

Lesson – 27

Theory of Income Determination

Summary

Economy must produce goods and services and generate income for its citizens. For this it must provide employment opportunities. In this context it is important to ask the question “How much output should be produced in the economy?” What should be the level of income and employment?” John Maynard Keynes a famous economist who pioneered the study of macro economics in the 1930s has propounded a simple theory of income and employment to answer these questions. Now let us discuss about Keynesian model of theory of income and employment.

Model of a Simple Economy

Model of a Simple is based on establishing equilibrium aggregate demand and aggregate supply to determine income and employment of an economy.

The Concept of Aggregate Demand

Aggregate demand of an economy is defined as the total demand for goods and services at the given price level.

Accordingly, we can identify the following consuming sectors –

$$AD = C + I + G + NX$$

Or

$$AD = C + I$$

Where, AD = aggregate demand

C = consumption

I = investment

G = Government purchases

G = Government purchases

NX = net exports $NX = X - M$,
Where X = Exports, M = Import

The Concept of Aggregate Supply

It can be said that actual value of total output is same as the economy's income. Let it be denoted as Y. It is also said that income is divided between consumption and saving.

$$AS = Y = C + S$$

Where, AS = Aggregate Supply

C = Consumption

S = Saving

Condition of Equilibrium

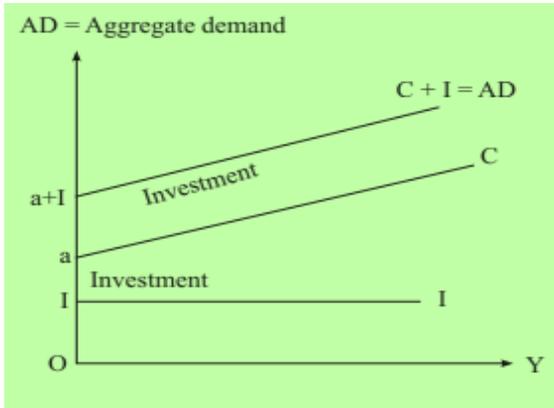
So according to condition of equilibrium it can be written that:

$$AD = Y \dots(2)$$

Or,

$$C + I = C + S \text{ Or } C = S.$$

Diagrammatic Representation of AD



Equation of C + I

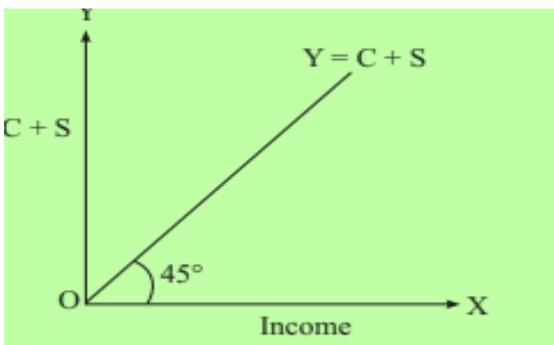
Note that, as said earlier, $C = a + bY$ and,

I is a fixed amount.

So, $C + I = a + bY + I = (a + I) + bY$

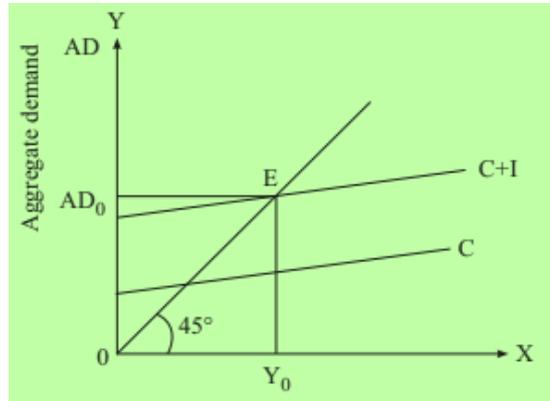
Where $b = MPC$

Diagrammatic Representation of AS or 45° line



The value of output is same as level of income Y . Also Y is the sum of C and S or $Y = C + S$. Geometrically on a 45 degree line through the origin $Y = C + S$ when we measure income Y along horizontal axis and $C + S$ along vertical axis

Diagram for Equilibrium of Income



Equilibrium income by saving and investment approach

As we know ,

$$AD = C + I$$

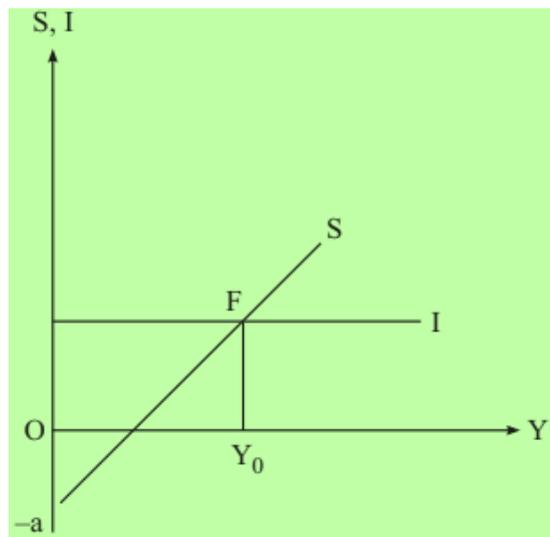
$$AS = C + S$$

In the state of equilibrium

$$AS = AD$$

$$\text{Or } C + I = C + S$$

$$\text{Or } I = S$$



Multiplier and its Working

Definition of Multiplier

Multiplier is defined as the ratio of increase in Income to increase in investment. Using this equation we can also write that –

$$\Delta Y = k\Delta I$$

This implies that increase in income is equal to multiplier times increase in investment. Here value of k holds key to increase in income given the value of increase in investment.

$$\text{If } K = 1. \text{ Then } \Delta Y = k\Delta I$$

This means that increase in investment brings about same amount of increase in income. If $k > 1$ (k is greater than 1) then, increase in investment will bring about higher increase in income than itself.

Derivation of the Value of Multiplier

To derive the value of multiplier involving MPC or MPS we can use the condition for attaining the equilibrium income as follows –

$$C + I = C + S$$

$$\text{Since, } C + S = Y,$$

$$\text{so } C + I = Y$$

Multiply Δ through out to get

$$\Delta C + \Delta I = \Delta Y$$

Divide all through by 'Y to get

$$\frac{\Delta C}{\Delta Y} + \frac{\Delta I}{\Delta Y} = \frac{\Delta Y}{\Delta Y}$$

We know that $\frac{C}{\Delta Y} = \text{MPC}$

$$\text{Then } \text{MPC} + \frac{\Delta I}{\Delta Y} = 1$$

$$\text{So, } \frac{\Delta I}{\Delta Y} = 1 - \text{MPC}$$

Reversing both sides we get

$$\frac{\Delta Y}{\Delta I} = \frac{1}{1 - \text{MPC}} = \frac{1}{\text{MPS}}$$

Since

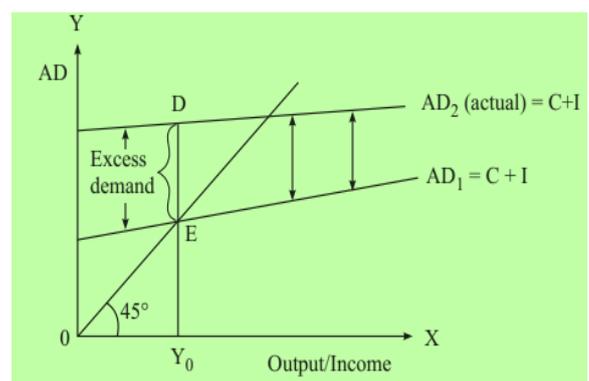
$$\frac{\Delta Y}{\Delta I} = k \text{ or Multiplier}$$

$$\text{Or, Multiplier } k = \frac{1}{1 - \text{MPC}} = \frac{1}{\text{MPS}}$$

Excess Demand

Excess demand refers to the situation when aggregate demand exceeds the potential level of output in the economy.

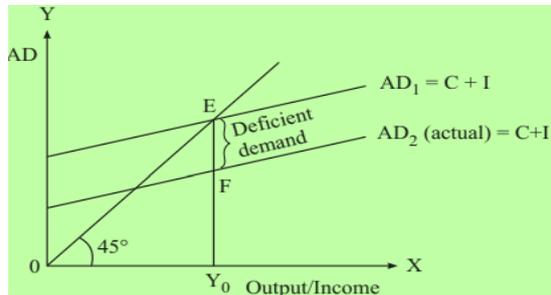
Diagrammatically excess demand is created when AD line shifts upwards at the level of equilibrium as shown in the diagram below



Deficient Demand

Deficiency in demand is exactly opposite to excess demand situation.

Diagrammatically, deficiency in demand is shown by the fall in AD line at the level of potential output as shown below in diagram.



Measures to correct excess and deficiency in demand

Excess Demand or Inflationary Gap

Fiscal Policy

Fiscal policy is the economic policy of the government that is concerned with (a) taxation (b) public expenditure and (c) public borrowing. The government uses fiscal policy to control the rising prices or deal with the situation of inflation-

- The government must raise tax rate
- The government must reduce public expenditure
- The government must increase public borrowing

Deficient Demand or Deflationary Gap

- The government must reduce tax rate
- The government must increase public expenditure
- The government must reduce public borrowing

Monetary Policy

The monetary policy is implemented by the country's central Bank. In case of India, it is the Reserve Bank (RBI) which implements monetary policy. Monetary policy refers to credit control measures used by the central bank to regulate and control the level of credit creation by commercial banks which are as follows –

Excess Demand or Inflationary Gap

- Bank rate should be increased
- Securities under open market must be sold by the central bank
- Increase in CRR and SLR
- Margin requirements of credit must be increased
- Rationing of credit should be practiced strictly

Deficient Demand or Deflationary Gap

- Bank rate should be reduced
- Securities under open market must be purchase by the central bank
- Decrease in CRR and SLR
- Margin requirements of credit must be reduced
- Rationing of credit should not be practiced strictly

Evaluate Yourself

Q. "Higher value of consumption level results greater the value of multiplier." Justify the statement with numerical illustration.

Q. Explain AD – AS approach to determine equilibrium level of income.

Q. Given that MPC is 0.75 and investment increases from Rs. 100 cr. to Rs. 150 cr. Find value of multiplier and increase in income?

Q. Suggest some monetary measures to control the situation of deflationary gap of our economy.