life, the proportion of income consumed out of current/measured income will be short at these times.

In his or her middle years, income will be high and the propensity to consume will be lower. Over the consumer's life-time, however, consumption will be a fixed proportion of total income. The essential point of both theories is that long-term proportion of permanent income consumed is independent of consumer's income in a particular period. Transitory income change do not have any significant impact upon current consumption. Thus, short-term changes in the current/observed consumption—income ratio are the result of transitory shifts in income.

### ***Normal Income Hypothesis:***

We have seen that as a result of the efforts of Milton Friedman, Modigliani, Ando, Brumberg new theories of consumption function have been developed. M.J. Farrell explains the normal income hypothesis on the basis of the work done by these gentlemen. Farrell's main point of departure from

Friedman's PIH is with respect to the time span taken into consideration. The basis of his theory is the recognition that, if an individual plans rationally to maximize his utility over his life-time, his consumption in any given year will depend, not on his income alone in that year, but on the resources of which he disposes off during his life-time.

If an individual knows with certainty his future stream of earnings, and there is a perfect capital market with a given rate of interest—it is possible to know the resources of which he disposes. It is known by the current value (represented by  $v$ ) of his current assets plus his expected future earnings (discounted at the rate of interest).

While defining the earnings, Farrell includes in it all receipts except the interest yield of assets if the individual expects a constant annual income  $Y$  for the remainder of his life span and  $Y$  is such that the current value of this income stream is just equal to  $v$ , then  $Y$  may be called individual's normal income. If such an individual also knows his future tastes and future course of prices, and plans his consumption so as to maximize his satisfaction over his life-time, his planned consumption in each year will be uniquely determined by his normal income  $Y$ . Thus, the normal income hypothesis states, that in any given period, an individual's current income affects his consumption only through its effect on his normal income  $Y$ .

**We may write this relationship between this consumption expenditure and normal income as follows:**

$$C = \beta (Y)$$

where  $\beta$  is independent of current income and assets.

However, in actual practice, a perfect capital market as assumed by the theory is not possible and thus raises a number of theoretical difficulties—notably that it is not clear at what rate to discount future earnings and also how can a consumer has perfect knowledge of his income in the remainder of his life-time. The very fact that we live in an uncertain world is a source of much greater difficulties. Rational behaviours in the phase of uncertainty is a problem that has not yet been solved.

Farrell points out that there are various possible reasons because of which there is little possibility of the current income influencing directly current consumption—firstly because, there is uncertainty about future which might lead people to spend every penny that they have; but this might be confined to small minority, because persons who have positive savings or assets are unlikely to spend them simply because the future is uncertain.

Thus, it is just possible that current income might not directly influence current consumption as thought by Farrell. Secondly, it is just possible that people on account of uncertainty may abandon the maximizing calculation in favour of certain conventions about saving. Thus, it could be concluded that the rational consumption behaviour conforms to normal income hypothesis particularly when the incomes are more variable. This has been proved by empirical tests.

### ***Rate of Growth Hypothesis:***

This hypothesis regarding consumption behaviour was developed by Modigliani and Brumberg in most striking piece of research (1953). On a number of simplifying assumption, they found, for rates of growth up to 5% per annum, each 1% per annum of growth in either real income per head or population would lead to 3-4 per cent of aggregate income being saved, thus the saving ratio is proportional to the rate of growth of aggregate real income, and is independent of how this growth is compounded of changes in population and in real income per head (so long as both change steadily).

The rate of growth hypothesis states that in the long-run equilibrium, aggregate saving is determined by changes in population structure and in real income per head. If these factors change steadily, the fraction of aggregate income saved is proportional to the rate of growth of aggregate real income. The rate of growth hypothesis, no doubt, gives good explanation of the long period consumption function of countries like USA; but in applying the hypothesis to other economies, we must be prepared for the possibility that the balance will not hold there, so that the actual saving will differ from that predicted by the hypothesis.

But, however, much thrift may distort the picture, the rate of growth will remain the basic determinant of the aggregate savings/income ratio in the long-run. It is an over-simplification to assert that, in the long-run, the proportion of aggregate income saved is proportional to the rate of growth of aggregate income; but it is much nearer the truth than the linear consumption functions so often postulated. It would be interesting to see the effect on the many theories of economic growth of substituting in them the rate of growth hypothesis for their present (usually linear) consumption functions.

### **Which Theory to Choose?**

Which of the above theories offers the best or the most appropriate explanation of consumer behaviour ? Unfortunately, no precise answer can be given to this question, as each represents a hypothesis that is reasonably in accord with observed experience. There are elements of truth in all these approaches to understanding the relationship between income and consumption (or savings).

Probably, what is most crucial is the realisation that both theoretical analysis and empirical observation point strongly to the plan that income is the dominant factor in explaining consumption behaviour in the national economy. Furthermore, the observed relationship between income and consumption appears to follow to a Keynesian-type path over the short term, even though this relationship is a proportional one when a longer span of time is taken into account.

### **Cyclical and Secular Consumption Function:**

It is very difficult to determine the behaviour of consumption over a period of time. All that we learn from Keynes' psychological law of consumption is that in the short period (cyclically) the consumers do not spend the entire increment of income and the MPC is less than one. In other words, in the short period, the consumption function is stable, i.e., there are no shifts in the consumption function. In the long period (secularly), however, this may not be the case. The shape, position and slope of the consumption function change in the long-run on account of certain dynamic influences like the population growth, changes in capital stock, inventions, etc.

These influences become the cause of shifts in consumption function in the long-run. As a result of historical experience and research in business cycle studies, it has been established that in the short period (cyclically) there is a lagged adjustment between income and consumption, i.e., consumption rises and falls cyclically less than in proportion to the rise and fall in real income.

In other words, it means that in the short period there is not enough time for consumption to adjust itself with income, so that when income rises, consumption does not rise to the same extent and when income falls, consumption does not fall to the same extent, i.e., consumption always lags behind. As regards the long period (secularly), research and experience of various economists show that consumption has gone up more or less in proportion to a rise in income.

Another way to understand the distinction between the two w functions is to describe the short-run consumption function as non-proportional and the long-run consumption function as proportional. It is because, in the short-run, consumption does not change proportionally with income, thus proportion rises instead with falling income and falls with rising income. Whereas in the long-run, consumption changes proportionally with income—it remains roughly the same proportion of income as the level of income doubles and redoubles over the decades that make up the long-run. Thus, we may sum up by saying that the consumption income relationship is non-proportional in the short-run and proportional in the long-run.

The short-term and long-term consumption curves are shown in Fig. 13.4. At income  $OY_1$ , consumption equals  $Y_1M$ ; when income falls, consumption does not follow along the  $ML$  line but along the short-term consumption curve  $MC_1$ . When income rises again, consumption rises along the straight line  $C_1M$  and then straight line  $MC_1$ . Similar phenomena occur when income falls at higher levels (e.g.,  $OY_2$  and  $OY_3$ ).

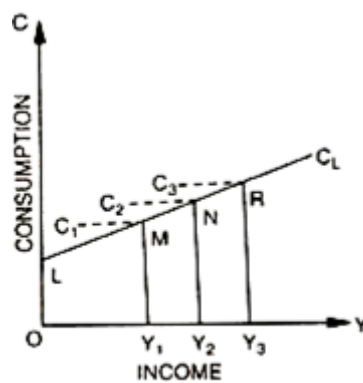


Fig. 13.4

### Consumption Function and Underdeveloped Economy:

According to Keynes' psychological law of consumption, an increment in income leads to less than proportionate increase in consumption so that marginal propensity to consume goes on declining as income increases, but the marginal propensity to save rises. It is possible to maintain a particular level of income in the advanced economy if all savings at that level are invested.

Situation, however, is different in underdeveloped economies. Consumption function presents interesting features. People have unusually high average and marginal propensities to consume, and, therefore, the marginal propensity to save is low, partly on account of low income levels and partly on account of high marginal propensity to consume.

The marginal propensity to consume is not only high in underdeveloped economies but sometimes equal to unity, i.e., whatever increases take place in income, the whole of it is spent on consumption because there is lot of pent up desire, which remains unfulfilled for want of purchasing power. As soon as income increases it is spent on consumption. That is why, it is said that the shape of consumption function in such economies is linear (a straight line curve).

The percentage of income saved decreases with increases in income, while the tendency is just the opposite in advanced economies, "Figures of aggregate consumption are not available for India, but the last few years' statistics of national and saving (net domestic capital formation) show that the percentage increase in savings has been much less than the percentage increase in national income with the result that additional savings form a diminishing proportion of additional incomes."

In advanced economies additional expenditure on consumption is primarily on industrial consumer goods and the percentage of increased expenditure on food is very low. In an underdeveloped economy, on account of low level of income, increases in

income tend to be mostly spent on food-grains and other protective food or in substituting superior quality of goods for an inferior type. In India, the income elasticity of demand for food has been found to be mostly near unity.

As a matter of fact it would not be out of place to mention that people in backward economies suffer from wrong consumption habits on account of the effects of conspicuous consumption and demonstration and inter-personal comparisons. They have developed wrong consumption priorities, e.g., they seem to have entered the 'age of high mass consumption' without attaining Rostow calls 'take off or 'self-sustained growth' stage. In other words, people in these underdeveloped economies are using scooters, television sets, radios, cars, air conditioners, other electric gadgets and luxury goods. It is, therefore, evident that consumption as a factor of development is not lacking—what is lacking is the purchasing power owing to poverty and low equilibrium trap.

Again, in an underdeveloped economy, household enterprise predominates and production is more for self-consumption than for the market. Thus, when income increases, the demand for self-consumption increases rather than purchases in the market. The increased demand for self-consumption is met by a diversion of output from the market, causing a reduction in the marketable surplus.

Thus, in an underdeveloped economy, in which the wage-goods gap is not bridged, an increase in income and hence in the propensity to consume would lead to fall in the marketable surplus and rise in the level of prices. Keynesian remedy to remove unemployment in an underdeveloped economy may actually plunge the economy into an inflationary spiral.

There are, no doubt, a few rich 'islands' in an underdeveloped economy which enjoy quite high incomes, and a high propensity to save. But their savings are frittered away on import of luxuries and conspicuous consumption. Hence, one of the most important constituent of effective demand, namely, consumption function, has severe, limiting qualifications in an underdeveloped economy, despite the fact that it apparently seems to be very favourable.