

Unit 10

I. Choose the correct answer (each question carries 1 mark)

1. Consumption which is independent of income is called:
 - a) Induced consumption
 - b) Autonomous consumption**
 - c) Wasteful consumption
 - d) Past consumption

2. Value of MPC lies between:
 - a) 1 and 2
 - b) 0 and 1**
 - c) 2 and 4
 - d) 0 and 0.5

3. The point where ex-ante aggregate demand is equal to ex-ante aggregate supply will be:
 - a) Equilibrium**
 - b) Disequilibrium
 - c) Excess Demand
 - d) Excess Supply

4. Easy availability of credit encourages
 - a) Saving
 - b) Rate of interest
 - c) Investment
 - d) None of the above**

5. In the situation of excess demand
 - a) Demand is less than the level of output
 - b) Demand is more than the level of output**
 - c) Supply is less than the level of output
 - d) Supply is more than the level of output

II. Fill in the blanks (each question carries 1 mark)

1. $c.Y$ shows the dependence of consumption on INCOME
2. Savings is that part of income that is NOT USED FOR CONSUMPTION
3. Average propensity to consume (APC) is the consumption per unit of INCOME
4. INVESTMENT is defined as addition to the stock of physical capital
5. Size of the multiplier depends on the value of c
6. I is a positive constant which represents the AUTONOMOUS investment in the economy

III. Match the following (carries five marks)

1. Savings	a) APC (average propensity to consume)
2. Raw material	b) $C + I + c.Y$
3. Consumption per unit of income	c) Intermediate goods
4. Aggregate demand for final goods	d) Leads to rise in prices in the long run
5. Excess demand	e) $Y - C$

Savings	$Y - C$
Raw material	Intermediate goods
Consumption per unit of income	APC
Aggregate demand for final goods	$C + I + c.Y$
Excess demand	Leads to rise in prices in the long run

IV. Answer the following questions in a sentence / word (Each question carries 1 mark)

1. Write the meaning of autonomous consumption

Autonomous consumption is the minimum level of consumption or spending that must take place even if a consumer has no disposable income, such as spending for necessities.

2. Give the meaning of MPS

Different people plan to save different fractions of their additional incomes (with the rich typically saving a greater proportion of their income than the poor), and if we average these we may arrive at a fraction which will give us an idea of what proportion of the total additional income of the economy people wish to save as a whole. We call this fraction the marginal propensity to save (mps).

3. Define Average Propensity to Save

The average propensity to save (APS) is an economic term that refers to the proportion of income that is saved rather than spent on goods and services. Also known as the savings ratio, it is usually expressed as a percentage of total household disposable income (income minus taxes).

4. Write the meaning of full employment level of income

Full employment level of national income. National Income (Y) can be calculated by measuring the total level of output of the economy (GDP etc). The more the economy produces, the more people (Labour) will be needed to produce extra goods and services.

5. Mention two fiscal variables which influence aggregate demand

The major economic activities of the government that affect the aggregate demand for final goods and services can be summarized by the fiscal variables Tax (T) and Government Expenditure (G),

6. Write the formula for MPC

Suppose, mpc of an economy is c , where $0 < c < 1$. If the total income of the economy increases from 0 to Y , then total consumption of the economy should be $C = c(Y - 0) = c.Y$

V. Answer the following questions in 4 sentences (each question carries 2 marks)

1. Write the meaning of excess demand and deficient demand

When in an economy, aggregate demand is in excess of 'aggregate supply at full employment', the demand is called an excess demand.

Deficient demand refers to the situation when aggregate demand (AD) is less than the aggregate supply (AS) corresponding to full employment level of output in the economy.

2. Give the meaning of investment multiplier. Write its formula

An investment multiplier refers to the concept that any increase in public or private investment spending has a more than proportionate positive impact on aggregate income and the general economy.

$$\text{Multiplier} = \frac{\Delta Y}{\Delta \bar{A}} = \frac{1}{1 - c} = \frac{1}{s}$$

3. Give the meaning of paradox of thrift

The fixed price-interest rate analysis of the final goods market with an interesting counter-intuitive fact – or a 'paradox'. If all the people of the economy increase the proportion of income they save (i.e. if the mps of the economy increases) the total value of savings in the economy will not increase – it will either decline or remain unchanged. This result is known as the Paradox of Thrift – which states that as people become more thrifty they end up saving less or same as before.

4. What are the factors which cause aggregate demand?

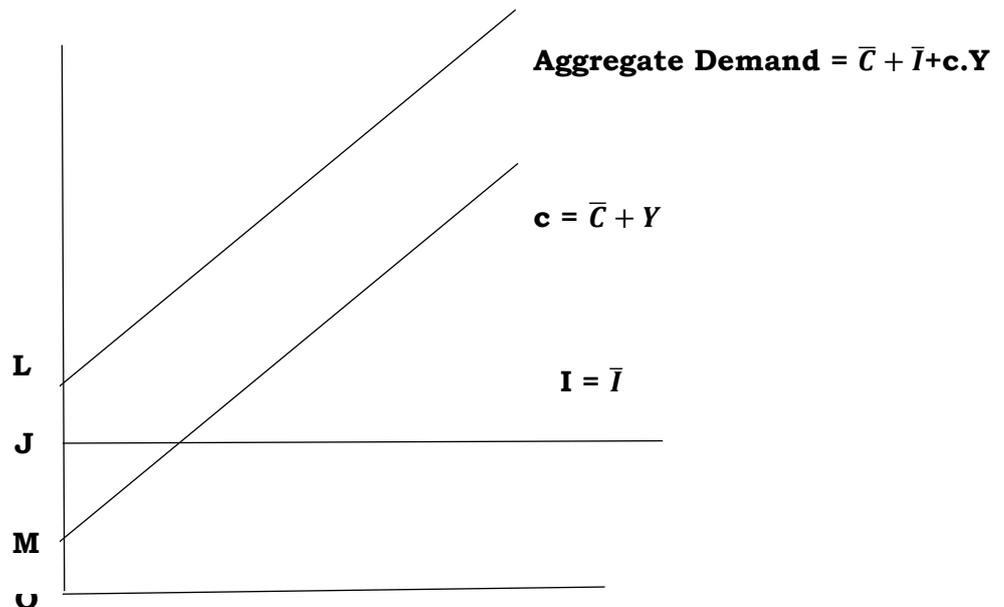
The factors are as follows:

- a) Consumption
- b) Investment
- c) Govt Spending
- d) Price

VI. Answer the following questions in 12 sentences (each question carries 4 marks)

1. Give the meaning of aggregate demand function. How can it be obtained graphically?

It is the total demand made up of consumption + investment at each level of income. It means the aggregate demand function can be obtained graphically as follows.



2. Briefly explain consumption function.

People spend a part of their income on consumption and save the rest. Suppose your income increases by Rs 100. You will not use up this entire extra income but save a certain fraction, say 20 per cent, of it to build up a cushion of savings for the period when you cease to earn income, or for meeting large expenses in future.

$$C = c(Y - 0) = c.Y$$

If the income of the economy in a certain year is zero, the above equation tells us that the economy has to starve for an entire year, which is, obviously, an outrageous idea. If your income is zero in a certain period you use your past savings to buy certain minimum consumption items in order to survive. Hence we must add the minimum or subsistence level of consumption of the economy in the above equation, which, therefore, becomes $C = \bar{C} + c.Y$

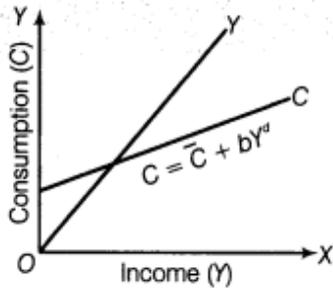
3. Explain consumption and investment function with the help of graphs.

The functional relationship between the consumption expenditure and the income is known as consumption function.

$$C = f(Y)$$

Where, C = Consumption expenditure

Y = Income, or in other words, consumption is a function of income.



$$C = \bar{C} + bY^d$$

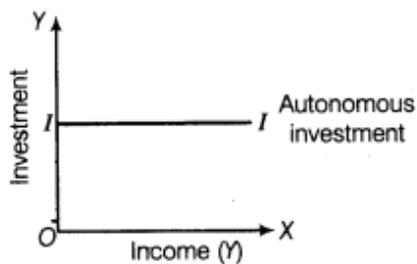
C is consumption

\bar{C} is the minimum level of consumption at zero income

b is the marginal propensity to consume

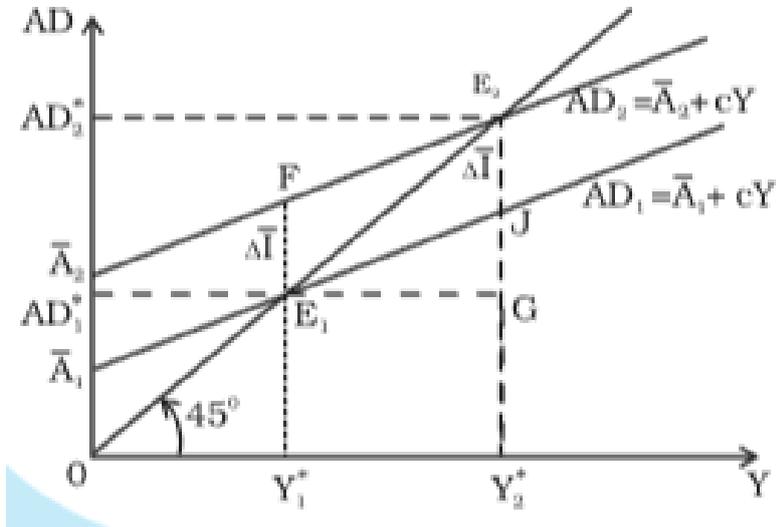
Y^d is disposable income that is Income after tax

An investment which is not influenced by expected profitability or level of income is called autonomous investment.



VII. Answer the following questions in 20 sentences. (Each question carries 6 marks)

1. Explain the effect of autonomous change in aggregate demand of income and output



Compare the equation $AD = A + cY$ with the equation of a straight line of the standard form: $b = \epsilon + ma$.

When c increases, the straight line representing the equation of aggregate demand will swing upwards. On the other hand, as A increases, the straight line will shift in parallel upwards. However, A is only a composite term, representing the sum of C and I , which are, therefore, the truly shifted parameters of the AD line.

The lines AD_1 and AD_2 correspond to the two values of A , viz. A_1 and A_2 , respectively. These values differ by $\Delta I = 10$, the increment in the autonomous investment.

Slope of the AD lines is $0 < c < 1$ and their intercepts on the vertical axis are A_1 and A_2 , respectively. Note that, AD lines are flatter than the 45° line since the slope of the latter line is equal to 1 ($\tan 45^\circ = 1$).

The 45° line represents points at which aggregate demand and output are equal. Thus, 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 equilibrium point. The equilibrium values of output and aggregate demand are Y^*_1 and $AD^*_1 (= 250)$, respectively. When autonomous investment

2. Explain the supply side of macroeconomic equilibrium.

At a fixed price, the value of ex ante aggregate demand for final goods, AD, is equal to the sum total of ex ante consumption expenditure and ex ante investment expenditure. Under the effective demand principle, the equilibrium output of the final goods is equal to ex ante aggregate demand, as

$Y = A + c.Y$ where A is the total value of autonomous expenditure in the economy. Let us consider a numerical example to derive the value of the aggregate demand and hence equilibrium output in the economy at a fixed price.

Suppose the values of the autonomous expenditures are $C = 40$, $I = 10$ and the value of mpc, $c = 0.8$.

Consider $Y = 200$, as a trial solution. At this output, the value of the ex ante consumption expenditure is $C = C + 0.8.Y = 40 + (0.8)200 = 200$, ex ante investment expenditure is $I = I = 10$ and ex ante aggregate demand is $AD = C + I = 200 + 10 = 210$.

At the level of output $Y = 200$ the value of ex ante aggregate demand is 210, which denotes a situation of excess demand. Clearly, $Y = 200$ is not the equilibrium level of output in the economy.

Consider, next, the output level $Y = 300$. Calculations like the above case shows that the value of ex ante aggregate demand will be $A + cY = C + I + cY = 50 + (0.8)300 = 290$.

The ex-ante aggregate demand falls short of the output and there is excess supply. Hence, $Y = 300$ is also not the equilibrium level of output in the economy. Finally, consider $Y = 250$. At this output, $AD = 50 + (0.8)250 = 250$. We have ultimately hit the correct value of Y, at which aggregate demand equals aggregate supply. $Y = 250$ is, therefore, the equilibrium output of the economy at the fixed price-interest rate combination.

3. Explain the multiplier mechanism.

In the absence of a government imposing indirect taxes or disbursing subsidies, the value of the total output of final goods or GDP is equal to National Income. The production of final goods employs factors such as labour, capital, land and entrepreneurship.

In the absence of indirect taxes or subsidies, the total value of the final goods output is disbursed among different factors of production – wages to labour, interest to capital, rent to land etc. Whatever is left over is appropriated by the entrepreneur and is called profit.

Thus the sum total of aggregate factor payments in the economy, National Income, is equal to the aggregate value of the output of final goods, GDP. In the above example the value of the extra output, 10, is distributed among various factors as factor payments and hence the income of the economy goes up by 10.

When income increases by 10, consumption expenditure goes up by $(0.8)10$, since people spend 0.8 (= mpc) fraction of their additional income on consumption. Hence, in the next round, aggregate demand in the economy goes up by $(0.8)10$ and there again emerges an excess demand equal to $(0.8)10$.

Therefore, in the next production cycle, producers increase their planned output further by $(0.8)10$ to restore equilibrium. When this extra output is distributed among factors, the income of the economy goes up by $(0.8)10$ and consumption demand increases further by $(0.8)210$, once again creating excess demand of the same amount.

This process goes on, round after round, with producers increasing their output to clear the excess demand in each round and consumers spending a part of their additional income from this extra production on consumption items – thereby creating further excess demand in the next round.

4. Discuss the paradox of thrift.

If all the people of the economy increase the proportion of income they save (i.e. if the mps of the economy increases) the total value of savings in the economy will not increase – it will either decline or remain unchanged. This result is known as the Paradox of Thrift – which states that as people become more thrifty they end up saving less or same as before.

Suppose at the initial equilibrium of $Y = 250$, there is an exogenous or autonomous shift in peoples' expenditure pattern – they suddenly become more thrifty. This may happen due to a new information regarding an imminent war or some other impending disaster, which makes people more circumspect and conservative about their expenditures. Hence the mps of the economy increases, or, alternatively, the mpc decreases from 0.8 to 0.5.

At the initial income level of $AD^*1 = Y^*1 = 250$, this sudden decline in mpc will imply a decrease in aggregate consumption spending and hence in aggregate demand, $AD = A + cY$, by an amount equal to $(0.8 - 0.5) 250 = 75$.

This can be regarded as an autonomous reduction in consumption expenditure, to the extent that the change in mpc is occurring from some exogenous cause and is not a consequence of changes in the variables of the model. But as aggregate demand decreases by 75, it falls short of the output $Y^*1 = 250$ and there emerges an excess supply equal to 75 in the economy.

	<i>Consumption</i>	<i>Aggregate Demand</i>	<i>Output/Income</i>
Round 1	0	10 (Autonomous Increment)	10
Round 2	$(0.8)10$	$(0.8)10$	$(0.8)10$
Round 3	$(0.8)^2 10$	$(0.8)^2 10$	$(0.8)^2 10$
Round 4	$(0.8)^3 10$	$(0.8)^3 10$	$(0.8)^3 10$
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