Consumption Function

Introduction:
According to Keynesian theory given the aggregate supply, the level of income or employment is determined by the level of aggregate demand. The greater the aggregate demand, the greater the level of income and employment.

In this theory factors determining the aggregate supply has no role to play in determining the level of income and employment.

What are **the determinants of Aggregate Demand?.**
Aggregate demand consists of two parts—consumption demand and investment demand.

We shall explain below the meaning of the consumption function and the factors on which it depends.
The Concept of Consumption Function:
consumption of a community depends upon the level of income. **In other words, consumption is a function of income**. When the income of a the consumer rises, consumption also rises.

We give below such a schedule of consumption function:

Income (Rs. in crores) Y	Consumption (Rs. in crores) C	Average Propensity to Consume $\left(\dfrac{C}{Y}\right)$	Marginal Propensity to Consume $\left(\dfrac{\Delta C}{\Delta Y}\right)$
1000	750	$\dfrac{750}{1000} = 0.75$	—
1100	825	$\dfrac{825}{1100} = 0.75$	$\dfrac{75}{100} = .75$
1200	900	$\dfrac{900}{1200} = 0.75$	$\dfrac{75}{100} = .75$
1300	975	$\dfrac{975}{1300} = 0.75$	$\dfrac{75}{100} = .75$
1400	1050	$\dfrac{1050}{1400} = 0.75$	$\dfrac{75}{100} = .75$
1500	1125	$\dfrac{1125}{1500} = 0.75$	$\dfrac{75}{100} = .75$
1600	1200	$\dfrac{1200}{1600} = 0.75$	$\dfrac{75}{100} = .75$

Table 6.1. Linear Consumption Function:

Consumption function is different from the amount of consumption.
 Consumption function - is the whole schedule which shows consumption at various levels of income

Amount of consumption means the amount consumed at a specific level of income.
The above schedule described above reflects the consumption function of a community i.e., it indicates how the consumption changes in response to the change in income.

In the above schedule it will be seen that at the level of income equal to Rs. 1200 crores, the amount of consumption is Rs. 900 crores. As the national income increases to Rs. 1500 crores, the consumption rises to Rs. 1125 crores. Thus, with a given consumption function, amount of consumption is different at different levels of income.

The above schedule of consumption function reveals an important fact that when income rises, consumption also rises but not as much as the income. The reason why consumption rises less than income is that a part of the increase in income is saved.

Therefore, we see that when income increases from Rs. 1000 crores to Rs. 1100 crores, the amount of consumption rises from Rs. 750 crores to 825 crores. Thus, with the increase in income by Rs. 100 crores, consumption rises by Rs. 75 crores; the remaining Rs. 25 crores are saved. Similarly, when income rises from Rs. 1100 crores to Rs. 1200 crores, the amount of consumption increases from Rs. 825 crores to Rs. 900 crores.

Here also, as a result of increase in income by Rs. 100, the amount of consumption has risen by Rs. 75 crores and the remaining Rs. 25 crores has been saved. The same applies to further increases in income and consumption.

We shall see later that Keynes based his theory of multiplier on the proposition that consumption increases less than income and this theory of multiplier occupies an important place in macroeconomics.

Consumption demand depends on income and propensity to consume. **Propensity to consume depends on various factors such as price level, interest rate, stock of wealth and several subjective factors**.
Since Keynes was concerned with short-run consumption function he assumed price level, interest rate, stock of wealth etc. constant in his theory of consumption. Thus with these factors being assumed constant in the short run, Keynesian consumption function considers consumption as a function of income. Thus

$C = f(Y)$

In a specific form, Keynesian function can be written as:

C = a + b(Y)

where a and b are constants. While a is intercept term of the consumption function, b stands for the slope of the consumption function and therefore represents marginal propensity to consume- change in consumption in response to change in income.

Keynesian consumption function has been depicted by CC' curve in Fig. 6.1 in which along the X-axis national income is measured and along the Y-axis the amount of consumption is measured.

In this figure, a line OZ making 45° angle with the X-axis, has been drawn. Because line OZ makes 45° angle with the X-axis every point on it is equidistant from both the X-axis and Y-axis.

In this figure that the consumption function curve CC' deviates from the 45° line OZ. At lower levels of income, the consumption function curve CC lies above the OZ line, implying that at these lower levels of income consumption is greater than the income.
 At lower levels of income, a nation may use its accumulated savings to maintain its consumption

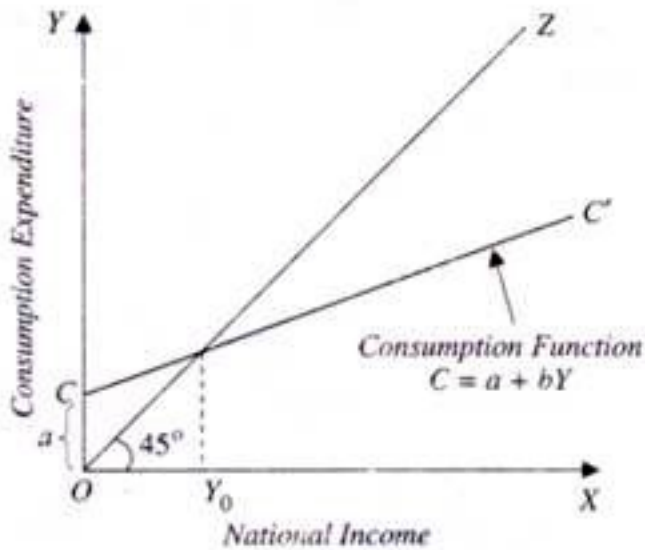standard or it may borrow from others. As income increases, consumption also increases and at the income level OY_o, consumption is equal to income.

Fig. 6.1. *Keynesian Linear Consumption Function*

Beyond this, with the increase in income, consumption increases but less than the increase in income and therefore, consumption function curve CC lies below the 45° line OZ beyond Y_o.

An important point to be noted here is that beyond the level of income OY_o, the gap between consumption and income is widening. The difference between consumption and income is savings. With the increase in income saving increases.
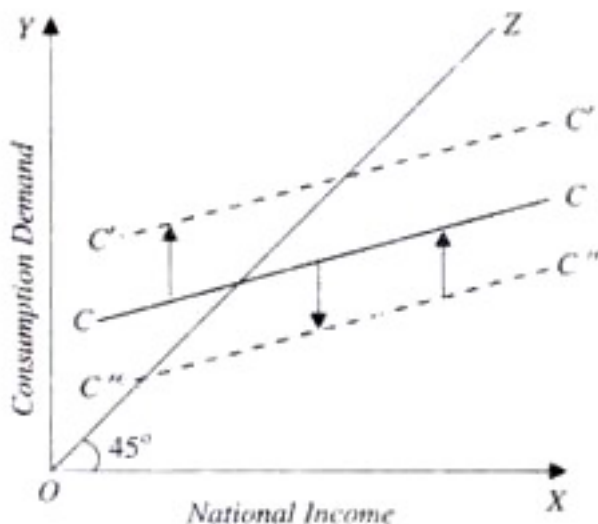

Fig. 6.2. Shift in Consumption Function

It is useful to point out here that when the consumption function of a community changes, the whole consumption function curve changes or shifts. When propensity to consume increases, it means that at various levels of income more is consumed than before.

Therefore, as a result of increase in propensity to consume of the community, the whole consumption function curve shifts upward as has been shown by the upper curve C'C' in Fig. 6.2. On the contrary, when the propensity to consume of the community decreases, the whole consumption function curve shifts downward signifying that at various levels of income, less is consumed than before.

Average and Marginal Propensity to Consume:
There are two important concepts of propensity to consume, the one being **average propensity to consume and the other marginal propensity to consume**.

In Table 6.1, we have calculated the average and marginal propensity to consume in columns 3 and 4. We know that consumption changes as income changes.

By how much consumption changes in response to a given change in income depends upon the average and marginal propensity to consume.

Average propensity to consume is the ratio of the amount of consumption to total income. Therefore, average propensity to consume is calculated by dividing the amount of consumption by the total income. Thus,

APC = C/Y, where

APC stands for average propensity to consume,

C for amount of consumption, and Y for the level of income.

In the Table 6.1 it will be seen that at the level of income Rs 1000 crores, consumption expenditure is equal to Rs. 750 crores. Therefore, average propensity to consume is here equal to 750/1000 = 0.75. Likewise, when the income rises to Rs. 1200 crores, consumption rises to Rs. 900 crores.

Therefore, the average propensity to consume will be 900/1200 = 0.75. In this schedule of consumption function, the average propensity to consume is the same at all levels of income. Keynesian consumption function CC is shown in Fig. 6.3.
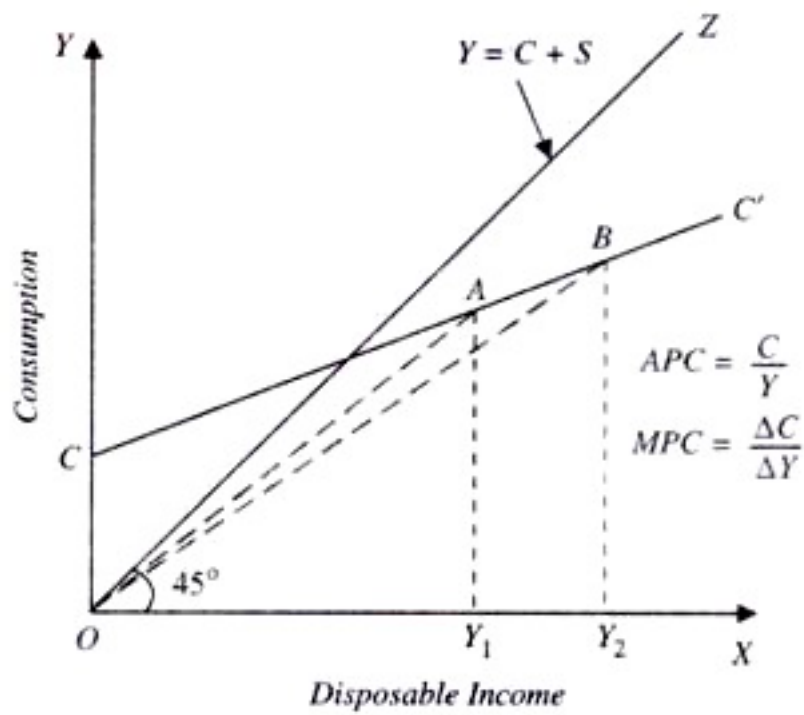
Fig. 6.3. *Consumption Function: Declining Average Propensity to Consume*

Average propensity to consume at a point on the consumption function curve can be obtained by measuring the slope of the ray from the origin to that point. For example, at income level OY_1 corresponding point on the consumption function curve is A. Therefore, at OY_1 income level, average propensity to consume (APC) is the slope of the ray OA. Similarly, at income level OY_2, average propensity to consume is the slope of the ray OB. It will be observed from Fig.6.3 that slope of OB is less than that of OA. Therefore, average propensity to consume at income level OY_2 is less than that at income level OY_1. In other words average propensity to consume has declined with the increase in disposable income.

Marginal Propensity to Consume:

The concept of marginal propensity to consume is very important, because from it we can know how much part of the increment in income is consumed and how much saved. Marginal propensity to consume is the ratio of change in consumption to the change in income.

Thus:

$MPC = \Delta C / \Delta Y$

where, MPC stands for marginal propensity to consume, ΔC for change in consumption, and ΔY for change in income.

marginal propensity to consume is the ratio of change in consumption to the change in income, i.e. ΔC/ΔY.

In the consumption function depicted in Fig. 6.3, though average propensity to consume (C/Y) declines, marginal propensity to consume which equals ΔC/ΔY remains constant since consumption function curve CC' is a straight line and therefore its slope (ΔC/ΔY) is constant.

When average propensity to consume remains constant as in Table 6.1, marginal propensity to consume is equal to it. In Table 6.1, average propensity to consume remains constant at 0.75 and from its 4th column it will be seen that marginal propensity to consume is also 0.75.

In Fig. 6.1 and Fig. 6.3 propensity to consume curve is a straight line i.e., the slope of the consumption function curve remains constant. Therefore, marginal

propensity to consume which is given by the slope of the propensity to consume curve remains constant in Fig. 6.1.

Note that marginal propensity to consume is neither zero nor equal to one. It has been found by empirical studies that marginal propensity to consume varies between zero and unity. If the marginal propensity to consume was zero, then the whole of the increment in income would have been saved and the consumption function curve would have a horizontal shape. This is not realistic. On the other hand, if the marginal propensity to consume was equal to unity, then the whole of the increase in income would be equal to increase in consumption and in that case consumption function curve would coincide with 45° line.