Absolute Income Hypothesis

Keynes' consumption function has come to be known as the 'absolute income hypothesis' or theory. His statement of the relationship between income and consumption was based on the 'fundamental psychological law'.

He said that consumption is a stable function of current income (to be more specific, current disposable income—income after tax payment).

Because of the operation of the 'psychological law', his consumption function is such that 0 < MPC < 1 and MPC < APC. Thus, a non-proportional relationship (i.e., APC > MPC) between consumption and income exists in the Keynesian absolute income hypothesis. His consumption function may be rewritten here with the form

$C = a + bY$, where $a > 0$ and $0 < b < 1$.

It may be added that all the characteristics of Keynes' consumption function are based not on any empirical observation, but on 'fundamental psychological law', i.e., experience and intuition.

(i) Consumption Function in the Light of Empirical Observations:
Meanwhile, attempts were made by the empirically-oriented economists in the late 1930s and early 1940s for testing the conclusions made in the Keynesian consumption function.

(ii) Short Run Budget Data and Cyclical Data:
Let us consider first the budget studies data or cross-sectional data of a cross section of the population and then time-series data. The first set of evidence came from budget studies for the years 1935-36 and 1941-42. These budget studies seemed consistent with the Keynes' own conclusion on consumption-income relationship. The time-series data of the USA for the years 1929-44 also gave reasonably good support to the Keynesian theoretical consumption function.

Since the time period covered is not long enough, this empirical consumption function derived from the time- series data for 1929-44 may be called 'cyclical' consumption function. Anyway, we may conclude now that these two sets of data that generated consumption function consistent with the Keynesian consumption equation, C = a + bY.

Further, 0 < b < 1 and AMC < APC.

(iii) Long Run Time-Series Data:
However, Simon Kuznets (the 1971 Nobel prize winner in Economics) considered a long period covering 1869 to 1929. His data may be described as the long run or secular time-series data. This data indicated no long run change in consumption despite a very large increase in income during the said period. Thus, the long run historical data that generated long run or secular consumption function were inconsistent with the Keynesian consumption function.

From Kuznets' data what is obtained is that:
(a) There is no autonomous consumption, i.e., 'a' term of the consumption function and

(b) A proportional long run consumption function in which APC and MPC are not different. In other words, the long run consumption function equation is C = bY.

As a = 0, the long run consumption function is one in which APC does not change over time and MPC = APC at all levels of income as contrasted to the short run non-proportional (MPC < APC) consumption-income relationship. Being proportional, the long run consumption function starts form the origin while a non-proportional short run consumption function starts from point above the origin. Keynes, in fact, was concerned with the long run situation.

But what is baffling and puzzling to us that the empirical studies suggest two different consumption functions a non-proportional cross-section function and a proportional long run time-series function.

What Is the Permanent Income Hypothesis?

The permanent income hypothesis is a theory of consumer spending stating that people will spend money at a level consistent with their expected long-term average income. The level of expected long-term income then becomes thought of as the level of "permanent" income that can be safely spent. A worker will save only if their current income is higher than the anticipated level of permanent income, in order to guard against future declines in income.

KEY TAKEAWAYS

- The permanent income hypothesis states that individuals will spend money at a level that is consistent with their expected long-term average income.
- Milton Friedman developed the permanent income hypothesis, believing that consumer spending is a result of estimated future income as opposed to consumption that is based on current after-tax income.
- Under the theory, if economic policies result in increased income, it will not necessarily translate into increased consumer spending.
- An individual's liquidity is a factor in their management of income and spending.

Understanding the Permanent Income Hypothesis

The permanent income hypothesis was formulated by the Nobel Prize-winning economist Milton Friedman in 1957. The hypothesis implies that changes in consumption behavior are not predictable because they are based on individual expectations. This has broad implications concerning economic policy.

Under this theory, even if economic policies are successful in increasing income in the economy, the policies may not kick off a multiplier effect in regards to increased consumer spending. Rather, the theory predicts that there will not be an uptick in consumer spending until workers reform expectations about their future incomes.

Milton believed that people will consume based on an estimate of their future income as opposed to what Keynesian economics proposed; people will consume based on their in the moment after-tax income. Milton's basis was that individuals prefer to smooth their consumption rather than let it bounce around as a result of short-term fluctuations in income.

Spending Habits Under the Permanent Income Hypothesis

If a worker is aware that they are likely to receive an income bonus at the end of a particular pay period, it is plausible that the worker's spending in advance of that bonus may change in anticipation of the additional earnings. However, it is also possible that workers may choose to not increase their spending based solely on a short-term windfall. They may instead make efforts to increase their savings, based on the expected boost in income.

Something similar can be said of individuals who are informed that they are to receive an inheritance. Their personal expenditures could change to take advantage of the anticipated influx of funds, but per this theory, they may maintain their current spending levels in order to save the supplemental assets. Or, they may seek to invest those supplemental funds to provide long-term growth of their money rather than spend it immediately on disposable products and services.

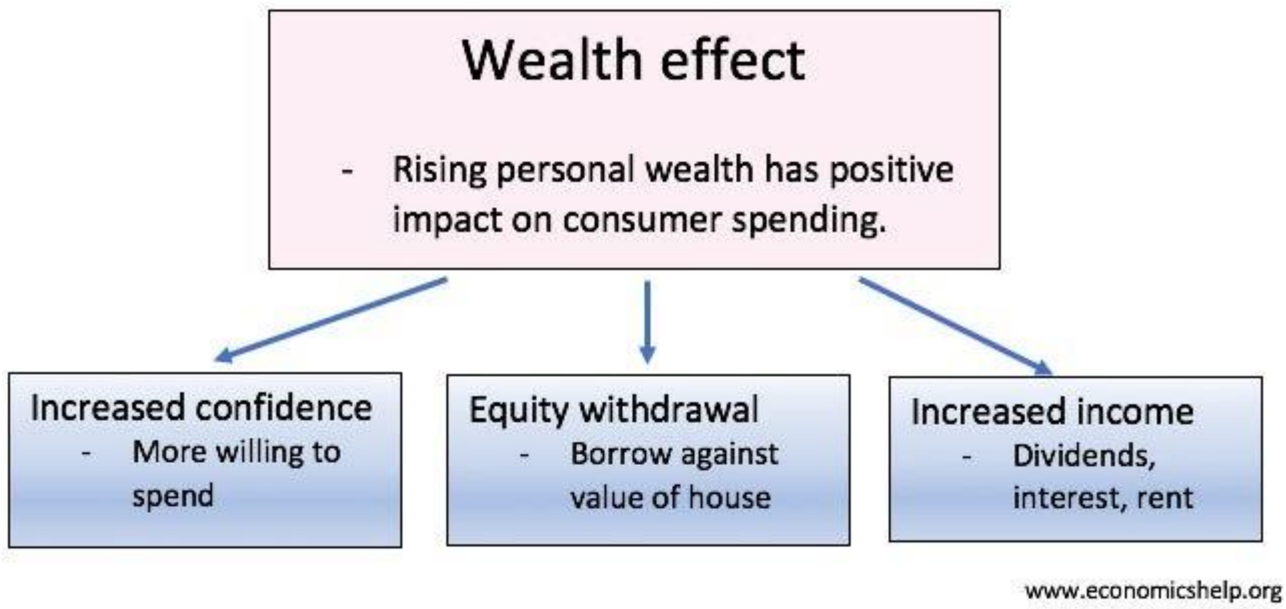
Liquidity and the Permanent Income Hypothesis

The liquidity of the individual can play a role in future income expectations. Individuals with no assets may already be in the habit of spending without regard to their income; current or future.

Changes over time, however—through incremental salary raises or the assumption of new long-term jobs that bring higher, sustained pay—can lead to changes in permanent income. With their expectations elevated, employees may allow their expenditures to scale up in turn.

The wealth effect

The wealth effect examines how a change in personal wealth influences consumer spending and economic growth. Rising wealth has a positive impact on consumer spending.



Wealth is a stock concept. At a particular time, your wealth is fixed. Wealth is comprised of savings, bonds, property and assets.

A major form of wealth in the western countries is the value of their house. If house prices, increase, then it tends to cause a positive wealth effect. Similarly, a fall in the value of wealth can have a negative impact on consumer spending and economic growth.

The impact of a change in wealth

If households see an increase in their personal wealth, it will have the following effects:

1. Increase in confidence to spend, borrow and take risks. During a period of rising wealth, we may see a fall in the savings ratio.
2. Increased ability to re-mortgage and take equity withdrawal. Suppose you take out a mortgage for £100,000 on a house valued £120,000. If house prices double to £240,000. A bank is maybe willing to give you a bigger mortgage. This means you can gain a lump sum to spend on buying a car, school fees, a gap year.
3. Increased wealth can lead to higher income. Higher wealth may enable higher income from dividends, rent or interest. A householder seeing a rise in house prices may not see much increase in income, but they could always sell the house to finance retirement home.

Other impacts of rising wealth

1. In addition, rising house prices will have influence on banks. With rising house prices, they may be more willing to lend mortgages
2. Governments will see rising tax revenue – if they have taxes on wealth, such as stamp duty.
3.

Life cycle theories

Some life-cycle theories of consumer spending state that wealth is an important factor in determining spending – with households using wealth to smooth consumption over a life-cycle. Therefore, changes in wealth will influence this average spending level.

II MBE/MACRO ECONOMICS/ UNIT-III

RELATIVE INCOME THEORY OF CONSUMPTION:

An American economist J.S. Duesenberry put forward the theory of consumer behaviour which lays stress on relative income of an individual rather than his absolute income as a determinant of his consumption. Another important departure made by Duesenberry from Keynes's consumption theory is that, according to him, the consumption of a person does not depend on his current income but on certain previously reached income level.

According to Duesenberry's relative income hypothesis, consumption of an individual is not the function of his absolute income but of his relative position in the income distribution in a society, that is, his consumption depends on his income relative to the incomes of other individuals in the society. For example, if the incomes of all individuals in a society increase by the same percentage, then his relative income would remain the same, though his absolute income would have increased.

According to Duesenberry, because his relative income has remained the same the individual will spend the same proportion of his income on consumption as he was doing before the absolute increase in his income. That is, his average propensity to consume (APC) will remain the same despite the increase in his absolute income.

As mentioned above, empirical studies based on time-series data made by Kuznets reveal that over a long period the average propensity to consume remains almost constant. Now, Duesenberry's relative income hypothesis suggests that in the long run the community would continue to consume the same proportion of income as its income increases.

According to Duesenberry, saving as a proportion of income of the individuals with relatively low incomes would not rise much with the increase in their incomes. That is, their savings would not rise to the same proportion of income as was being done by the individuals who had the same higher income prior to the present increase in income.

This is because with the increase in incomes of all individuals by the same proportion, the relative incomes of the individuals would not change and therefore they would consume the same proportion of their income. This applies to all individuals and households. It therefore follows that assuming that relative distribution of income remains the same with the growth of income of a society, its average propensity to consume (APC) would remain constant.

Thus, this conclusion of the relative income hypothesis differs from the Keynesian theory of consumption according to which, as seen above, as absolute income of a community increases, it will devote a smaller proportion of its income to consumption expenditure, that is, its APC will decline.

It is important to note that relative income theory implies that with the increase in income of a community, the relative distribution of income remaining the same, does not move along the same aggregate consumption function, but its consumption function shifts upward. Since as income increases, movement along the same consumption function curve implies a fall in average propensity to consume, Duesenberry's relative income hypothesis suggests that as income increases consumption function curve shifts above so that average propensity to consume remains constant.

This is illustrated in Figure 7.1. Suppose a family A' has Y_1 level of income and is spending Y_1A' on consumption. Suppose its income level rises to Y_2. Now, its consumption would not rise only to Y_2B (i.e. equal to the consumption of the family B at Y_2 income level) but to Y_2A' where A' lies on the same ray from the origin as the previous point A of consumption. This implies that the consumption expenditure of family A has risen in the same proportion as its income with the result that its average propensity to consume remains constant.

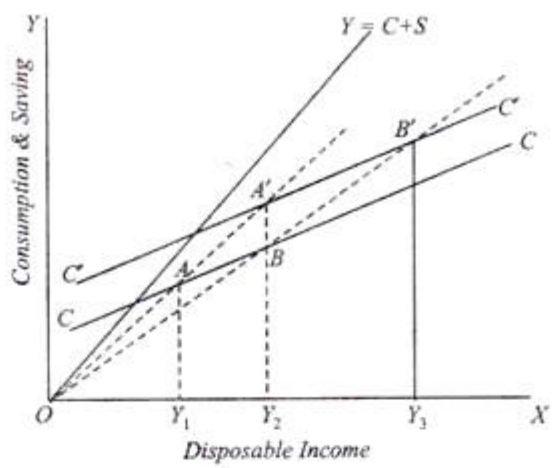


Fig. 7.1. *Duesenberry's Relative Income Theory of Consumption*

Likewise, if income of family B which is having consumption expenditure Y_2B at income level Y_2, rises to Y_3, its consumption expenditure will increase to Y_3B' where B' lies on the same ray from the origin as B. This again means that the proportion of income devoted to consumption by family B (i.e. its APC) remains constant as there is increase in its absolute income.

Thus, if the proportion of income devoted to consumption of the average family at each income level remains the same as its income increases, the aggregate consumption of the community as proportion of its income will also remain constant though its absolute consumption and absolute savings will increase with the absolute increase in income.

As income increases and a society moves along the same consumption function curve, its average propensity to consume falls. But Duesenberry's relative income hypothesis suggests that as income increases consumption function curver shifts above so that average propensity to consume remains constant. In Figure 7.1 it will be seen that if points A' and B' are joined together, we get, a new consumption function curve C'C'.

Demonstration Effect:

By emphasising relative income as a determinant of consumption, the relative income hypothesis suggests that individuals or households try to imitate or copy the consumption levels of their neighbours or other families in a particular community. This is called demonstration effect or Duesenberry effect. Two things follows from this. First, the average propensity to consume does not fall.

This is because if incomes of all families increase in the same proportion, distribution of relative incomes would remain unchanged and therefore the proportion of consumption expenditure to income which depends on relative income will remain constant.

Secondly, a family with a given income would devote more of his income to consumption if it is living in a community in which that income is regarded as relatively low because of the working of demonstration effect. On the other hand, a family will spend a lower proportion of its income if it is living in a community in which that income is considered as relatively high because demonstration effect will not be present in this case.

For example, the recent studies of household expenditure made in India reveal that the families with a given income, say Rs. 5000 per month spend a larger proportion of their income on consumption if they live in urban areas as compared to their counterparts in rural areas.

The higher propensity to consume of families living in urban areas is due to the working of demonstration effect where families with relatively higher income reside whose higher consumption standards tempt others in lower income brackets to consume more.

Ratchet Effect:

The other significant part of Duesenberry's relative income hypothesis is that it suggests that when income of individuals or households falls, their consumption expenditure does not fall much. This is often called a ratchet effect. This is because, according to Duesenberry, the people try to maintain their consumption at the highest level attained earlier. This is partly due to the demonstration effect explained above. People do not want to show to their neighbours that they no longer afford to maintain their high standard of living.

Further, this is also partly due to the fact that they become accustomed to their previous higher level of consumption and it is quite hard and difficult to reduce their consumption expenditure when their income has fallen. They maintain their earlier consumption level by reducing their savings. Therefore, the fall in their income, as during the period of recession or depression, does not result in decrease in consumption expenditure very much as one would conclude from family budget studies.

This is illustrated in Figure 7.2 where on the X-axis we measure disposable income and on the Y- axis the consumption and savings. Starting with disposable income of zero, we assume that there is steady growth of disposable income till it reaches Y_1 .The linear consumption function C_{LR} is the long- run consumption function. It will be seen from the figure that at Y_1 level of disposable income, the consumption expenditure equals Y_1C_1 .Now suppose with initial income level Y_1 there is recession in the economy with the result that disposable income falls to the level Y_o.

According to Duesenberry, consumption would not fall greatly to the level Y_oC_o as the long-run consumption function curve C_{LR} would suggest. In their bid to maintain their consumption level previously reached people would now save less and reduce their consumption level only slightly to $Y_oC'_o$ whereas point C'_o is on the short- run consumption function curve C_{SR}.

Since $Y_oC'_o > Y_oC_o$, the average propensity to consume at income level $Y_o$is greater at C'_o than at C_1 at income level Y_1 (A ray drawn from the origin to the point C'_o will have greater slope than that of OC_1). When the economy recovers from recession and disposable income increases, the economy would move along the short-run consumption function curve C_{SR} till the consumption level C_1 is reached at income level Y_1. Beyond this, with the growth of income the consumption will increase along the long-run consumption function curve CL_R.

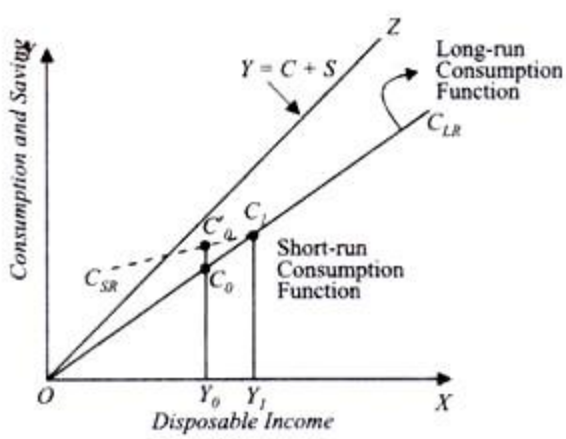


Fig. 7.2. *Duesenberry's Ratchet Effect*

Aggregate consumption function of the community:

From the analysis of demonstration and ratchet effects it follows that Duesenberry's relative income hypothesis provides an explanation for why aggregate consumption function of the community may be flatter than the family budget studies would suggest. Duesenberry emphasizes that it is relative income rather than absolute income which determines consumption expenditure of households.

When income of the community increases, relative income remaining constant, the proportion of consumption expenditure to income will not increase much because relative incomes of the households remain the same (Note that this implies that saving ratio will not rise much).

Due to demonstration effect every household will increase its expenditure in the same proportion as the increase in income. On the other hand, if the income of the community decreases, the consumption expenditure would not decline much due to the ratchet effect according to which people try to maintain their previously attained higher level of consumption. This makes the consumption function of the community flatter than suggested by the cross-sectional family budget studies.

Further, it also follows from the Duesenberry relative income hypothesis that short-run aggregate consumption function of the community is linear rather than curved. As stated above, if, in the short run, the level of income increases, the proportion of consumption expenditure to income is not likely to increase much due to the operation of demonstration effect and with the fall in income the proportion of consumption to income is not likely to decline much due to the ratchet effect.

This makes the short-run aggregate consumption function of the community linear. It is worth noting that Duesenberry's theory assumes that relative distribution of income does not change much. This is in accord with the facts of the real world situation where changes in income distribution do not take place in the short run. Thus Duesenberry's theory provides a convincing explanation in terms of demonstration and ratchet effects why aggregate consumption function is linear rather than nonlinear.

The Financial Theory of Investment:

The financial theory of investment has been developed by James Duesenberry. It is also known as the cost of capital theory of investment. The accelerator theories ignore the role of cost of capital in investment decision by the firm.

They assume that the market rate of interest represents the cost of capital to the firm which does not change with the amount of investment it makes. It means that unlimited funds are available to the firm at the market rate of interest.

In other words, the supply of funds to the firm is very elastic. In reality, an unlimited supply of funds is not available to the firm in any time period at the market rate of interest. As more and more funds are required by it for investment spending, the cost of funds (rate of interest) rises. To finance investment spending, the firm may borrow in the market at whatever interest rate funds are available.

Sources of Funds:

Actually, there are three sources of funds available to the firm for investment which are grouped under internal funds and external funds.

These are:

(1) Retained earnings which include undistributed profits after taxes and depreciation allowances are internal funds.

(2) Borrowing from banks or through the bond market; and borrowing through equity financing or by issuing new stock (shares) in the stock market are the sources of external funds.

1. Retained Earnings:

Retained earnings are the cheapest source of funds because the cost of using these funds is very low in the short run. There is no risk involved in spending these retained earnings or to repay debt. In fact, the cost of using these funds is the opportunity cost which is the return that the firm could obtain to repay debt or to buy the shares of other companies.

The opportunity cost of internal funds will be less than the cost of external funds. When the firm lends these funds to other borrowers, it usually earns the market rate of interest. If it borrows funds from banks or through the bond market, it has to pay a higher interest rate. This difference in interest rate is the opportunity cost to the firm.

2. Borrowed Funds:

When the firm needs funds more than the retained earnings, it borrows from the banks or through the bond market. The cost of borrowed funds (rate of interest) rises with the amount of borrowing. As the ratio of debt service to earnings from investment of funds rises, the marginal cost of borrowed funds rises. This is because the opportunity cost (risk) of not repaying debt increases.

3. Equity Issue:

A third source is equity financing by issuing new shares in the stock market. The imputed cost of equity funds is more costly than the opportunity cost of retained earnings or borrowed funds. Duesenberry points out that "the yield cost of equity finance is usually of the order of 7 to 10 percent for large firms. To this must be added floatation costs plus any reduction in the value of existing shares resulting from the issue. The differential is further increased by the differential tax treatment of bond and equity finance."

Cost of Funds:

The cost of capital to the firm will vary according to its source and how much funds it requires. Keeping these considerations in view, we construct the marginal cost of funds curve MCF in Figure 8 which shows the various sources of funds. The cost of funds is measured on the vertical axis and the amount of investment funds on the horizontal axis.

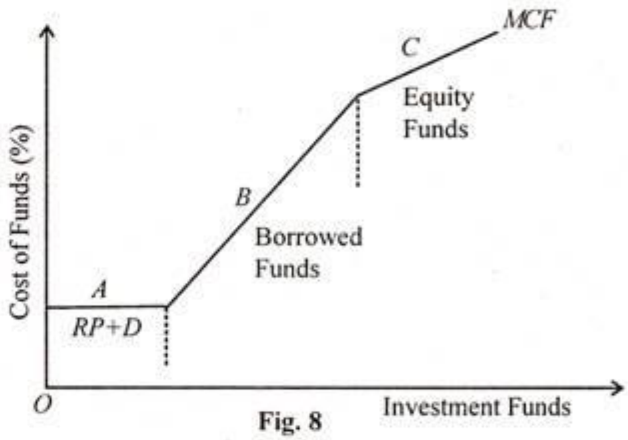


Fig. 8

Region A of the MCF curve shows financing done by the firm from retained profits (RP) and depreciation (D). In this region, the MCF curve is perfectly elastic which means the true cost of funds to the firm is equal to the market rate of interest.

The opportunity cost of funds is the interest forgone which the firm could earn by investing its funds elsewhere. No risk factor is involved in this region. Region B represents funds borrowed by the firm from banks or through the bond market.

The upward slope of the MCF curve shows that the market rate of interest for borrowed funds rises as their amount increases. But the sharp rise in the cost of borrowing is not only due to a rise in the market rate of interest but also due to the imputed risk of increased debt servicing by the firm. Region C represents equity financing.

No imputed risk is involved in it because the firm is not required to pay dividends. The gradual upward slope of MCF curve is due to the fact that as the firm issues more and more of its stock, its market price will fall and the yield will rise.

The cost of funds may vary from firm to firm and consequently the shape and position of the MCF curve will differ from one firm to another. But in general, it will be like the MCF curve of Figure 8. If we aggregate MCF curves of different firms there will be a smooth S-shaped MCF_1 curve, as in Figure 9. This curve shifts upward from MCF_1 to MCF_2 when the cost of funds (interest rate) rises from R_1 to R_2 and shifts downward from MCF_2 to MCF_1 with the fall in the cost of funds from R_2 to R_1.

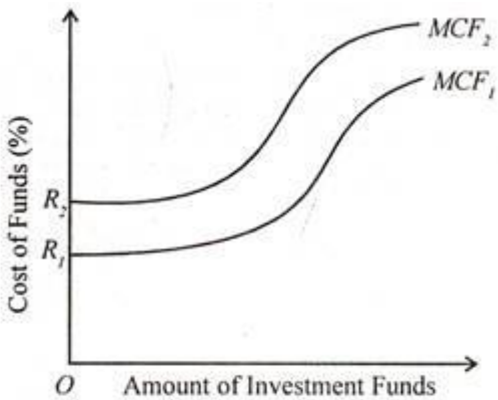


Fig. 9

The amount of investment funds is determined by the intersection of ME1 and MCF curves. The main determinants of the MEI curve are the rate of investment, output (income), level of capital stock and its age and rate of technical change. The determinants of MCF are retained earnings (profits minus dividends), depreciation, debt position of firms and market interest rate.

It is the shifts of the MEI and MFC curves that determine the level of investment funds. Suppose the MEI and MCF curves interest at point E in Figure 10 which determines OI investment at the interest rate (the cost of funds) OR. If the MCF curve shifts to the right to

MCF_1 with the increase in retained earnings (profits) of the firm, the MEI curve will cut the MCF_1 curve at E_1.

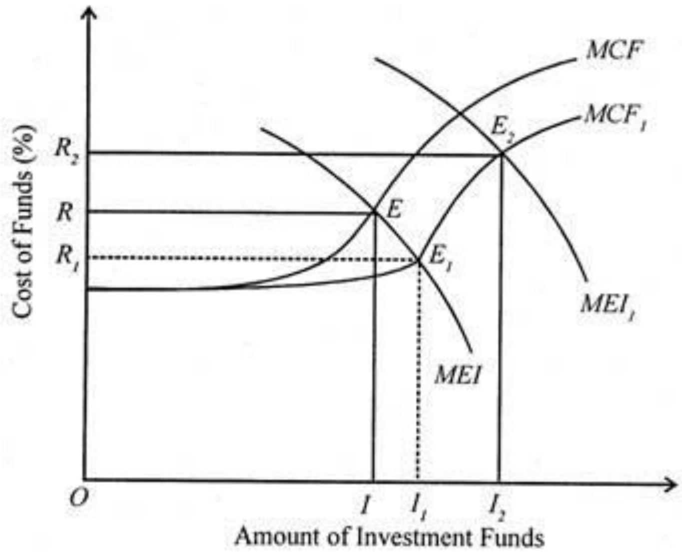


Fig. 10

The cost of funds will fall from OR to OR_1 but investment funds will rise to OI_1 from OI. On the other hand, if the MEI curve shifts to the right to MEI_1 with the increase in income and capital stock, it will cut the MCF_1 curve at point E_2. There will be increase in both the cost of funds to OR_2 and in the investment funds to OI_2.

The above explanation is related to the short-run behaviour of MEI and MCF curves. But the same factors that determine the position and shifts of these curves have different effects over the business cycle.

Since the MEI curve depends primarily on output, it shifts backward to the left to MEI_1 when output (income) decreases in a recession, as shown in Figure 11. Both MEI and MEI_1 curves intersect the MCF curve in its perfectly elastic region. In a recession, retained profits decline but depreciation allowances remain with firms.

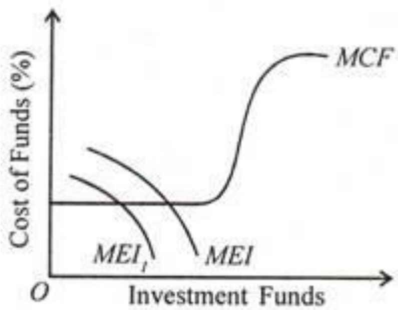


Fig. 11

So the elastic portion of the MCF curve becomes shorter. Meyer and Kuh found that firms generally spend more of their retained earnings in recessions and a low interest rate does not have any effect on investment. But when recovery starts, the MEI_1 curve shifts outward to the right to MEI.

As a result, there is an increase in investment spending of the firm out of its retained earnings in the perfectly elastic portion of the MCF curve. Thus during a recession, monetary policy or the market rate of interest plays no role in determining the cost of capital of a firm.

On the other hand, during a boom when output increases, the MEI curve shifts outward to the right to MEI_1 and intersects the MCF curve in its elastic rising region, as shown in Figure 12. In the upswing leading to boom, firms borrow funds on interest for investment spending. Thus monetary policy or interest rate is an important determinant of investment only in boom years.

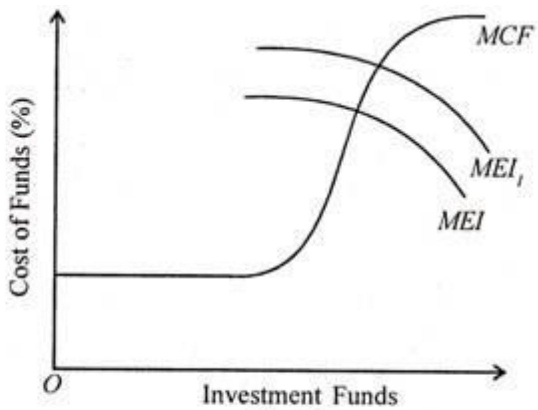


Fig. 12

Its Criticisms:

The financial theory of investment has been criticised on the following grounds:

1. The results of studies by Meyer and Kuh on investment behaviour of firms show that when demand is expanding rapidly, capacity expansion is the most important determinant of business investment during boom periods. In terms of our Figure 8, the MEI curve intersects the MCF curve in region B. In recessions and early years of recovery, the MEI curve shifts back to region A, and the level of retained earnings provides the best explanation of investment spending.

2. Meyer and Kuh found that firms take a longer view while making investment spending, whereas Duesenberry explains a short-run model of investment. Their results indicate that firms primarily invest in capacity expansion during a boom period and their overall level of investment will not fall as much as indicated by Duesenberry's short-run model when the interest rate rises. On the other hand, firms generally spend most of their retained earnings on technological

improvements to reduce costs and on advertisement to increase their market share.

3. Empirical evidence in the theory of investment by Kuh and Meyer shows that monetary policy is the least effective of all the macroeconomic policy instruments. In the analysis represented in Figure 10, we have seen that the market rate of interest plays only a small role in the financial theory of investment. Critics point out that the main effect of rising interest rates would be to increase the steepness (or reduce the elasticity) of region B of the MCF curve.

This would stop investment when retained earnings of firms had been exhausted. On the other hand, declining interest rates would flatten (increase the elasticity) region B of the MCF curve. This would have no effect in a recession if firms finance their investment spending from retained earnings. Thus monetary policy would be more effective in controlling a boom than in stimulating investment in recession.

4. This theory neglects the role of fiscal policy in investment which is more effective than monetary policy. A reduction in corporate taxes in a recession can increase investment by firms. On the other hand, an increase in corporate taxes can reduce investment and shift the MCF curve to the left.

Changes in depreciation allowances can also help in manipulating investment in recessions and booms. Investment spending is also influenced by the level and changes in aggregate demand. Besides taxes, expenditure policy and other government measures also affect aggregate demand and the MEI curve which in turn influence the level of investment.

The Profits Theory of Investment:

The profits theory regards profits, in particular undistributed profits, as a source of internal funds for financing investment. Investment depends on profits and profits, in turn, depend on income. In this theory, profits relate to the level of current profits and of the recent past.

If total income and total profits are high, the retained earnings of firms are also high, and vice versa, Retained earnings are of great importance for small and large firms when the capital market is imperfect because it is cheaper to use them.

Thus if profits are high, the retained earnings are also high. The cost of capital is low and the optimal capital stock is large. That is why firms prefer to reinvest their extra profit for making investments instead of keeping them in banks in order to buy securities or to give dividends to shareholders. Contrariwise, when their profits fall, they cut their investment projects. This is the liquidity version of the profits theory.

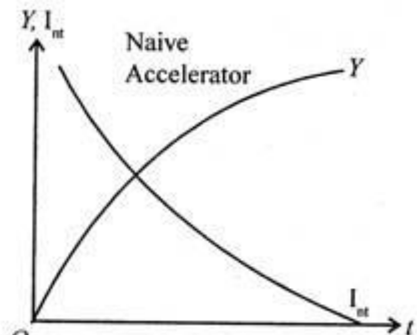


Fig. 6

Another version is that the optimal capital stock is a function of expected profits. If the aggregate profits in the economy and business profits are rising, they may lead to the expectation of their continued increase in the future. Thus expected profits are some function of actual profits in the past,

$K_t = f(\pi_{t-1})$

Where K is the optimal capital stock and f (π_{t-1}) is some function of past actual profits.

Edward Shapiro has developed the profits theory of investment in which total profits vary directly with the income level. For each level of profits, there is an optimal capital stock. The optimal capital stock varies directly with the level of profits.

The interest rate and the level of profits, in turn, determine the optimal capital stock. For any particular level of profits, the higher the interest rate, the smaller will be the optimal capital stock, and vice versa. This version of the profits theory is explained in terms of Figure7.

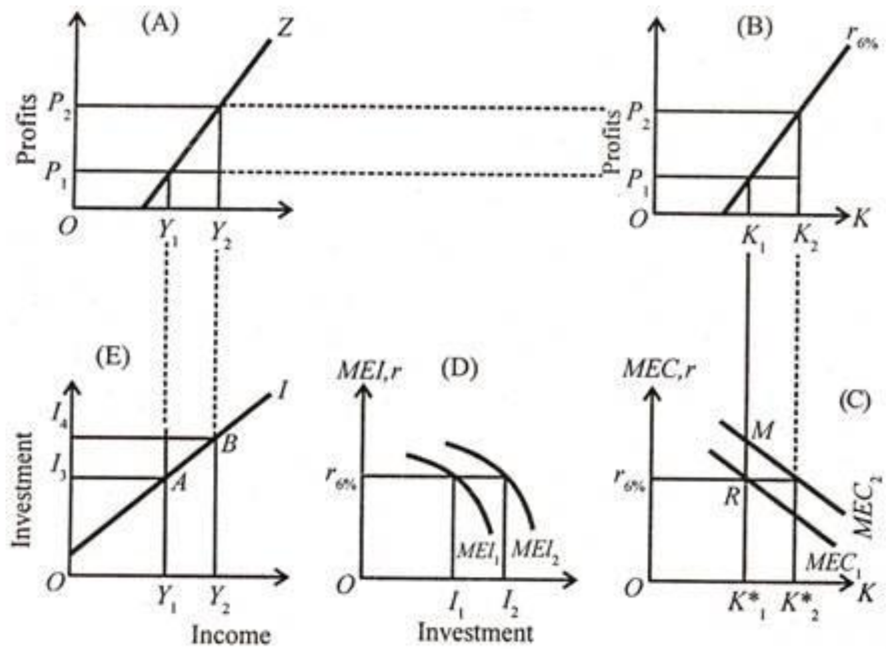


Fig. 7

The curve Z in Panel (A) shows that total profits vary directly with income. When the income is Y_1, profits are P_1 and with increase in income to Y_2 profits rise to P_2. Panel (B) shows that the interest rate and the profits level determine the capital stock. At P_2 profits levels and r6% interest rate, the actual capital stock is K_2 and at the lower profits level P and interest rate r6%, the actual capital stock declines to K_1.

In Panel (C), the MEC curve is drawn for each level of profits, given the actual capital stock and the rate of interest. As such, the curve MEC_1 relates the profits level P_1 to the optimal capital stock K_1 when r6% is the interest rate. The higher curve MEC_2 relates the profit level P_2 to the higher optimal capital stock K_2, given the same rate of interest r 6%.

Suppose that the level of profits is P_1, the market interest rate is r6% and the actual capital stock is K_1. With this combination of the variables, the optimal capital stock in Panel (C) is K so that the actual capital stock, $K_1 = K_1$ the optimal capital stock.

As a result, net investment is zero. But there is still I_1 replacement investment at r6%, as indicated by MEI_1 curve in Panel (D). The combination of I_2 investment and Y_1 income level establishes point A on the investment curve I in Panel (E) of the figure.

Now begin with P_2 level of profits and Y_2 income level in Panel (A) so that at r6% interest rate in Panel (C), the optimal capital stock is K_2. Assuming again that the actual capital stock is K_1, the optimal capital stock is greater than the actual, $K_2 > K_1$ at this profit-income combination.

Here the MEC_2 is higher than r6% interest rate by RM. As a result, the MEI_1 curve shifts upward to MEI_2 in Panel (D). Since $K_2 > K_1$ net investment is positive. This is shown by $I_1 - I_2$ in Panel (D). So when profits increase to P_2 with the rise in income to Y_2, the optimal capital stock K_2 being greater than the actual capital stock K_1 at r6% interest rate, investment increases from I_3 to I_4 in Panel (E) which is equal to net investment I_1I_2 in Panel (D). The combination of I_4 and Y_2, establishes point B on the upward sloping I curve.

To sum up, in the profits theory of investment, the level of aggregate profits varies with the level of national income, and the optimal capital stock varies with the level of aggregate profits. If at a particular level of profits, the optimal capital stock exceeds the actual capital stock, there is increase in investment to meet the demand for capital. But the relationships between investment and profits and between aggregate profits and income are not proportional.

It's Criticism:

The theory is based on the assumption that profits are related to the level of current profits and of the recent past. But there is no possibility that the firm's current profit of this year or of the next few years can measure the profits of the next year or of the next few years. A rise in current profits may be the result of unexpected changes of a temporary nature. Such temporary profits do not induce investment.

Tobin's Q Theory of Investment:

Nobel laureate economist James Tobin has proposed the q theory of investment which links a firm's investment decisions to fluctuations in the stock market. When a firm finances its capital for investment by issuing shares in the stock market, its share prices reflect the investment decisions of the firm.

Firm's investment decisions depend on the following ratio, called Tobin's q:

q = Market Value of Capital Stock/Replacement Cost of Capital

The market value of firm's capital stock in the numerator is the value of its capital as determined by the stock market. The replacement cost of firm's capital in the denominator is the actual cost of existing capital stock if it is purchased at today's price. Thus Tobin's q theory explains net investment by relating the market value of firm's financial assets (the market value of its shares) to the replacement cost of its real capital (shares).

According to Tobin, net investment would depend on whether q is greater than ($q>1$) or less than 1 ($q<1$). If $q> 1$, the market value of the firm's shares in the stock market is more than the replacement cost of its real capital, machinery etc.

The firm can buy more capital and issue additional shares in the stock market. In this way, by selling new shares, the firm can earn profit and finance new investment. Conversely, if $q<1$, the market value of its shares is less than its replacement cost and the firm will not replace capital (machinery) as it wears out.

Let us explain it with the help of an example. Suppose a firm raises finance for investment by issuing 10 lakh shares in the stock market at Rs 10 per share. Currently, their market value is Rs 20 per share. If the replacement cost of the firm's real capital is Rs 2 crores then the q ratio is 1.00 (= Rs 2 crores market value / Rs 2 crores replacement cost).

Suppose the market value rises to Rs 40 per share. Now the q ratio is 2 (=Rs 40/ Rs20). Now the market value of its shares gives Rs 2 crores (=Rs 4 crores-Rs 2 crores) as profit to the firm. The firm raises its capital stock by issuing 5 lakh additional shares at Rs 40 per share. Rs 2 crores collected through the sale of 5 lakh shares are utilised for financing new investment by the firm.

Panels (A) and (B) of Fig. 15 illustrate how an increase in Tobin's q induces a rise in the firm's new investment. It shows that an increase in the demand for shares raises their market value which raises the value of q and investment.

The demand for capital is shown by the demand curve D in Panel (A). The relative value of q is taken as unity, as the market value and replacement cost of capital stock are assumed equal. The initial equilibrium is determined by the interaction of demand for capital and the available supply of capital stock OK at point E, which is fixed in the short run.

The demand for capital depends mainly on two factors. First, the level of wealth of the people. The higher is the level of wealth, the more shares people wish to have in their wealth portfolio. Second, the real return on other assets such as government bonds or real estate.

A fall in the real interest rate on government bonds would induce people to invest in shares than in other forms of wealth. This would increase the demand for capital and raise the market value of capital above its replacement cost.

This means rise in the value of Tobin's q above unity. This is shown as the rightward shift of the demand curve to D_1. The new equilibrium is established at E_1 in the long run when the replacement cost rises and equals the market value of capital. The rise in the value of q to q_1 induces an increase in new investment to OI, as shown in Panel (B) of the figure.

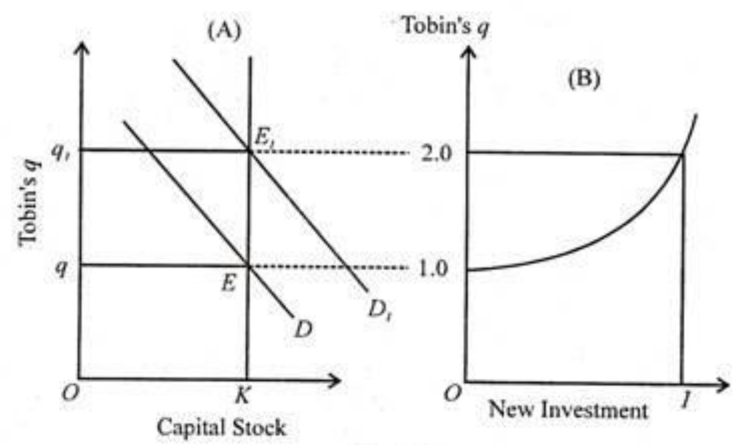


Fig. 15

Implications:

Tobin's q theory of investment has important implications. Tobin's q ratio provides an incentive to invest for firms on the basis of the stock market. It not only reflects the current profitability of capital but also its expected future profitability. Investment is expected to be higher in the future when the value of q is larger than 1.

Tobin's q theory of investment induces firms to undertake net investment even when q is less than 1 in the present. They may adopt such economic policies which bring future profitability by raising the market value of their shares.