# UNIT 8

Consumption, Saving and Investment

## *Does consumption depend upon income?*

- Yes, consumption is a part of income and directly depends upon income itself.
- However, we must note that consumption is necessary for survival and thus takes place even if income is zero.
- In such a case, households might be consuming from sources such as accumulated wealth, borrowing, or begging (seeking charity).

# I. Autonomous Consumption

- Consumption when income is zero
- when a minimum level of consumption must be maintained for survival.
- it is independent of income level

## II. Induced Consumption

- Consumption when income rises
- With an increase in income, consumption also increases, but usually less than the income increased
- Varies with income

# Relationship between income& Consumption

**Table 8.1: Relationship between income and consumption**

| Income (in units of money) | Consumption expenditure (in units of money) |
|---|---|
| 0 | 100 |
| 200 | 200 |
| 400 | 300 |
| 600 | 400 |
| 800 | 500 |
| 1000 | 600 |

# Determinants of Consumption Expenditure

## Money Income

- The increase in income results in an increase of consumption expenditure.

## Distribution of Income

- Consumption expenditure per unit of income is more for poor people than rich people.
- Unequal distribution of a nation’s income reduces consumption expenditure, and equality in distribution of income increases it.

## Level of Direct Taxes

- A higher level of direct taxes leads to a lower level of personal disposable income, and thus to a decrease in

## Expectation of the Future

- If prices are expected to rise in the future, present consumption will be more.

## Rate of Interest

- Increases in the rate of interest lead to a reduction of consumption expenditure and an increase in

## Level of Wealth

- A higher wealth level leads to higher consumption expenditure.

## Consumption Function

- The consumption function indicates how consumption responds to different levels of income.
- is also known as propensity to consume.

$$C = f(Yd)$$

Where C = consumption expenditure, and Yd = personal disposable income.

C = a + bYd, where a is autonomous consumption, b is percentage of income for consumption, and bYd is induced consumption.

- autonomous consumption
- induced consumption
- total consumption
- saving

Example: Consider a consumer with a consumption function given by C = 110 + 0.75Yd, and disposable income of Birr 4,800. Calculate the consumer's:

Solution: *Given:* Consumption function $C = 110 + 0.75Y_d$

Disposable income = 4,800

a Autonomous consumption is the level of consumption when income is zero. Thus,

Autonomous consumption = $110 + 0.75 \times 0 = 110$

b Induced consumption is = Total consumption

– Autonomous consumption

Induced consumption = $0.75 \times 4{,}800 = 3{,}600$

c Total consumption = Autonomous consumption

+ Induced consumption

$= 110 + 3{,}600 = 3{,}710$

d Saving = $Y_d - C = 4{,}800 - 3{,}600 = 1{,}200$

$S = Y_d - bY_d$

# What is the distinction between Consumption and Consumption Function?

- Consumption refers to the amount of income which is spent upon the purchase of goods and services at a given level of income
- consumption function refers to the whole of a schedule that shows consumption expenditure at various levels of income.

## Table 8.2: Hypothetical Consumption Function Schedule

| Level of National Income (in million Birr) ($Y_d$) | Consumption (in million Birr) (C) |
|---|---|
| 0 | 50 |
| 50 | 75 |
| 100 | 100 |
| 150 | 125 |
| 200 | 150 |
| 250 | 175 |
| 300 | 200 |

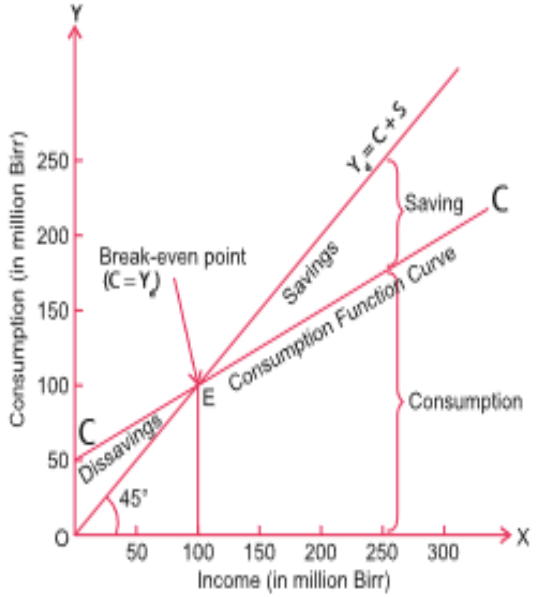



**Figure 8.1: Consumption function curve**

Note the following facts:

Consumption increases with increase in income.

Consumption (i.e., autonomous consumption) can never be zero, even if income is zero. That is why the consumption function curve starts from point C and not from zero.

The 45° line Yd = C + S is called the expenditure equals income line.

# R/ship B/n Consumption & Income

## I. Average Propensity to Consume (APC)

- is the ratio of total consumption expenditure (C) to total income (Yd) at a given level of income in an economy.

  APC= C/Yd

For example, if at a particular time, the income level in an economy is Birr 250 million, and consumption is Birr 175 million,

- This example indicates that 70% of income was spent by way of consumption expenditure.

APC= C/Yd = 175/250= 0.7 or 70%

Example 2:

If aggregate income is very low — for example, Birr 50 million – and if aggregate consumption is Birr 75 million, APC= 75/50= 1.5

Thus the value of APC may be greater than 1, because when income is at a very low level, consumption exceeds income to meet the very basic necessities. (Then saving becomes negative).

**Table 8.3: Hypothetical estimation of APC**

| Income (in million Birr) ($Y_d$) | Consumption (in million Birr) (C) | APC $\left(\frac{C}{Y_d}\right)$ |
|---|---|---|
| 200 | 150 | 0.75 |
| 250 | 175 | 0.7 |
| 300 | 200 | 0.66 |

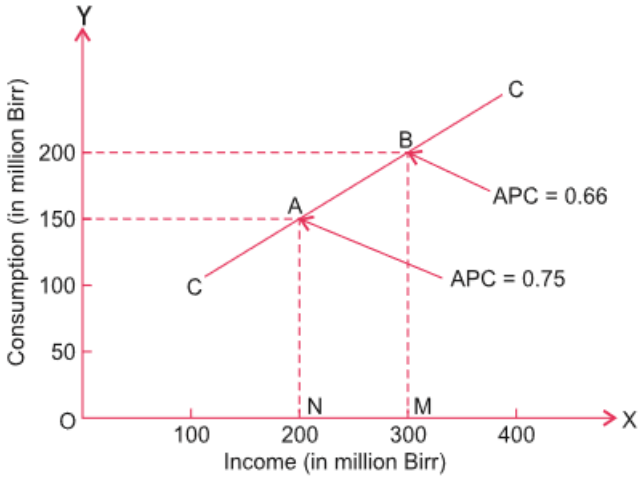



**Figure 8.2: Estimation of APC**

## II Marginal Propensity to Consume (MPC)

- The ratio of change in consumption (ΔC) to change in income (ΔYd) .

$$MPC = \Delta C / \Delta Yd$$

- **For example** if a country's national income increases from Birr 200 million to Birr 250 million, and as a result consumption expenditure goes up from Birr 150 million to Birr 175 million, then

MPC = ΔC/ ΔYd

= 25/50= 0.50

- Note that, with an increase in income, consumption expenditure also increases

**Table 8.4: Hypothetical MPC estimation**

| Income (in million Birr) ($Y_d$) | Change in Income ($\Delta Y_d$) | Consumption (in million birr) (C) | Change in Consumption ($\Delta C$) | MPC $\left(\frac{\Delta C}{\Delta Y_d}\right)$ |
|---|---|---|---|---|
| 150 | — | 100 | — | — |
| 250 | 100 | 150 | 50 | 0.5 |
| 350 | 100 | 175 | 25 | 0.25 |

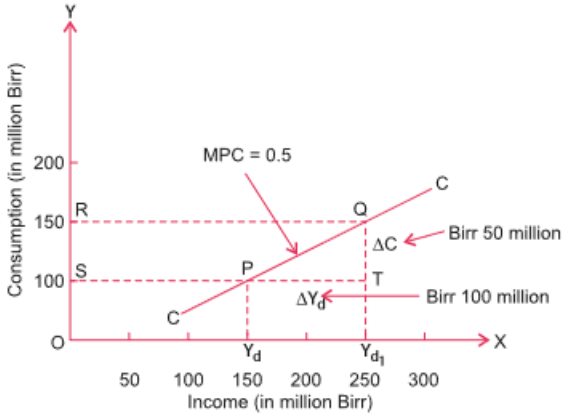



**Figure 8.3: Estimation of MPC**

# Properties of MPC

- MPC is greater than zero but less than one
- MPC falls with increase in income
- MPC of the poor class is higher than those of other classes
- MPC is stable in the short run

# SAVING

- The part of income which is not spent on consumption .
- is an excess of income over consumption expenditure

  $S = Yd - C$

Just like consumption, saving depends directly upon income.

As income increases, savings also increase, but the rate of increase in savings is more than the rate of increase in income.

At low income levels, savings is negative.

# Determinants of Saving

- **Level of Income**:  as income increases, saving also increases
- **Distribution of Income**: Saving increases when income inequality increases.
- **Expectation of the Future**: If prices are expected to fall in the future, present consumption is less, and hence saving is more.

- **Rate of Interest:** A higher rate of interest induces greater saving
- **Level of Wealth:** A lower wealth level leads to a lower saving level.
- **Level of Direct Taxes:** A higher level of direct taxes produces a lower level of personal disposable income and hence reduced savings.
- **Individual Nature:** Saving is directly related to the nature of the individual. For example, a miser saves more than a spendthrift.

# Saving Function

- The functional relationship between saving and income is called saving function (or propensity to save).

  $S = f(Yd)$ or $S = Yd - C$

**Table 8.5: Hypothetical Saving Function Schedule (in million Birr)**

| Income ($Y_d$) | Consumption (C) | Savings (S) |
|---|---|---|
| 0 | 50 | –50 |
| 50 | 75 | –25 |
| 100 | 100 | 0 |
| 150 | 125 | 25 |
| 200 | 150 | 50 |
| 250 | 175 | 75 |
| 300 | 200 | 100 |

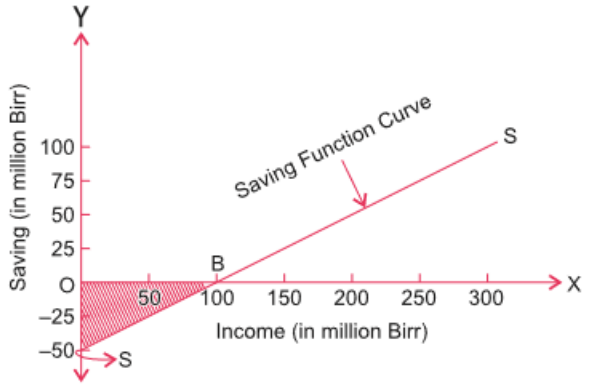



**Figure 8.4: Hypothetical Saving function curve**

# Consumption and Saving Functions are Complementary

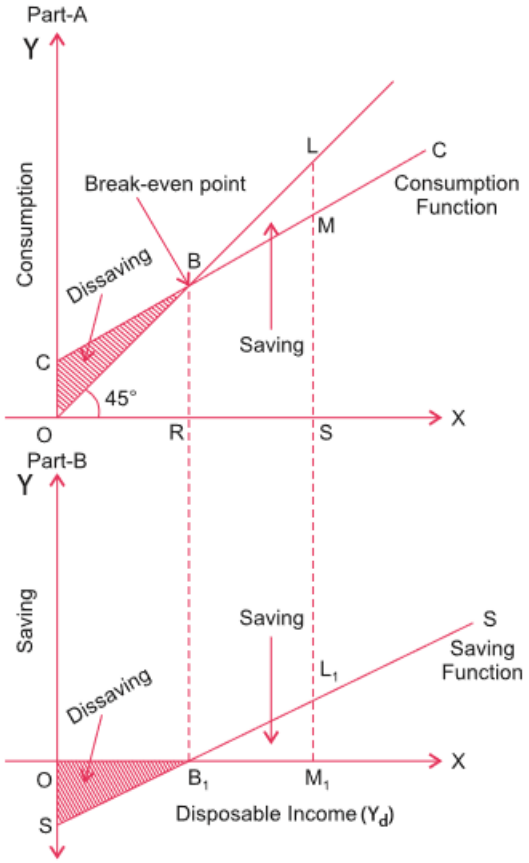



Figure 8.5: Consumption and saving functions

# R/ship B/n Saving & Income

I Average Propensity to Save (APS)

- is the ratio of total savings (S) to total income (Y)
- It is the part of total income which is saved.

APS = S/Yd

For example, if income (Yd) is Birr 250 million and saving(s) is Birr 75 million,

APS= S/Yd = 75/250= 0.3 or 30%

**Table 8.6: Hypothetical APS estimation**

| Income (in million Birr) ($Y_d$) | Saving (in million Birr) (S) | APS $\left(\frac{S}{Y_d}\right)$ |
|---|---|---|
| 200 | 50 | 0.25 |
| 250 | 75 | 0.3 |
| 300 | 100 | 0.33 |

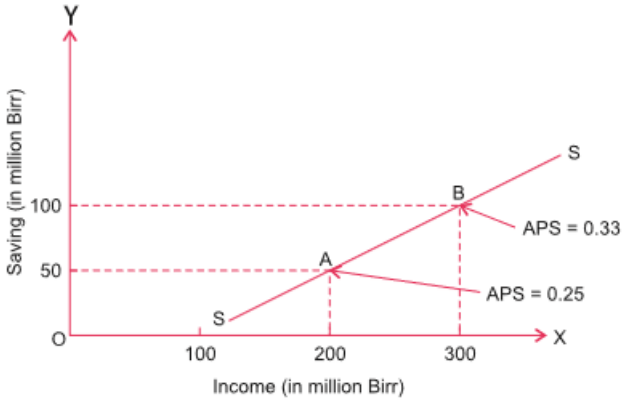



**Figure 8.6: Estimation of APS**

II Marginal Propensity to Save (MPS)

- It is the ratio of the change in saving (ΔS) to the change in income (ΔYd).

For example, if a country's national income increases from Birr 200 million to Birr 250 million, and saving increases from Birr 50 million to Birr 75 million, then

MPS= ΔS/ ΔYd= 50/100= 0.50

**Table 8.7: Hypothetical MPS estimation**

| Income (in million Birr) ($Y_d$) | $\Delta Y_d$ | Saving (in million Birr) (S) | $\Delta S$ | MPS $\left(\frac{\Delta S}{\Delta Y_d}\right)$ |
|---|---|---|---|---|
| 150 | – | 50 | – | – |
| 250 | 100 | 100 | 50 | 0.50 |
| 350 | 100 | 175 | 75 | 0.75 |

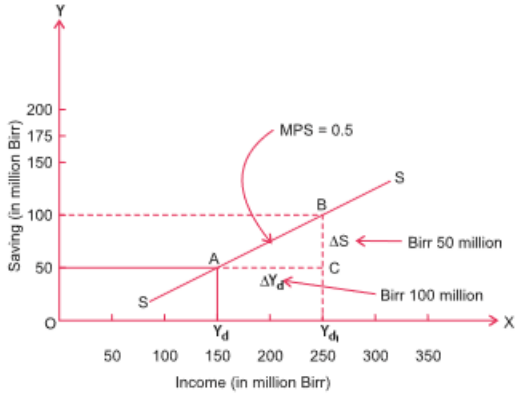



**Figure 8.7: Hypothetical Estimation of MPS**

# Properties of MPS

- Value of MPS lies between 0 and 1. In other words, $0 < MPS < 1$.
- MPS increases with increase in income.
- The MPS of the poor is lower than that of the rich.

# RELATIONSHIP BETWEEN CONSUMPTION AND SAVING

**Relationship between APC and APS**

- the sum of APC and APS is always equal to unity (1)

APC+APS = 1

**Relationship between MPC and MPS**

- the sum of MPC and MPS is always equal to unity (1)

MPC+MPS = 1

# INVESTMENT

an addition, during a predefined ‘current period’, to national resources such as:

- existing stock of physical (or real) assets for example, the building of new factories, new machines or equipment;
- existing stock of finished goods or raw materials.

# Types of Investment

**Induced Investment**

- is made with the motive of earning a profit as in the private sector.
- depends directly upon profit expectations.
- It is income-elastic.
- If national income goes up, induced investment also goes up.

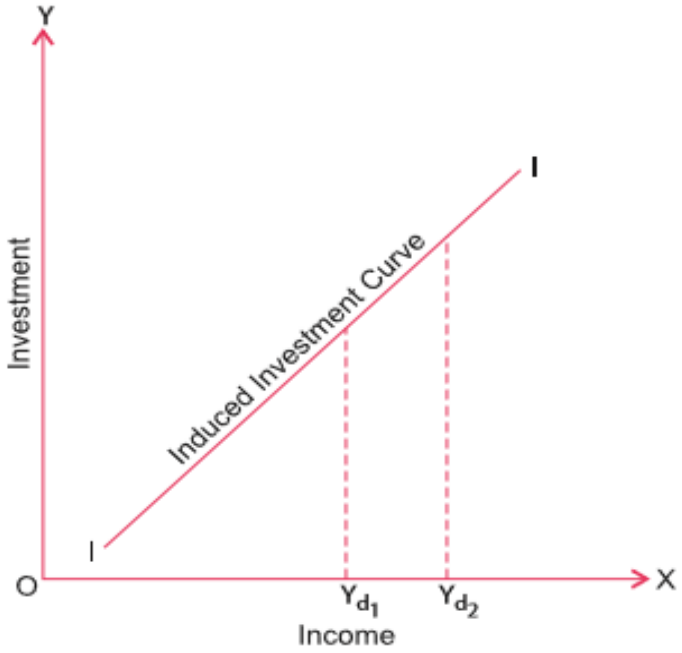



**Figure 8.8: Induced investment**

**Autonomous Investment**

- is made irrespective of income level.
- is generally taken in the government sector.
- is income inelastic – it is not affected by changes in income level.

For instance, government investment in public utilities like the construction of railways, roads, post and telegraph, electricity, etc.,

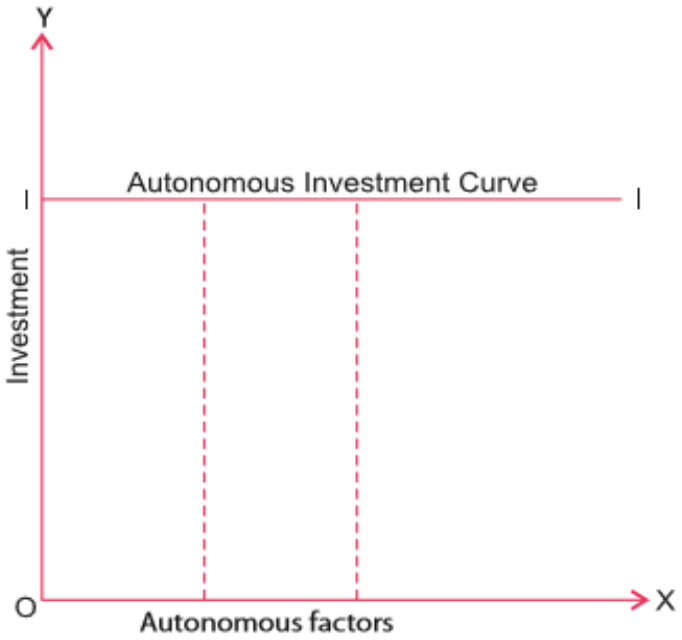



**Figure 8.9: Autonomous factors**

**Remark:** Any investment made for the purpose of compensating for depreciation caused by production in a current year is not real investment. Rather, it is what is sometimes known as replacement investment.

# Determinants of Investment

**Profit Expectation**

- If the business people feel confident that opportunities for making profits in the future exist, they will be prepared to undertake investment expenditure. On the other hand, if they do not expect to make profits, they will not invest.

## Corporate Tax

- The higher the tax rate is, the more that paying taxes reduces revenues and, in turn, reduces profits. Therefore, decreases investment.

## Level of National Income

- If national income goes up, induced investment also goes up.

# Role of Investment in Economic Growth

**Role of Private Investment in Economic Growth:**

- Investment made by the private sector increases the productive capacity of the economy and hence increases output and income.

# Role of Public Investment in Economic Growth

- Public investment promotes economic growth directly by developing social overhead and infrastructure, by establishing capital-good industries, basic and key industries, etc.
- Public investment can stimulate economic growth indirectly by providing education, training, and research facilities.

- Public investment reduces disparities in income and wealth as well as regional disparities. Thus public investment promotes the achievement of economic growth with social justice.