



# *Economics Notes PDF*

*On*

*Determination of Income and Employment*

*(Class - 12)*

### **AGGREGATE DEMAND:**

It refers to the total value of all final goods and services that are planned to be purchased by all sectors of the economy at a given level of income over a given time. AD denotes the total expenditure on goods and services in an economy over a given time.

#### **Components of Aggregate demand are:**

- (i) Household consumption expenditure (C).
- (ii) Investment expenditure (I).
- (iii) Govt. consumption expenditure (G).
- (iv) Net export (X – M).

Thus,  $AD = C + I + G + (X - M)$

#### **Components of Aggregate Demand in Closed Economy:**

- (i) A three sector economy;

$$AD = C + I + G$$

- (ii) A Two sector economy;

$$AD = C + I$$

#### **Ex-ante aggregate demand:**

- The term ex-ante refers to what has already been planned.
- So, it is planned aggregate demand.

#### **Ex-post aggregate demand:**

- Actual consumer spending and business capital investment are included in ex-post aggregate demand.
- In other words, the ex-post describes what actually occurred.

### **AGGREGATE SUPPLY**

It is the money value of all final goods and services available for purchase by an economy during a given period. It is the flow of goods and services in the economy. Since, money value of final goods and services is equal to net value added, **AS is nothing but the national income.**

$$AS = C + S$$

Aggregate supply represents the national income of the country.

$$AS = Y \text{ (National Income)}$$

### **CONSUMPTION FUNCTION**

It expresses the functional relationship between aggregate consumption and national income.

Thus, consumption (C) is a function of income (Y).  $C = F(Y)$

Where, C = Consumption; F = Function; Y = Disposable income Consumption at a point of time can be measured with the equation:

$$C = C^- + cY$$

C = Consumption

$C^-$  = Autonomous consumption

$cY$  = Induced consumption

Y = Income

**Autonomous Consumption:**

- Autonomous consumption is denoted by  $C^{\text{---}}C^{\text{---}}$  and represents consumption that is unaffected by income.
- When consumption occurs even when income is zero, it is due to autonomous consumption.
- Hence this consumption is independent of income.

**Induced Consumption:**

- The induced component of consumption,  $cY$ , demonstrates consumption's dependence based on earnings/income.
- Hence, this consumption is dependent on income.

**PROPENSITY TO CONSUME**

It is a schedule that shows consumption expenditure at different levels of income in an economy.

**Consumption function (propensity to consume) is of two types:**

- (a) Average propensity to consume (APC)
- (b) Marginal propensity to consume (MPC)

**1. Average propensity to Consume (APC):** It refers to the ratio between total consumption(C) and total income(Y) at a given level of income in the economy.

**Important Points about APC:**

- **APC is more than 1:** as long as consumption is more than national income before the break-even point,  $APC > 1$ .
- **APC = 1,** at the break-even point, consumption is equal to national income.
- **APC is less than 1:** beyond the break-even point. Consumption is less than national income.
- **APC** falls with increase in income.
- **APC** can never be zero: because even at zero level of national income, there is autonomous consumption.

**2. Marginal Propensity to Consume (MPC):** Marginal propensity to consume refers to the ratio of change in consumption expenditure to change in income.

**Points to Remember about MPC:**

- **MPC=1:** If all the extra income is consumed, then  $\Delta C = \Delta Y$ , resulting in  $MPC = 1$ .
- **MPC = 0:** However, if the entire additional income is saved,  $\Delta C = 0$ , and  $MPC = 0$ .
- **Constant MPC:** MPC is the slope of the consumption curve, and it remains constant in the short run.
- $APC \text{ value} > MPC$ .

**SAVING FUNCTION:**

The functional relationship between saving and national income is referred to as the saving function.

**Equation of saving function**

$$S = f(y)$$

Where,

S = Saving

Y = National Income

f = Functional relationship.

**Saving Function (Propensity to Save) is of two types.**

- (i) Average Propensity to Save (APS)
- (ii) Marginal propensity to Save (MPS)

**1. Average Propensity to Save (APS):**

Average propensity to save refers to the ratio of savings to the corresponding level of income. Important Point about APS:

- **APS can never be 1 or more than 1:** As savings can never be equal to or more than income.
- **APS can be zero:** At breakeven point  $C = Y$ , hence  $S = 0$
- **APS can be negative:** At income levels which are lower than the break-even point, APS can be negative. when consumption exceeds income.
- APS rises with increase in income.

**2. Marginal Propensity to Save (MPS):**

- It is the change in savings per unit of income change.
- It is represented by  $s$  and equals  $1 - c$ . This is because 1 is the whole, and if we less consumption from it, we can get the savings.
- It follows that,  $S + C = 1$ , i.e., the total of savings and consumption equals one.

**Points to Remember About MPS:**

- MPS ranges from 0 to 1.
- MPS is the saving curve's slope.
- In the short run, MPS remains constant.

**Relationship between APC and APS:**

The sum of APC and APS is equal to one. It can be proved as under we know:

$$APC + APS = 1$$

$$Y = C + S$$

Dividing both sides by  $Y$ , we get

$$APC + APS = 1$$

because income is either used for consumption or for saving.

**Relation between MPC and MPS:**

We know  $MPC + MPS = 1$

Also,

$$Y = C + S$$

Hence,

$$\Delta Y = \Delta C + \Delta S$$

Dividing both sides by  $\Delta Y$ , we get

$MPC + MPS = 1$  because total increment in income is either used for consumption or for saving.  $1 = \frac{\Delta C}{\Delta Y} + \frac{\Delta S}{\Delta Y} = \frac{\Delta C}{\Delta Y} + \frac{\Delta S}{\Delta Y}$

$$1 = MPC + MPS$$

**INVESTMENT**

An investment is an asset or item purchased with the intention of earning income or increasing in value. An increase in the value of an asset over time is referred to as appreciation.

**The investment expenditure is classified under two heads:**

(i) Induced investment

(ii) Autonomous investment

- **Induced Investment:** It is defined as an investment that is based on profit expectations and is directly influenced by income level.
- **Autonomous Investment:** It is defined as an investment that is not affected by changes in income and is not motivated solely by a profit motive.

**Ex-Ante Savings:** Ex-ante saving refers to the amount of savings which all the household intended to save at different levels of income in the economy at the beginning of the period. It is also known as planned savings.

**Ex-ante Investment:** Ex-ante investment refers to the investment made by firms in the economy during a specific period. The planning is done with future expectations in mind.

**Ex-Post Saving:** Ex-post savings refer to the actual or realised savings in an economy during a financial year at the end of the period.

**Ex-post Investment:** This refers to the actual investment made by all entrepreneurs in the economy during a given period. It is the outcome of actual investment.

**EQUILIBRIUM LEVEL**

Equilibrium level of income is determined only at the point where  $AD = AS$  or  $S = I$ , i.e. the flow of goods and services in the economy is equal to the demand for goods and services But it cannot always be at full employment level also as it can be at less than full employment.

**Short Run Equilibrium Output:**

The quantity of real GDP that will exist when AD intersects Short Run Aggregate Supply in a short-run macroeconomic equilibrium is the amount of aggregate output produced.

**Assumptions:**

- **Closed Economy:** In the framework of a two-sector model (households and firms), the determination of equilibrium output will be investigated. It implies that there is no government or international sector. Such that  $AD=C+I$
- **Self contained Investment:** It is assumed that investment expenditure is self-contained, i.e., investments are unaffected by income levels.
- **Short-period analysis:** This analysis is with reference to short periods only.

**Types of Employment:**

- **Full employment:** It is a situation when all those who are able and willing to work at prevailing wage rate, get the opportunity to work.
- **Voluntary unemployment:** It is a situation where a person is able to work but not willing to work at prevailing wage rate.
- **Involuntary unemployment:** It is a situation where a worker is able and willing to work at prevailing wage rate but does not get work.
- **Under employment:** It is a situation where all those who are able to work at existing wage rates, are not getting jobs. It refers to that situation in the economy where  $AS = AD$  or  $S = I$ , but without fuller utilization of the labour force.

**Multiplier Mechanism:**

- The multiplier shows us what the eventual change in income will be as a result of a change in investment. Changes in investment lead to changes in income.
- The aggregate demand rises when the autonomous measures (A) rise.
- As a result, output and income will rise in the next round, causing consumption and the AD to rise. This is referred to as the multiplier mechanism.
- It is represented symbolically by:

$$\Delta I \rightarrow \Delta Y \rightarrow \Delta C \rightarrow \Delta Y$$

The operation of a multiplier can be illustrated using the table below, which is based on consumption, that is,

$$\Delta K = 1000 \text{ and } MPC = 4 / 5$$

**Investment Multiplier:**

- Investment multiplier (K) is the ratio of change in income ( $\Delta Y$ ) due to change in investment  $\Delta I$ .
- The value of the investment multiplier ranges from one to infinity.

**EXCESS DEMAND AND INFLATIONARY GAP**

(a) when in an economy, aggregate demand exceeds “aggregate supply at full employment level”, the demand is said to be an excess demand.

(b) Inflationary gap is the gap showing excess of current aggregate demand over ‘aggregate supply at the level of full employment’. It is called inflationary because it leads to inflation (continuous rise in prices).

(c) A simple example will further -clarify it. Let us suppose that an imaginary economy by employing all its available resources can produce 10,000 quintals of rice. If aggregate demand of rice is say 12,000 quintals, this demand will be called an **excess demand**, because aggregate supply at the level of full employment of resources is only 10,000 quintals and the result of the gap of 2000 quintals will be called an inflationary gap. In the above diagram Inflationary gap is AB because at Full employment  $Y^*$ , Aggregate demand ( $BY^*$ ) is greater than Aggregate Supply ( $AY^*$ ).

**Impacts or effects of excess demand on price, output and employment:**

(a) **Effect on General Price Level:** Excess demand gives a rise to general price level because it arises when aggregate demand is more than aggregate supply at a full employment level. There is inflation in the economy showing an inflationary gap.

(b) **Effect on Output:** Excess demand has no effect on the level of output. Economy is at full employment level and there is no idle capacity in the economy. Hence output can't increase.

(c) **Effect on Employment:** There will be no change in the level of employment also.

The economy is already operating at full employment equilibrium, and hence, there is no unemployment.

**DEFICIENT DEMAND**

It occurs when AD falls short of AS at full employment. To put it another way,  $AD < AS$  is at full employment. It's referred to as deficient demand.

Reasons for Deficient demand:

- Fall in household consumption demand due to decreased propensity to consume.
- Fall in private investment demand because of lesser provision and availability of credit facilities.
- Reduced public (government) expenditure.
- Fall in demand for exports.
- Fall in supply of money.
- Fall in disposable income.

**DEFLATIONARY GAP:**

- Deflationary gap refers to the difference between the actual aggregate demand and the level of aggregate demand required to achieve full employment.
- It assesses the degree of deficient demand.
- The area between a and b shows a deflationary gap, as here the Aggregate supply is greater than that of aggregate demand.

**Measures to control the excess demand: We can control the excess demand with the help of the following policy:**

**1. Monetary Policy:**

It is the policy of a country's central bank to control the amount of money in circulation and the availability of credit in the economy.

**A. Quantitative measures:**

These are the monetary policy instruments that influence the overall supply of money/credit in the economy. These instruments do not direct or restrict credit flow to specific sectors of the economy.

**(I) Bank Rate:**

The bank rate is the interest rate at which a central bank lends money to commercial banks with no security.

- **Excess Demand:** Bank Rate should be increased in situations of excess demand, as due to this, the quantity of money accessible to banks decreases, and the commercial bank's capacity to provide credit also falls. Hence the aggregate demand falls down with a low credit creation and supply of money in the economy.
- **Deficient Demand:** Bank Rate should be reduced in situations of deficient demand, as due to this, the quantity of money accessible to banks increases, and the commercial bank's capacity to provide credit also rises. Hence the aggregate demand increases as a result of high credit creation and supply of money in the economy.

**(II) Cash Reserve Ratio (Increase in CRR):**

It refers to the minimum percentage of a bank's total deposits, which

it is required to keep with the central bank. Commercial banks have to keep with the central bank a certain percentage of their deposits in the form of cash reserves as a matter of law.

- **Excess Demand:** CRR should be increased in situations of excess demand, as due to this, the quantity of money accessible to banks decreases, and the commercial bank's capacity to provide credit also falls. Hence the aggregate demand falls down with a low credit creation and supply of money in the economy.
- **Deficient Demand:** CRR should be reduced in situations of deficient demand, as due to this, the quantity of money accessible to banks increases, and the commercial bank's capacity to provide credit also rises. Hence the aggregate demand increases as a result of high credit creation and supply of money in the economy.

**(III) Open Market Operations (OMO) (Sale of securities):**

It consists of buying and selling of government securities and bonds in the open market by the central bank. In a situation of excess demand leading to inflation, the central bank sells government securities and bonds to commercial banks. With the sale of these securities, the power of commercial banks to give loans decreases, which will control excess demand.

- **Excess Demand:** In situations of excess demand, the central bank should sell the government assets and bonds in the open market. This reduces the ability of commercial banks to provide loans, thus reducing the levels of aggregate demand.
- **Deficient Demand:** In situations of deficient demand, the central bank should buy the government assets and bonds in the open market. This increases the ability of commercial banks to provide loans, thus increasing the levels of aggregate demand, due to higher purchasing power in the hands of people.

## **B. Qualitative Instruments or Selective Tools of Monetary Policy:**

These instruments are used to regulate the direction of credit. They are as under:

### **(i) Imposing margin requirement on secured loans (Increase):**

- Businesses and traders get credit from commercial banks against the security of their goods. Bank never gives credit equal to the full value of the security. It always pays less value than the security.
- So, the difference between the value of security and value of loan is called marginal requirement.
- In a situation of excess demand leading to inflation, the central bank raises margin requirements. This discourages borrowing because it makes people get less credit against their securities.

### **(ii) Moral Suasion:**

- Moral suasion implies persuasion, request, informal suggestion, advice and appeal by the central banks to commercial banks to cooperate with general monetary policy of the central bank.
- In a situation of excess demand leading to inflation, it appeals for credit contraction.

### **(iii) Selective Credit Control (SCC) [Introduce Credit Rationing]:**

- In this method the central bank can give directions to the commercial banks not to give credit for certain purposes or to give more credit for particular purposes or to the priority sectors.
- In a situation of excess demand leading to inflation, the central bank introduces rationing of credit in order to prevent excessive flow of credit, particularly for speculative activities. It helps to wipe off the excess demand.

## **2. Fiscal Policy:**

Fiscal policy refers to the general government's expenditure and income policies used to achieve its objectives. It includes:

### **A. Change in taxation:**

Taxation is used to represent revenue policy.

- **Excess Demand:** During an inflationary period, the government raises taxes, resulting in a loss in people's purchasing power. This is due to the fact that in order to limit excess demand, the economy's liquidity must be reduced.
- **Deficient Demand:** In case of deficient demand, tax rates

### **B. Change in public expense:**

The government must invest heavily in public works projects like roads, buildings, and irrigation systems.

- **Excess Demand:** During an inflationary period, the government should limit (lower) its expenditure on public works such as roads, buildings, and irrigation projects, therefore reducing people's money income and consumer requirements.
- **Deficient Demand:** During deficient demand, the government should increase its expenditure on public works such as roads, buildings, and irrigation projects, therefore increasing people's money income and consumer requirements.



**C. Increase in Public Borrowing/Public Debt:**

(i) this measure means that the government should raise loans from the public and hence borrowing decreases the purchasing power of people by leaving them with a lesser amount of money.

(ii) So, the government should resort to more public borrowing during excessive demand.

(iii) Government should make long term debts more attractive so that the public may use their excess liquidity amount of money in purchasing these bonds, which will reduce the liquidity amount of money in the economy and thereby inflation could be controlled.

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