Determination of National Income

Here we are going to determine National Income (NI) under the assumption of fixed price of final goods and constant rate of interest under the assumption of fixed price of final goods and constant rate of interest in the economy.

Ex ante Aggregate Demand for final goods:

In an economy without govt., the exante aggregate demand for final goods is the sum total of the ex-ante consumption expenditure and ex-ante investment expenditure on such goods. Therefore aggregate demand (AD) equation is

$$AD = C + I \quad \longrightarrow (1)$$

We know, $C = \bar{C} + cY$ $\longrightarrow$ (i), $\bar{C}$ → minimum consumption level

c → mpc ie marginal propensity

$I = \bar{I}$ $\longrightarrow$ (ii)

to invest the same amount every year. Hence we write $I = \bar{I}$, $\bar{I}$ is a positive constant which represents the autonomous (given or exogenous) investment in the economy in a given year.

Substituting the values of C and I from equations (i) & (ii) in (1) we get

$$AD = \bar{C} + cY + \bar{I}$$

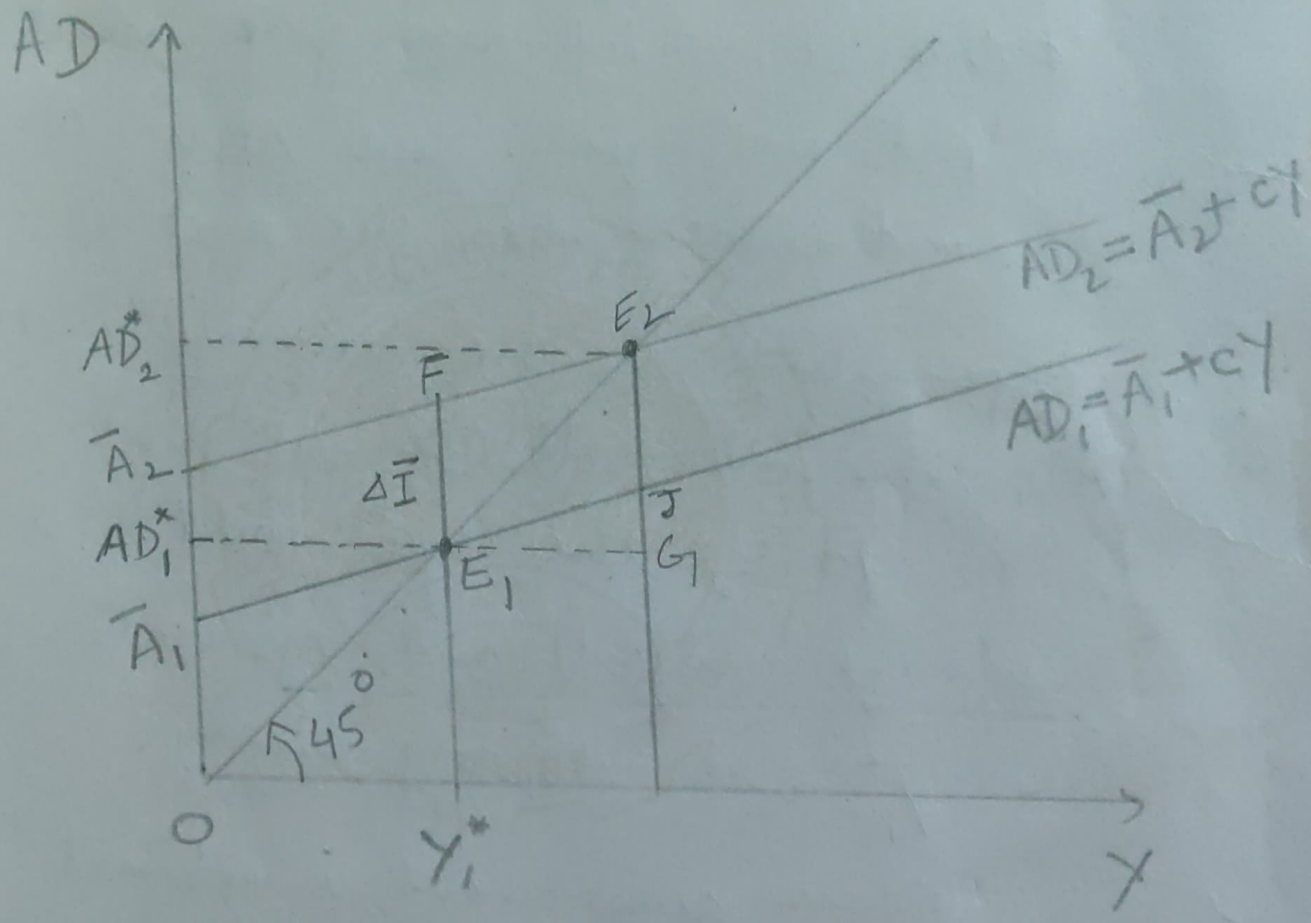
$$= \bar{c} + \bar{I} + cY \quad \text{—— (2)}$$

If the final goods market is in equilibrium i.e., ex ante aggregate demand is equal to ex ante aggregate supply i.e $AD = Y$, Y is ex ante aggregate supply or planned output of final goods. Then we can write (2) as, $Y = \bar{C} + \bar{I} + cY$.

or $Y = \bar{A} + cY$ —— (3), where $\bar{A} = \bar{C} + \bar{I}$ is the total autonomous expenditure in the economy.

This is the equ^{m} condition of an economy i.e ex ante aggregate output must be equal to ex ante aggregate demand.

The following diagram shows the Equilibrium output and Aggregate demand in the fixed price model.



The equ^m output and aggregate demand at the fixed price-interest rate is derived by solving the equation

$$Y = AD = \bar{A} + cY.$$

The solution is:

$$Y - cY = A$$

$$\Rightarrow Y(1-c) = A \quad \therefore Y = \frac{A}{1-c}$$

The value of y will, therefore, depend on $\bar{A}$ and c.

In the figure, the 45° line represents points at which aggregate demand and output are equal. Thus AD_1 is the aggregate demand curve, when the level of autonomous expenditure in the economy is A_1. The AD_1 line intersects the 45° line at E_1, which is therefore, the equ^m point. The equ^m values of output and aggregate demand are Y_1^* and AD_1^* respectively.

When autonomous investment increases, the AD_1 line shifts in parallel upwards and assumes the position AD_2. The value of aggregate demand at output Y_1^* is Y_1^*F, which is greater than the value of output $OY_1^* = Y_1^*E_1$ by an amount E_1F. E_1F measures the amount of excess demand that emerges in the economy as a result of the increase

in autonomous expenditure. Thus, E_1 no longer represents the equilibrium. To find the new equ^m in the final goods market we must look for the point where the new aggregate demand line, AD_2 intersects the 45^0 line. That occurs at point E_2, which is, therefore, the new equ^m point. The new equ^m value of output is Y_2^* and the aggregate demand is AD_2^*.

We note that in the new equ^m position, output and aggregate demand have increased by an amount $E_1G_1 = E_2G_1$, which is greater than the initial increment in autonomous expenditure, $\Delta \bar{I} = E_1F = E_2J$. Thus an initial increment in the autonomous expenditure seems to have spill over effect on the equ^m values of aggregate demand and output. This can be explained through multiplier mechanism.

Effective demand Principle

Short run Fixed Price analysis of the Product Market:

In order to hold price constant at any particular level, one must assume that the suppliers are willing to supply whatever amount consumers will demand at that price. If quantity supplied is either in excess of or falls short of quantity demanded at this price, price will change because of excess supply or demand. To avoid this problem, we assume that the elasticity of supply is infinite ie supply shedule is horizontal — at the fixed price. Under such circumstances, equilibrium output will be solely determined by the aggregate amount of demand at this price in the economy. We call it effective demand principle.