Short run Equilibrium Output

1 Mark Questions

1. Give the meaning of ex-ante savings. (Delhi 2010)
Ans. The planned or desired savings during an accounting year is termed as ex-ante saving. These are desired savings by the people for one year.

2. What is ex-ante Aggregate Demand? (All India 2010)
Ans. The planned expenditure on the purchase of goods and services in an economy during a period of one year, is termed as ex-ante Aggregate Demand.

3. When will there be equilibrium level of National Income? (All India 2010)
Ans. When Aggregate Demand is equal to Aggregate Supply (AD = AS) in an economy at full employment level, then it is termed as the equilibrium level of National Income.

4. What can be the minimum value of investment multiplier? (Delhi 2009)
Ans. The minimum value of investment multiplier is 1.

5. If the investment multiplier is 1, what will be the value of Marginal Propensity to Consume? (Delhi 2009)
Ans. If the investment multiplier is 1, the value of Marginal Propensity to Consume is 0.
Multiplier (K) =1/1-MPC
1=1/1-MPC
1- MPC =1
1 -1 = MPC = 0

3 Marks Questions

1. Explain the meaning of investment multiplier. What can be its minimum and maximum value? (Compartment 2014)
Ans. Investment multiplier is the ratio between change in income and the corresponding change in investment. It represents the responsiveness of income to change in investment. It is denoted by K. Symbolically,

$$\text{Investment Multiplier } (K) = \frac{\text{Change in Income } \Delta Y}{\text{Change in Investment } \Delta I}$$

MPC is Marginal Propensity to Consume.
The value of Multiplier depends on the value of MPC.

Since, $0 < MPC < 1$, therefore, if

MPC = 0, then $K = 1$, and

if MPC = 1 " $K = \infty$.

7. Explain the relationship between investment multiplier and Marginal Propensity to Consume. (Delhi 2011)

Ans. There is direct or positive relationship between MPC and multiplier. Higher the MPC, higher will be the value of multiplier and vice-versa

Multiplier (K) =1/1-MPC

e.g. If MPC =0.5, then K will be, K =1/1-0.5=2

When MPC increase to 0.75, then K will be

K=1/1-0.75=1/0.25=4

8.As a result of increase in investment by Rs. 60 crore, National Income rises to Rs. 240 crore. Calculate Marginal Propensity to Consume. (All India 2011)

Ans. Here, $\Delta I =$ ₹ 60 crore, $\Delta Y =$ ₹ 240 crore

Hence, $\text{Multiplier } (K) = \frac{\Delta Y}{\Delta I} = \frac{240}{60} = 4$

Now, $K = \frac{1}{1 - MPC}$

or $4 = \frac{1}{1 - MPC}$

or $4 - 4\,MPC = 1$

or $4\,MPC = 4 - 1$

or $MPC = \frac{3}{4}$

$MPC = 0.75$

9. In an economy, investment is increased by Rs. 2000 crore. Calculate the change in total income, if Marginal Propensity to save is 0.25.

Ans. Here, $\Delta I =$ ₹ 2000 crore, MPS = 0.25

Now, $\text{Multiplier } (K) = \frac{1}{MPS} = \frac{1}{0.25} = 4$

Again, we know that

$K = \frac{\Delta Y}{\Delta I}$

or $4 = \frac{\Delta Y}{2000}$

or $\Delta Y = 2000 \times 4$

Change in total income (ΔY) = ₹ 8000 crore

10. Find the value of multiplier given (i) Marginal Propensity to Consume = 1 and (ii) Marginal Propensity to Save = 1. (All India 2010)

Ans. (*i*) Here, MPC = 1

Hence, $$\text{Multiplier } (K) = \frac{1}{1 - \text{MPC}} = \frac{1}{1-1} = \infty$$

So, Multiplier = ∞ (Infinity)

(*ii*) Here, MPS = 1

Now, $$K = \frac{1}{\text{MPS}} = \frac{1}{1}$$

Hence, Multiplier (*K*) = 1

11. In an economy, asa result of increase in investment by Rs. 100 crore, National Income rises by Rs. 1000 crore. Find Marginal Propensity to Consume. (Delhi 2010c)

Ans. Here, ΔI = ₹ 100 crore, ΔY = ₹ 1000 crore

Now, $$\text{Multiplier } (K) = \frac{\Delta Y}{\Delta I} = \frac{1000}{100} = 10$$

Now, we know that

$$K = \frac{1}{1 - \text{MPC}}$$

or $$10 = \frac{1}{1 - \text{MPC}}$$

or $$10 - 10\,\text{MPC} = 1$$

or $$10\,\text{MPC} = 10 - 1$$

or $$\text{MPC} = \frac{9}{10}$$

or $$\text{MPC} = 0.9$$

12. If Marginal Propensity to Save is one, what is the value of multiplier? What can you say about the change in National Income, given change in investment. (Delhi 2010C)

Ans. Here, (MPS) = 1

Hence,(MPC) = 1 – MPS = 1 – 1 = 0

Now, $\text{Multiplier } (K) = \frac{1}{1 - \text{MPC}}$

$= \frac{1}{1-0} = 1$

Now, suppose change in investment is given ₹ 100 crore

$\Delta I =$ ₹ 100 crore

So, $K = \frac{\Delta Y}{\Delta I}$

or $1 = \frac{\Delta Y}{100}$

or Change in National Income $\Delta Y =$ ₹ 100 crore

13. Given Marginal Propensity to Save equal to 0.25, what will be the increase in National Income, if investment increases by Rs.125 crore? Calculate. (All India 2008)

Ans. Here, $\Delta I =$ ₹ 125 crore, MPS = 0.25

Now, $K = \frac{1}{MPS}$

or $K = \frac{1}{0.25}$

or $K = 4$

Again, we know that $K = \frac{\Delta Y}{\Delta I}$

or $4 = \frac{\Delta Y}{125}$

or $\Delta Y = 125 \times 4$

or Increase in National Income $(\Delta Y) =$ ₹ 500 crore

4 Marks Questions

14. State whether the following statements are true or false. Give reasons for your answer
(i) When Marginal Propensity to Consume is greater than Marginal Propensity to Save, the value of investment multiplier will be greater than 5.
(ii) The value of Marginal Propensity to Save can never be negative. (Delhi 2010)

Ans. (i) No, the statement is false. This can be understood by an example. Suppose, the value of MPC = 0.6,

hence, MPS = 0.4 (as MPS = 1 – MPC)
Here, MPC > MPS
Now, K=1/1-MPC=1/1-0.6
=1/0.4=2.5
So, K < 5 even if MPC > MPS.

(ii) Yes, the statement is true.
As MPS tells about the change in savings due to change in income and change is saving will always be positive even if savings is negative, as with rise in income, savings rise at a faster rate than consumption, so MPS can never be negative.

15. Giving reasons, state whether the following statements are true or false.
(i) Average Propensity to Save is always greater than 0.
(ii) Value of investment multiplier varies between zero and infinity. (Delhi 2010)
Ans. (i) No, the statement is false.
When Average Propensity to Consume (APC) is greater than one (i.e. when consumption is greater than income), Average Propensity to Save (APS) will less than or equal to zero.
(ii) No, the statement is false.
We know that, K =1/1-MPC so even if the MPC will have its minimum value, i.e. 0, the investment multiplier will be 1.
Similarly, when MPC = 1, the value of investment multiplier is infinity.
Hence, value of investment multiplier varies between one and infinity.

16. Giving reasons, state whether the following statements are true or false
(i) When Marginal Propensity to Consume is zero, the value of investment multiplier will also be zero.
(ii) Value of Average Propensity to Save can never be less than zero. (All India 2010)
Ans. (i) No, the statement is false.
When Marginal Propensity to Consume is zero, the value of investment multiplier will be 1 (not zero).
K=1/1-MPC or K=1/1-0=1/1=1

17. Giving reasons state whether the following statements are true or false
(i) If the ratio of Marginal Propensity to Consume and Marginal Propensity to Save is 4 : 1, the value of investment multiplier will be 4.
(ii) Sum of Average Propensity to Consume and Marginal Propensity to Consume is always equal to 1. (All India 2010)
Ans. (i) No, the statement is false.
If the ratio of MPC and MPS is 4: 1, then the value of investment multiplier is 5.
MPC=4/4+1=4/5=0.8 as (MPC/MPS=4/1)
K=1/1-0.8=1/0.2 = 5
(ii) No, the statement is false.
APC and MPC can have values other than 1.

$$APC = \frac{C}{Y} \quad \text{and} \quad MPC = \frac{\Delta C}{\Delta Y}$$

and $APC = 1 - APS$

and $MPC = 1 - MPS$

18. Investment in an economy rises by Rs. 1000 crore. Suppose Marginal Propensity to Save is 0. What can you say about the increase in National Income? Calculate. (All India 2009)

Ans. Here, $\Delta I =$ ₹ 1000 crore, $MPS = 0$

Now, $$\text{Multiplier } (K) = \frac{1}{MPS}$$

or $$K = \frac{1}{0}$$

or $$K = \infty$$

Again, we know that, $$K = \frac{\Delta Y}{\Delta I}$$

or $$\infty = \frac{\Delta Y}{1000}$$

or $$\Delta Y = 1000 \times \infty$$

or Increase in National Income $(\Delta Y) = \infty$

Hence, the National Income will increase to infinity, when $MPS = 0$.

19. Investment in an economy rises by Rs. 400 crore. Marginal Propensity to Consume is zero. Calculate the change in National Income. (All India 2009)

Ans. Here, $\Delta I =$ ₹ 400 crore, $MPC = 0$

Now, $$\text{Multiplier } (K) = \frac{1}{1 - MPC}$$

or $$K = \frac{1}{1-0}$$

or $$K = \frac{1}{1}$$

or $$K = 1$$

Again, we know that

$$K = \frac{\Delta Y}{\Delta I}$$

or $$1 = \frac{\Delta Y}{400}$$

or Change in National Income $(\Delta Y) =$ ₹ 400 crore

20. There is an increase in investment of Rs. 100 crore in an economy. Marginal Propensity to Consume is 1. What can you say about total increase in the income? Calculate. (Delhi 2009 c)

Ans. Here, $\Delta I = ₹\ 100$ crore, MPC = 1

Now, $\text{Multiplier } (K) = \frac{1}{1 - \text{MPC}}$

or $K = \frac{1}{1-1}$

or $K = \infty$

Again, we know that $K = \frac{\Delta Y}{\Delta I}$

or $\infty = \frac{\Delta Y}{100}$

or $\Delta Y = 100 \times \infty$

or Increase in income $(\Delta Y) = \infty$

There will be infinite increase in the income, if MPC = 1

21. There is an increase in investment of Rs. 1000 crore in an economy. Marginal Propensity to Consume is 0. What is the total increase in income? Calculate. (Delhi 2009C)

Ans. Here, $(\Delta I) = ₹\ 1000$ crore, MPC = 0

Now, $\text{Multiplier } (K) = \frac{1}{1 - \text{MPC}}$

or $K = \frac{1}{1-0}$

or $K = \frac{1}{1}$

or $K = 1$

Again, we know that $K = \frac{\Delta Y}{\Delta I}$

or $1 = \frac{\Delta Y}{1000}$

or Total increase in income $(\Delta Y) = ₹\ 1000$ crore

22. As a result of increase in investment of Rs. 125 crore, National Income increases by Rs. 500 Calculate Marginal Propensity to Consume. (Delhi 2008)

Ans. Here, increase in Investment (ΔI) = ₹ 125 crore

Increase in National Income (ΔY) = ₹ 500 crore

Now, $\text{Multiplier } (K) = \frac{\Delta Y}{\Delta I}$

or $K = \frac{500}{125}$

or $K = 4$

Again, we know that, $K = \frac{1}{1 - \text{MPC}}$

or $4 = \frac{1}{1 - \text{MPC}}$

or $4 - 4\,\text{MPC} = 1$

or $4\,\text{MPC} = 4 - 1$

or $\text{MPC} = \frac{3}{4}$

or Marginal Propensity to Consume (MPC) = 0.75

23. As a result of an increase in investment National Income rises by Rs. 600 crore. If Marginal Propensity to Consume is 0.75, calculate the increase in investment. (Delhi 2008)

Ans. Here, ΔY = ₹ 600 crore, MPC = 0.75

Now, $\text{Multiplier } (K) = \frac{1}{1 - \text{MPC}}$

or $K = \frac{1}{1 - 0.75}$

or $K = \frac{1}{0.25}$

or $K = 4$

Again, we know that $K = \frac{\Delta Y}{\Delta I}$

or $4 = \frac{600}{\Delta I}$

or $\Delta I = \frac{600}{4}$

or Increase in investment (ΔI) = ₹ 150 crore

24. If Marginal Propensity to Consume is 0.9, what is the value of multiplier? How much investment is needed to increase National Income by Rs. 5000 crore? Calculate. (Delhi 2008)

Ans. Here, $\Delta Y =$ ₹ 5000 crore, MPC = 0.9

$$\text{Multiplier } (K) = \frac{1}{1 - \text{MPC}}, \quad K = \frac{1}{1 - 0.9}$$

$$K = \frac{1}{0.1} = 10$$

Again, we know that $K = \frac{\Delta Y}{\Delta I}$

or $K = \frac{5000}{\Delta I}$

or $\Delta I = \frac{5000}{10}$

or Increase in investment $(\Delta I) =$ ₹ 500 crore

25. In an economy an increase in investment leads to an increase in National Income which is three times more than the increase in investment. Calculate Marginal Propensity to Consume. (All India 2008)

Ans. Here, $\frac{\Delta Y}{\Delta I} = 3$ or $K = 3$

Now, $\text{Multiplier } (K) = \frac{1}{1 - \text{MPC}}$

or $3 = \frac{1}{1 - \text{MPC}}$

or $3 - 3\,\text{MPC} = 1$

or $3\,\text{MPC} = 3 - 1$

or $\text{MPC} = \frac{2}{3}$

or $\text{MPC} = 0.67$

26. If Marginal Propensity to Save is 0.2, how much new investment is required to national Income rise by RS. 600 crore? Calculate. (All India 2008)

Ans. Here, MPS = 0.2, ΔY = ₹ 600 crore

Now, $\text{Multiplier } (K) = \frac{1}{\text{MPS}}$

or $K = \frac{1}{0.2}$

or $K = 5$

Again, we know that

$K = \frac{\Delta Y}{\Delta I}$

or $5 = \frac{600}{\Delta I}$

or $\Delta I = \frac{600}{5}$

or Change in investment (ΔI) = ₹ 120 crore

6 Marks Questions

27. When is an economy in equilibrium? Explain with the help of saving and investment function. Also, explain the changes that take place in an economy when the economy is not in equilibrium. Use diagram (All India 2014)

Ans. Equilibrium level of income is determined at a point, where ex-ante or planned saving is equal to planned investment. This is because, in equilibrium. AS = AD or C+S=C + I or S=I Saving is that part of income which is not spent on consumption expenditure

We know that, Y = C + S

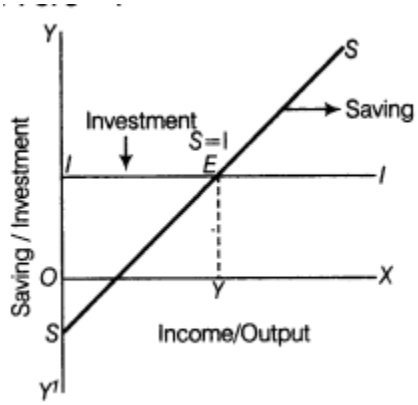
or Y is the Aggregate Supply of the economy.

Investment refers to expenditure on capital goods and capital stock during one year,

We know that, AD = C + /

Now, at equilibrium situation, AD = AS

or C + S = C + I or S = I



E is the point where 5 = I , hence the point at which the economy is in equilibrium. OY is the equilibrium level of National Incomes When savings is greater than investment in an economy, it refers to AD < AS. There will be a rise in inventory stock and prices will start to fall. To clear their stocks, the producers would now plan lesser output. This would mean lesser income in the economy. Lesser income implies lesser saving. The process would continue till S = I.
But if investments are more than savings, it means that AS < AD. Stocks would reduce and prices will start to rise. To stand benefitted from such a condition, the producers will increase their production, leading to an increase in AS. The process would continue till S = I.

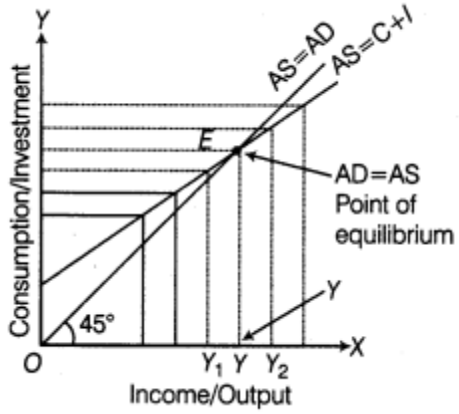
28. Explain National Income equilibrium through Aggreate Demand and Aggregate Supply. Use diagram. Also explain the changes that take place in an economy when the economy is not in equilibrium. (Delhi 2014)

Ans. In an economy, equilibrium level of income and employment is determined when AD (Aggregate Demand) is equal to AS (Aggregate Supply).
According to Keynes, AS may be assumed to be perfectly elastic in an economy where full employment (of resources) is yet to be achieved. Accordingly, AD becomes the principal determinant of equilibrium level of income.

In the following figure, AD represents aggregate demand curve and 45° line is the line of reference, where AS – AD. Equilibrium level of income Y is determined at point E, where AD = AS, Prior to point E, Aggregate Demand exceeds Aggregate Supply leading to an increase in level of income upto point E, Aggregate Supply exceeds Aggregate Demand leading to a fall in income back towards point E.

It is only when AS = AD that the equilibrium is struck. Because the equality between AS and AD implies that the desired level of output in the economy (as indicated by AS) is exactly equal to the desired level of expenditure (indicated by AD) in the economy. So that, the entire output as planned by the producers (during and accounting year) is purchased by the buyers. There are on undesired or unwanted inventories (stock of

goods) with the producers.



29. In an economy 75% of the increase in income is spent on consumption. Investment is increased by 11000 Calculate. (Delhi 2010)
(i) Total increase in income.
(ii) Total increase in consumption expenditure.

Ans. (*i*) Here, MPC = 0.75 and ΔI = ₹ 1000 crore

Now, $$\text{Multiplier } (K) = \frac{1}{1 - \text{MPC}}$$

$$= \frac{1}{1-0.75} = 4$$

Again, we know that

$$K = \frac{\Delta Y}{\Delta I}$$

or $$4 = \frac{\Delta Y}{1000}$$

or $$\Delta Y = ₹\ 4000$$

or Increase in income = ₹ 4000 crore

(*ii*) $$\text{MPC} = \frac{\Delta C}{\Delta Y} \text{ or, } \Delta C = \text{MPC} \times \Delta Y$$

or $$\Delta C = 0.75 \times 4000$$

or Increase in consumption expenditure (ΔC) = ₹ 3000 crore

30. In an economy, the equilibrium level of income is Rs. 12000 The ratio of Marginal Propensity to Consume and Marginal Propensity to Save is 3:1. Calculate the additional investment needed to reach new equilibrium level of income of Rs. 20000 crore. (All India 2010)

Ans. Here, $\Delta Y =$ (₹ 20000 – ₹ 12000) crore or $\Delta Y =$ ₹ 8000 crore

$$MPC = \frac{3}{4} \text{ as } \left(\frac{MPC}{MPS} = \frac{3}{1}\right)$$

Hence, $$K = \frac{1}{1 - MPC}$$

or $$K = \frac{1}{1 - \frac{3}{4}}$$

or $$K = \frac{1}{1 - 0.75}$$

or $$K = \frac{1}{0.25}$$

or $$K = 4$$

Again, $$K = \frac{\Delta Y}{\Delta I}$$

or $$4 = \frac{8000}{\Delta I}$$

or $$\Delta I = \frac{8000}{4}$$

or Additional investment = ₹ 2000 crore

31. How is saving and investment approach derived from the Aggregate Demand and supply approach of income determination? Explain and use diagram. (Delhi 2010c)

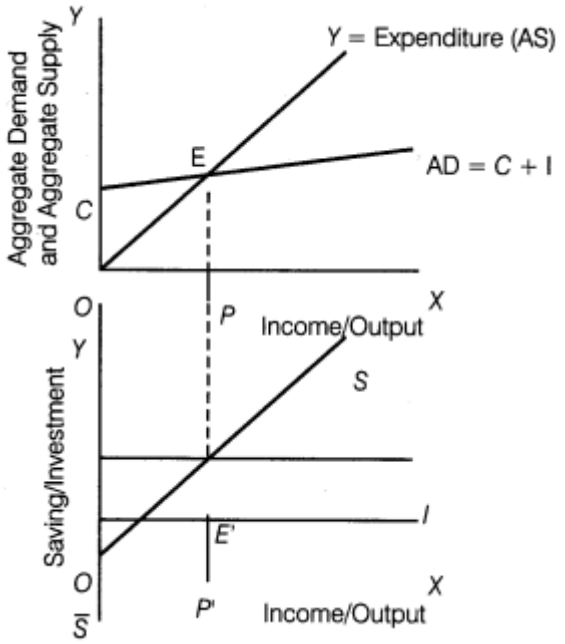
Ans. The equilibrium level of income or output is that level at which the planned savings and planned investments are equal. It is derived from Aggregate Demand and supply approach in the following way: Aggregate Demand in a two sector economy is defined as the sum of consumption expenditure(c) and investment expenditure (I) i.e. AD = C + I, where as Aggregate Supply is defined as the sum of consumption (c) and savings (s) i.e. AS = C + S.

Mathematically, AD = AS

C + I = C+S

Hence, I = S

or S = I

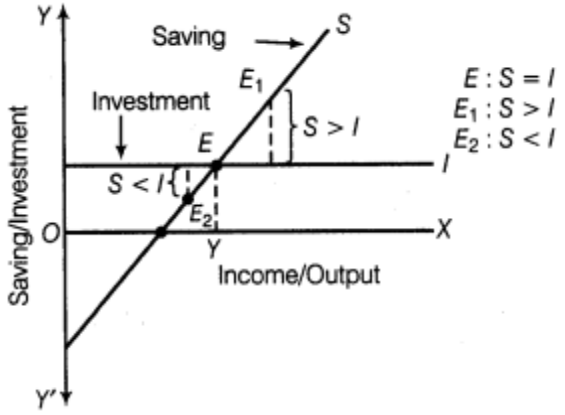


OP or OP' is the equilibrium level of income. E is the equilibrium point where Aggregate Demand equals Aggregate Supply. Equality between AS and AD implies the equality between S and I. When we stretch the line EP vertically downward, it meets at point E' with S and I. It is the equilibrium point of saving and investment approach OP or OP' represents the level of income at which the economy is in equilibrium.

32. Given consumption function C = 100 + 0.75 Y (where, C = Consumption expenditure and Y = National Income) and investment expenditure Rs. 1000, calculate
(i) Equilibrium level of National Income
(ii) Consumption expenditure at equilibrium level of National Income (Delhi 2009)

Ans. (i) Equilibrium level of National Income
know that, Y = C + /
or Y= 100 + 0.75 Y+1000 (as, l=Rs. 1000)
or y-0.75 y= 1100
or 0.25Y=1100
or Y=1100/0.25
or National Income (Y) = Rs. 4400
(ii) Consumption expenditure at equilibrium level of National Income
Now, Y=C+l
or 4400= C+1000
or C=4400-1000
or Consumption expenditure (C)= Rs. 3400

33. What changes will take place to bring an economy in equilibrium, if
(i) Planned savings are greater than planned investment
(ii) Planned savings are less than planned investment (Delhi 2009)
Ans. The situation when S > I or when S < I are explained with the help of following figure:



In the diagram, equilibrium is struck at point E when 5 = /. Equilibrium level of income = OY.
Ans. The situation when S > I or when S < I are explained with the help of following figure:
Let us consider a situation when 5 > I. It happens at point E1,.
In such a situation, the following changes will occur
(i) Stocks of the producers would be in excess of the desired limit.
(ii) Profits will start shrinking.
(iii) Desired level of output for the subsequent year will face a cut.
(iv) Levels of income and employment will tend to shrink to the point where S =I, corresponding to point E in the diagram.

Thus, the economy will come back to the state of equilibrium.
Now, consider a situation when S < I. It happens at point E_2. It is a situation when AD>AS.

In such a situation, the following changes will occur
(i) Existing stocks of the producers are not enough to cope with the level of AD.
(ii) Profits will not be maximum, because the desired level of stock is not available.
(iii) Producers will plan higher level of output for the subsequent years.
(iv) Level of output and employment will rise to drive the economy to the point of equilibrium at point E.

34. In an economy, S = – 50 + 0.5 Y is the saving function (where, S = Saving and Y = National Income) and investment expenditure is Rs. 7000. Calculate (All India 2009)
(i) Equilibrium level of National Income
(ii) Consumption expenditure at equilibrium level of National Income
Ans.(i) At equilibrium situation,

S= I
or -50 + 0.5 Y= 7000
or 0.5 Y= 7000 + 50
or Y=7050/0.5
or National Income (Y)=Rs. 1400
(ii) Again, we know that Y = C + I
or 14100= C+7000
or C = 14100-7000
or Consumption expenditure (C) = Rs. 7100

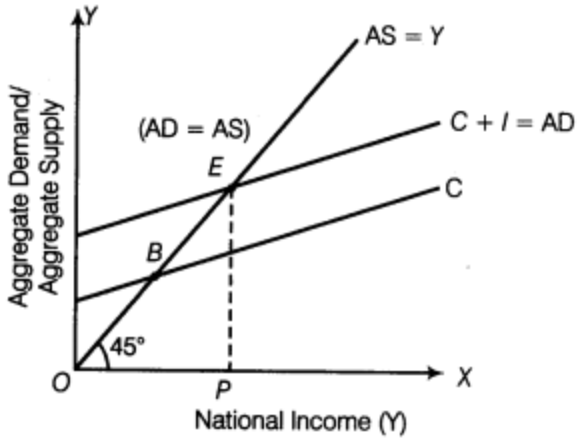
35. In an economy, C = 200 + 0.9 Y is the consumption function (where, C = Consumption expenditure and Y = National Income) and investment expenditure is Rs. 3000. Calculate (All India 2009)
(i) Equilibrium level of National Income
(ii) Consumption expenditure at equilibrium level of National Income
Ans. (i) We know that, Y = C + /
or Y = 200 + 0.9 Y+3000 (as I=Rs. 3000)

or Y -0.9 Y= 3200
or 0.1 Y= 3200

or Y= Rs. 3200/0.1
or National Income (Y)=Rs. 32000
(ii) Again, Y= C+ /
or 32000 = C + 3000
or C = 32000-3000
or Consumption expenditure (C) = Rs. 29000

36. Explain the determination of National Income using, Aggregate Demand and Aggregate Supply, approach. Explain the changes that take place when Aggregate Demand is greater than Aggregate Supply. (Delhi 2009)

Ans. The determination of income and employment in the Keynesian model depends on the level of AD and AS. The point where AD = AS, i.e. Aggregate Demand meets, the Aggregate Supply is known as equilibrium point.

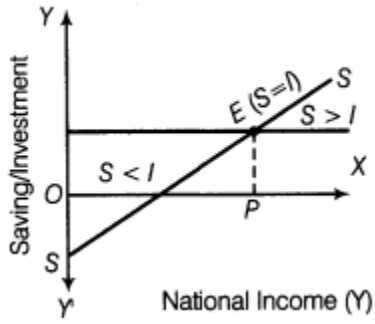


When AD is greater than AS, flow of goods and services in the economy tends to be less than their demand. The exisiting stocks of the producers would be sold out. To rebuild the desired stocks, the producers would plan greater production. AS would increase to become equal to AD.

Aggregate Demand (AD) is the sum of demand for consumption and investment. In the above figure, C is the consumption curve which meets AS curve at B. B becomes the break even point where savings is O. Again, E is the point where AD curve meets the AS curve and it is the equilibrium point. OP is the level of national income where AS = AD and is known as equilibrium income.**37. Explain the determination of National**

37. Income using 'saving and investment approach, with the help of a diagram. Explain the changes that take place when saving is greater than investment. (Delhi 2009c)

Ans. Saving is that part of income which is not spent on consumption expenditure.
We know that, $Y = C + S$
or Y is the Aggregate Supply of the economy.
Investment refers to expenditure on capital goods and capital stock during one year,
We know that, $AD = C + I$
Now, at equilibrium situation, $AD = AS$
or $C + S = C + I$ or $S = I$



E is the point where S = I, hence, the point at which the economy is in equilibrium. The point P refers to the equilibrium level of National Income.
When savings is greater than investment in an economy, it refers to AD < AS. There will

be a rise in inventory stock and prices will start to fall. To clear their stocks, the producers would now plan lesser output. This would mean lesser income in the economy.
Lesser income implies lesser saving. The process would continue till S = I

38. In an economy, C = 500 + 0.9 Y and I = 1000 (where, C = Consumption expenditure and
Y = National Income and I = Investment). Calculate the following
(i) Equilibrium level of income.
(ii) Consumption expenditure at equilibrium level of income. (Delhi 2008)

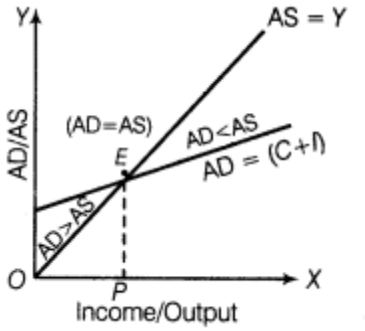
Ans. Here, C = 500 + 0.9 Y
I =Rs. 1000
Y= Rs. C+I
or Y=500+0.9 Y+ 1000
or Y-0.9 Y= 1500

or 0.1 Y = 1500
or Income (Y) = 15000
Again, we know that Y = C+I
or 15000 = C+ 1000
or C = 15000-1000
or Consumption expenditure (C)= Rs. 14000

39. Explain determination of equilibrium level of income using consumption plus investment (C +I) approach. Use diagram. (Delhi 2008)

Ans. Equilibrium level of income is the point, where Aggregate Demand equals to Aggregate Supply in an economy.
Let us derive the equilibrium with the help of a schedule

Y	*C*	*I*	**AD** (*C* + *I*)	**AS** (*Y*)	
0	500	1000	1500	0	
1000	1000	1000	2000	1000	AD > AS
2000	1500	1000	2500	2000	
3000	2000	1000	3000	3000	AD = AS
4000	2500	1000	3500	4000	AD < AS
5000	3000	1000	4000	5000	



E represents the equilibrium point and OP represents the equilibrium level of National Income, where AD = AS. To the left of point E, AD > AS, where as to the right of point E, AD < AS.

40. In an economy, C = 300 + 0.8 Y and I = 500 (where, C = Consumption, Y = Income and I = Investment). Calculate the following
(i) Equilibrium level of income
(ii) Consumption expenditure at equilibrium level of income (All India 2008)

Ans. (i) Here, I = Rs. 500
C = 300 + 0.8 Y
Now, we know that, Y = C+I
or Y= 300 + 0.8 Y+500
or Y-0.8 Y= 800
or 0.2 Y= 800
or Y=800/0.2
or Income (Y) =Rs. 4000
(ii) We know that,
Y= C+I
or 4000 = C + 500
or C = 4000 – 500
or Consumption expenditure (C) = Rs. 3500

41. In an economy, with every increase in income, 10% of the rise in income is saved. Suppose a fresh investment of Rs. 120 crore take place in the economy. Calculate the following
(i) Change in income (ii) Change in consumption (All India 2008)

Ans. (*i*) Here, MPS = 0.1, $\frac{10}{100}$ ΔI = ₹ 120 crore

Now, Multiplier $(K) = \frac{1}{MPS}$

or $K = \frac{1}{0.1}$

or $K = 10$

Again, $K = \frac{\Delta Y}{\Delta I}$

or $10 = \frac{\Delta Y}{120}$

or Change in income (ΔY) = ₹ 1200 crore

(*ii*) MPS = 0.1

Hence, MPC = 1 – MPS

or MPC = 1 – 0.1

or MPC = 0.9

Now, we know that, $MPC = \frac{\Delta C}{\Delta Y}$

or $0.9 = \frac{\Delta C}{1200}$

or $\Delta C = 0.9 \times 1200$

or Change in consumption (ΔC) = ₹ 1080 crore

42. In an economy, C = 500 + 0.75 Y and I = 800 (where, C = Consumption, Y = Income, I = Investment). Calculate the following
(i) Equilibrium level of income
(ii) Consumption expenditure at equilibrium level of income

(All India 2008)

Ans. (i) Here, I = Rs. 800, C = 500 + 0.75 Y

Now, we know that, Y= C+ /

or Y= 500 + 0.75 Y + 800

Y- 0.75 Y = 1300

or 0.25 Y = 1300

or Y=1300/0.25

or Income (Y) = 5200

(ii) Again, Y = C+ /

or 5200 = C + 800

or C= 5200-800

or Consumption expenditure(C)=Rs. 4400

43. In an economy, with every increase in income, 70% of the increased income is spent on consumption. Suppose a fresh investment of Rs. 300 crore takes place in the economy. Calculate
(i) Change in income (ii) Change in saving (Delhi 2008)

Ans. (*i*) Here, MPC = 0.7

Hence, $\text{Multiplier } (K) = \frac{1}{1-0.7} = \frac{1}{0.3} = \frac{10}{3}$

Now, $K = \frac{\Delta Y}{\Delta I}$

or $\frac{10}{3} = \frac{\Delta Y}{300}$

or $\Delta Y = \frac{300 \times 10}{3}$

Change in income (ΔY) = ₹1000 Crore

(*ii*) Again, MPC = 0.7

Hence, MPS = 1 − 0.7

= 0.3 [MPC = 1 − MPC]

$\text{MPS} = \frac{\Delta S}{\Delta Y}$

or $0.3 = \frac{\Delta S}{1000}$

or $\Delta S = 1000 \times 0.3$

or Change in saving (ΔS) = ₹ 300 crore

44. In an economy, every time income rises, 75% of the rise in income is spent on consumption. Now, suppose in the same economy, investment rises by Rs. 750 crore. Calculate the following
(i) Change in income (ii) MPS (Delhi 2008C)

Ans. (*i*) Here, MPC = 0.75

Increase in investment (ΔI) = ₹ 750 crore

Now, Multiplier $(K) = \frac{1}{1 - MPC}$

or $K = \frac{1}{1 - 0.75}$

or $K = \frac{1}{0.25}$

or $K = 4$

Again, $K = \frac{\Delta Y}{\Delta I}$ or $4 = \frac{\Delta Y}{750}$

or $\Delta Y = 750 \times 4$

or Change in income (ΔY) = ₹ 3000 crore (ii)

Now, MPS = 1 – MPC

or MPS = 1-

0.75 or M

PS = 0.25

45. In an economy C = 300 + 0.5 Y and I = Rs. 600 (where, C = Consumption, Y = Income, / = Investment). Calculate the following
(i) Equilibrium level of income
(ii) Consumption expenditure at equilibrium level of income
(Delhi 2008C)

Ans. (i) Here, I = Rs. 600 and C = 300 + 0.5 Y

Now, we know that, Y=C+I

or Y=300+0.5 Y

or Y – 0.5Y = 900

or 0.5 Y = 900

or Y= 900/0.5

or Income (Y) = Rs. 1800

(ii) Again, Y = C+I

or 1800= C+600

or C = 1800-600

or Consumption expenditure (C) = Rs. 1200

46. In an economy, every time income rises, 20% of rise in income is saved. Now, suppose in the same economy investment rises by? 200 crore. Calculate the

following
(i) Change in income (ii) Change in consumption

Ans. (*i*) Here, MPS = 0.2

So, $\text{Multiplier } (K) = \frac{1}{\text{MPS}}$ or $K = \frac{1}{0.2} = 5$

Now, $K = \frac{\Delta Y}{\Delta I}$ or $S = \frac{\Delta Y}{200}$

Hence, $\Delta Y = 5 \times 200$

or Change in income $(\Delta Y) = ₹\ 1000$ crore

(*ii*) ∵ MPS = 0.2

So, $\text{MPC} = 1 - \text{MPS}$

or $\text{MPC} = 1 - 0.2$

or $\text{MPC} = 0.8$

Now, $\text{MPC} = \frac{\Delta C}{\Delta Y}$

So, $0.8 = \frac{\Delta C}{1000}$

or $\Delta C = 0.8 \times 1000$

Hence, change in consumption $(\Delta C) = ₹\ 800$ crore