CONSUMPTION FUNCTION

We start the simple Keynesian model of income determination in a closed economy with the aggregate demand and aggregate supply. In a country we can calculate the national income by income method, expenditure method or the production (value added) method. The total income is equal to the total production which is equal to the total expenditure.

Total income= total production=total expenditure

In a simple Keynesian model, the aggregate demand is given by the total consumption. When the aggregate demand (AD) is greater than the aggregate supply (AS), then there will be more of production taking place since the inventories (stock of goods) fall. When the AD is less than the AS then there is be more of goods that wasn't sold and the inventories will increase which will result in lowering of production.

In a closed economy (an economy which isn't open for trade) the total consumption is done by the household, the firms and the Government. These are the different components that constitute the aggregate demand. The aggregate supply of an economy is the total production of the economy and that is also equal to the total income. Therefore, the simple Keynesian model of income determination can be given by the following equation

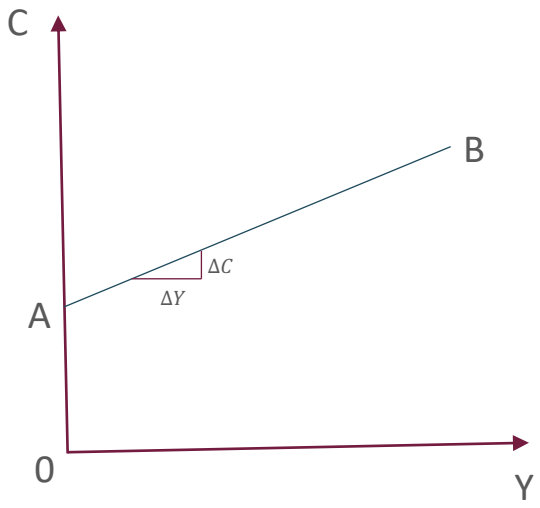
$$Y= C + I + G$$

Before we look into the model let us first understand each component of the equation individually.

CONSUMPTION FUNCTION

Consumption is the use of goods and services in order to satisfy one's need. The income spend on consumption of goods and services is called consumption expenditure.

According to Keynes, the consumption expenditure of a country depends on the nation income of the country. The relationship between consumption expenditure and income is given by the consumption function which is given by C = C(Y). this function shows the different amount to consumption that is done at various levels of income. The graphical representation of this function is called the consumption function curve where the level of consumption is given in the y-axis and the level of income is given in the x-axis. This is an upward sloping line because as the income increase the consumption also increases.



This curve doesn't start from origin 0, but rather it starts positive level of consumption 0A because it is impossible for an individual to survive without consumption. Therefore, even if the national income is 0, we still have a positive consumption function. So, the consumption function is rewritten as

$$C = C(Y).$$

$$C = C_0 + c(Y).$$

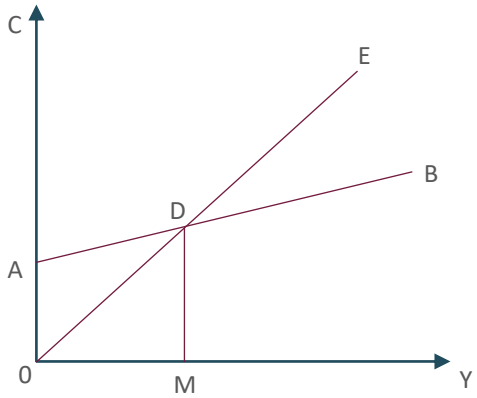
Where,

C_0 = autonomous/fixed consumption (consumption when the income is 0)

c = marginal propensity to consume (mpc). It is the slope of the consumption function and given as $\frac{\Delta C}{\Delta Y}$

Important points to remember

- There exists a relationship between the income and the consumption which is given by the consumption function.
- Marginal propensity to consume shows the change in the consumption when the income changes. It is given by the ratio of the change in consumption to the change in income, $\frac{\Delta C}{\Delta Y}$. mpc always lies between 0 to 1, 0 < mpc < 1. This means that if the national income changes by 1 unit the consumption changes by a fraction of the income. This is also the slope of the consumption function and will remain constant throughout the consumption function curve. When income increases consumption increases but the increase in consumption will be less than the increase in income.
- Average propensity to consume (apc) is the ratio of the consumption to the income, $\frac{C}{Y}$. As the income increases the average propensity to consume decreases and vice versa. 0E is the 45° line which shows income = consumption. $\frac{C}{Y}$ can be < or > 1. When the $\frac{C}{Y}$ < 1, consumption is smaller than income like the part after DM and when $\frac{C}{Y}$ > 1, consumption is greater than income like the part before DM. When the consumption is at point D, the apc is given by the ratio $\frac{0D}{0M}$ (we get it by joining the consumption point with the origin and x-axis.)



- Value of marginal propensity to consume will remain constant or decrease along with the increase in national income, but it will not increase

FACTORS DETERMINING PROPENCITY TO CONSUME (REFER THE PHOTO)

SAVING FUNCTION

Income is either consumed or saved. According the Keynes saving is the part of income that is not consumed. In reality individuals don't spend their entire income on consumption.

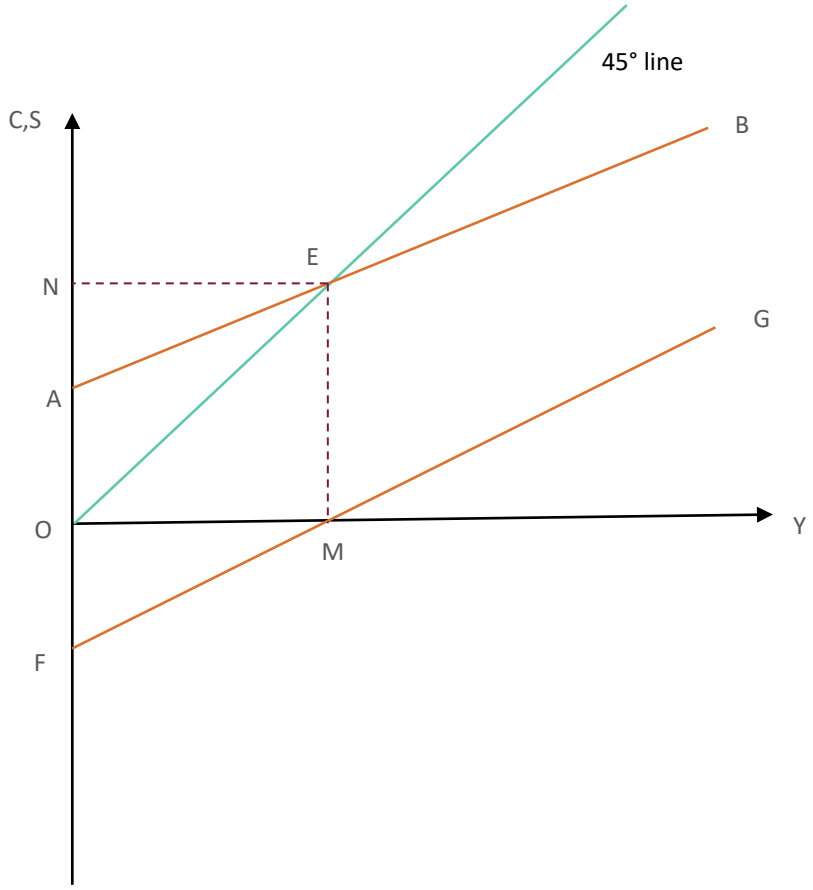
$$C + S = Y$$

$$\Rightarrow S = Y - C$$

Saving is a function of income, which means that saving depends on income. Saving function is give as $S = S(Y)$. This function shows the different amount to savings that is done at various levels of income. The graphical representation of this function is called the saving function curve where the level of saving is given in the y-axis and the level of income is given in the x-axis. This is an upward sloping line because as the income increase the saving also increases. When the income is zero the consumption is positive but the savings is negative.

$S = Y - C$
$= 0 - OA$
$= - OA = -OF$

The line AB shows the consumption function and the line FG shows the saving function and the 45° line shows income = consumption and the savings is zero. Before the point E, consumption expenditure is greater than the income hence the saving is negative, beyond point E the consumption expenditure is lesser than income and so we have a positive saving.



Important points to remember

- There exists a relationship between saving and income which is given by the saving function. S = S(Y). As the income increase the level of saving increases as well
- Marginal propensity to save shows the change in the saving when the income changes. It is given by the ratio of the change in saving to the change in income, $\frac{\Delta S}{\Delta Y}$. mps always lies between 0 to 1, 0<mps<1. This is also the slope of the saving function and will remain constant throughout the saving function curve. As the income increases the saving increases too but by a fraction of the increase in income. mpc + mps = 1
- Average propensity to save (aps) is the ratio of the saving to the income, $\frac{S}{Y}$. As the income increases the average propensity to save increases. OE is the 45° line which shows income = consumption. $\frac{S}{Y}$ can be greater than 0 and less than 1. apc + aps = 1. When the saving is at point U, the apc is

given by the ratio $\frac{S}{Y} = \frac{UV}{OV}$ (we get it by joining the saving point (U) with the origin and x-axis.)