Meaning of National income

National income has been defined by various writers from different angles.

1. Generally it refers to the money value of the flow of goods and services available annually in an economy.

2. National income is the total money value of goods & services produced in a country (i.e.) 1 Year.

3. National income is, the money value of all final outcome of all economic activities of the people of a country.

4. National income estimate which measures the volume of commodities and services turned out during a given period, counted without duplication.

5. National income is the value of goods and services produced during a given period counted without duplication.

6. Total income of the country is called ‘national income’.

Concepts of national income

1. Gross Domestic Product- GDP
2. Gross National Product- GNP
3. Net Domestic Product- NDP
4. Net National Product- NNP
5. National Income- NI
6. Personal Income- PI
7. Disposable Personal Income- DPI
8. Personal savings

1. Gross Domestic Product- GDP

It is the money value of final goods & services produced in the domestic country during a year.

In other words GDP is the income generated (created) by the factors of production during a year within the country by its own resources. It does not include the income earned from abroad. (money earned by citizens in foreign country)

\[ GDP = \text{Market value of goods & services produced by the residents in the country} \]

Plus (+) income earned in the country by foreigners

Minus (-) income received by residents of a country from abroad.

2. Gross National Product- GNP

Only our country income is calculated

Note - when calculating total GNP income earned in the country by the foreigners is reduced.

\[ GNP = GDP + \text{Net income from abroad (money earned by residents in foreign country)} \]

\[ GNP = \text{Market value of domestically produced goods & services} \]

Plus (+) income earned by the residents of a country in foreign countries

Minus (-) income earned in the country by the foreigners. (foreign people will take their money).

3. Net Domestic Product- NDP

It is the sum total of money value of final goods & services produced in the country in a year excluding depreciation cost.

Depreciation

Refers to all those expenditure undertaken by the producers to replace the worn out (damaged) parts of the capital goods like machinery, tools, equipments & buildings used up in the production of goods & services.

\[ NDP = GDP - \text{depreciation} \]
4. Net National Product- NNP

NNP = GNP – depreciation.

The sum total of money value of final goods & services produced in an economy in a year excluding deprecation cost. It includes income from abroad.

5. National Income- NI

NI = NNP – indirect taxes + subsidies

The firm have to pay indirect taxes on goods & services to the government. These taxes have to be deducted from the NNP to find out total national income.

Direct taxes- people pay

Indirect taxes - firms pay

Subsidies - a some of money given to keep the price of some thing low (government expenditure)

The government levies indirect taxes on goods sold on market. These taxes are collected from firms. At the same time, the government also provides subsidies to the firms which sell the goods fixed by the government. Selling the goods at a price fixed by the government will cause loss to the firms when the firms are not selling the goods at market prices. Such a loss is compensated by subsidies given by the government.

6. Personal Income-PI

PI = NI - ( corporate profits + social security contributions + Corporate income tax) + transfer payments

PI = The actual income received by the individuals or households in the country during the year.

Transfer payments = ( unemployment allowances, old age & widow pensions, relief payments, interest payment on public debts, etc)

7. Disposable Personal Income - DPI

DPI = PI – direct taxes

The whole of PI is not available to individuals for consumption as they have to pay direct taxes. The part of PI which is left after payment of personal direct taxes is called DPI
8. Personal savings

PS = DPI - personal consumption expenditure

What we save from personal income without adding consumption is known as personal savings.

\[
\text{GDP} = \text{NDP} = \text{PS} = \text{DPI} - \text{personal consumption expenditure}
\]

Methods of computation of national income

There are 3 methods of computation of national income

1. Product method (or) Census method (or) Value added method (or) Production method (or) Output method

2. Income method

3. Expenditure method

1. Product method (or) Census method (or) Value added method (or) Production method (or) Output method

- The total products produced in the economy are calculated for a year.
• Under this method, the economy is divided into different individual sectors such as agriculture, fishing, mining, construction, manufacturing, trade & commerce, transport, communication & other services.

• The net value by each productive enterprise as well as by each industry or sector is estimated.

• In order to arrive net cost by an enterprise we have to subtract the following from the value of output of an enterprise.

  a) Deprecation (Capital consumption)

  b) Indirect taxes

  c) Intermediate consumption (such as raw materials, fuels purchased from other firms)

• Here care must be taken to avoid double counting

• While estimating national income through product method certain precautions should be taken (i.e.) should be added or deducted.

2. Income method

• Income is calculated by adding up the rent of land, wages, salaries of employees, interest on capital, profits of entrepreneurs & income of the self employed people.

• Income is obtained by summing up of the income of all individuals of a country.

• While estimating national income through income method certain precautions should be taken (i.e.) which should be included & not included.

3. Expenditure method

• Expenditure method arrives income by adding up all expenditure made on goods & services during the year.

  a) Expenditure by consumers on goods & services

  b) Expenditure by private manufacturer on capital or investment goods.

  c) Expenditure by government on consumption as well as capital goods.

  d) Money received from export of goods & services.

• While estimating national income through expenditure method certain precautions should be taken (i.e.) which should be included & not included.
National product, National income, National expenditure

1. National product
   It consists of all the goods & services produced by the community & exchanged for money during a year. It does not include goods & services which are not paid for such as hobbies, housewives services charitable work etc. *(e.g.)* value of all goods & services produced by the firms in the economy.

2. National income
   It consists of all the income in cash & kind accruing to the factors of production. It represents the total income flow by the economy during the year. *(e.g.)* value of all incomes earned in making these goods & services.

3. National expenditure
   This represents the total spending or outlay of the community on the goods & services of all types (capital as well as consumption) produced during a given year. *(e.g.)* one’s man expenditure becomes other man’s income in the economy.

Importance (or) uses to calculate national income (or) use of national income data

1. Gives an idea of the structure of the economy *(understanding performance how much % of rate of growth has been achieved by our country)* to measure economic welfare.

2. Compare the international levels *(comparing the current & last year income to know about development)*

3. Planning economic development of the country *(for future decisions)*

4. Regional / economic development *(rural area development)*
5. Allocation of resources *(make use of resources)*
6. Potential area for growth *(to know which area has more growth, or invest money to increase growth)*
7. Development activities *(structural changes)*
8. Guide the government to formulate plans *(policy)* and fix targets *(budgets)*
9. Helps to make international comparisons, *(standard of living of people)*
10. Helps to study the rate of growth of an economy
11. Provide a reasonable basis for forecasting future economic events

**Difficulties (or) limitations (or) problems involved in estimation of calculating national income**

1. Double counting *(while evaluating national income no commodity or services should be counted twice, e.g. sugarcane – sugar – ice creams)*
2. Non-monetizes economy *(still barter system is followed in some rural areas)*
3. Stage of economic activity *(Production, distribution, consumption)*
4. Self consumption *(self purchase which is not known e.g. son & father)*
5. Lack of data *(showing less data to reduce taxes by firms) coverage of commodities & services*
6. Earning through illegal activities *(like smuggling, black marketing, gambling etc)*
7. Unwillingness *(not willing to give a particular information)*
8. Inefficiency *(not being much efficient)*
9. Inventory value *(not giving correct value)*
10. Depreciation calculation
11. Accuracy & imputed value *(fair method of calculation)*
12. Non-availability of reliable statistics *(accurate & correct information regarding consumption, investment & savings of rural as well as urban population is not available)*
13. Lack of accounting habit *(in India most of the producers do not follow the practice of keeping regular accounts because of illiteracy)*
14. Lack of uniform basis (there is no uniformity in evaluating commodities & services in terms of money)

15. Transfer problems or payments (transfer of money when reducing taxes)

16. Inter – country comparisons

**Circular flow of income**

The modern economy is a monetary economy. In the modern economy, money is used in the process of exchange. Money has removed the difficulties of barter system. Thus money acts as a medium of exchange.

1. Circular flow of income TWO- Sector economy (income & expenditure)

2. Circular flow of income THREE- Sector economy (income & expenditure with government)

3. Circular flow of income Four- Sector open economy (income & expenditure with government & foreign sector)

### 1. Circular flow of income TWO- Sector economy (income & expenditure)

**Two basic principles on which circular flow of income are explained**

1. In any exchange activity, the income received by the producer is equal to the amount spent by the consumer.

2. Goods & services produced, *flow in clock wise direction* & money payments to purchase these goods *flow in anticlock wise direction*. These activities causes circular flow.

**EXPLANATION**

- In any economy both production & consumption are considered to be the basic economic activity.
- We shall explain the flow of income in an economy by taking a model of a simplified economy in which only two sector operates *(i.e.)* household sector & producer's sector or firm.
- The upper loop shows flow of goods & services in the economy.
- Household supply services to the firm.
- Business firms by utilising the services produce goods & services.
• The firms supply goods to households as a reward to their services. (i.e.) goods flow from firms to households. (*when money was not introduced*).

• Such flow of goods & services is described as real flow in the economy.

• In the modern economics (*when money has been introduced*), factor payment are not made in kind but in terms of money.

• *Factor payment (i.e.) house holds receive their reward in the form of money as shown in the lower loop.*

• House holds utilise this money to purchase goods & services produced by the firms ( thus money flows from firms to house hold & back to firms.

• Since the income flow in a circular way between firms & households, this flow is also known as circular flow of income.

• In this model only consumption expenditure of the house hold & investment expenditure of firms are included as shown in the following equation.

\[ Y = C + I \]
\[ Y = \text{National income} \]

\[ C = \text{Consumption expenditure} \]

\[ I = \text{Investment expenditure.} \]

**Circular flow of income TWO- Sector economy with saving & investment**

- In the above analysis of the circular flow of income we have assumed that all income which the house hold receive, they spend it on consumer goods & services.

- If house holds save a part of their income, their saving will affect money flow in the economy.

- When house holds save in *financial markets* their expenditure on goods & services will decline.

- Savings reduce the flow of money (*profits*) to the business firms & will cause a fall in income for them.

- It is business man who borrow from the financial markets for investment in goods such as machines, factories, tools etc. Firm spend on investment in order to expand their productive capacity in future.
2. Circular flow of income THREE- Sector economy (*income & expenditure with government*)

The three sector model including government sector is explained

- Government plays a significant role in the economic life of any country. Government acts both as a consumer & producer in the modern economics.

- It has its own source of income & also it has to incur expenditure in a number of ways.

- Government collects taxes both from the firms & the house holds.

- Tax is the major source of income for the modern government. Withdrawing some amount from the households & the firms.

- A government spends the income on a number of activities which are so designed to benefit both the households & the firms. (*for e.g.*) *like old age pensions, sickness benefit, housing, unemployment*. This type of activity will satisfy the needs of the society.

- Likewise it is also possible that the government may incur expenditure to render some services to the firm sector. (*e.g.*) the government may decide to subsidies (*pay part of the cost for producing something*) the production of few important commodities. Similarly government may purchase goods & services from the firms for the use of society.
Another method of financing government expenditure is borrowing from the financial market.

After including the government spending, the equation will be

\[ Y = C + I + G \]

- **Y** = National income
- **C** = Consumption expenditure
- **I** = Investment expenditure.
- **G** = Government expenditure

3. **Circular flow of income Four-Sector open economy (income & expenditure with government & foreign sector)**

   - The four sector model includes foreign sector in addition to household, business enterprises & government sector in circular flow of income.
• Export causes an injection of money into the circular flow of money. When foreigners buy goods & services produced by domestic firms they are **exports** in circular flow of money.

• **Imports** are considered as leakages from the circular flow. They are expenditure incurred by the household sector to purchase goods from foreign countries.

• Take an *(e.g.)* household sector that buys goods imported from abroad & makes payment to the foreign firms thus is considered leakage from the circular flow of money.

• The household may receive transfer payments from the foreign sector for the **service rendered** by them in foreign.

The business firm export goods to foreign countries & get receipts from them. Such activities bring fresh injection of money in the circular flow. When firms purchase goods from the foreign firms & make payment to them, it causes leakage in the flow of money.
• Apart from this domestic firms also receive royalties, *(a sum of money)* interest, dividends, profits for investment made in foreign countries.

• Domestic firms also make payments for imports of machineries, capital goods, raw materials, consumer goods & services from abroad. Such import causes leakages for the circular flow.

• Like business firms, the government sector also makes payment for the goods imported & receive payment for the goods exports to foreign countries.

• Inclusion of foreign sector in the income equation will be shown as

\[ Y = C + I + G + (X - M) \]

*Y* = National income

*C* = Consumption expenditure

*I* = Investment expenditure.

*G* = Government expenditure

*X* = Denotes income through exports

*Y* = Payments for imports

*(X-M)* = Difference between export & import gives net income earned from abroad.

• Net income earned from abroad may be minus or plus depending upon the size of export & import.

• If the export is greater than the import, net income would be *(positive)*, on the other hand if the export is lower than the import then net income earned would be *(negative)*.

**Factors determining national income**

There are number of factors which determines the size of the national income in a country.

1. Quality & quantity of factors of production

2. The state of technical known how
3. Political stability.

1. Quality & quantity of factors of production
   - Quality & quantity of factors of production is one of the most important determinants in national income.
   - The quality & quantity of land determines the quality & quantity of agricultural production & the national income.
   - The quality & quantity of labour determining upon intelligence, education, training, etc. determines the volume of industrial production.
   - The quality & quantity of capital is one of the greatest determinants on total output.
   - The quality & quantity of organisation ability is also an important element determining the size of national income of a country.

2. The state of technical known how
   - This is another important determinants operating in our country.
   - A country with a poor technical knowledge cannot have a large size national income, as it will be incapable of exploiting its resources efficiently.
   - The extent of technical known how & technology of production determine the capital formation in the country.
   - Advanced technology will go in a long way in increasing the size of national income or economic development.

3. Political stability
   - The economic development of several countries, have been hindered (delayed) in the past by political stability.

The key to develop & increase in national income rest (stopped) on important factors like capital formation, technical, political stability etc. In backward economies, all these factors will be deplorably (shockingly bad) lacking & the size of the national income will be small.

Factor determining national income in different sectors

1. Determination of national income TWO- Sector model (income & expenditure)
2. Determination of national income THREE- Sector model (income & expenditure with government)

3. Determination of national income FOUR- Sector model (income & expenditure with government & foreign sector)

1. **Determination of national income TWO- Sector model (income & expenditure)**

The two sector model involves only the household sectors & the business sector.

- There are only two sectors in an economy
  a) The household sectors
  b) The business firms
  c) **Household** own all the factors of production (L,L,C) & sells factor services to the business firms to make their living. They spend a major part of their income on (consumer goods & services) supplied by the business firms.

b) **Business firms** on the other hand, hire factor services from the households & sell their entire product to the households.

- There is no government & therefore there is no tax & no government expenses.
- The households consume a part of their income & they save a part which goes to the investment.
- The two sector economy is a closed economy there is no foreign trade.
- In the business sector, there is no corporate (foreign) savings.
- All prices, including factor prices remain constant.

The equilibrium of national income is determined at a level where \( \text{aggregate demand} = \text{aggregate supply} \)

1.) **Aggregate demand**

- It is the total expenditure which all households & business firms want to make on goods & services.
- In a two sector model the aggregate demand consists of 2 components
There is consumption demand

There is a demand for capital goods which is called investment demand.

- Thus by aggregate demand we mean how much expenditure the households & the entrepreneurs are undertaking on consumption & investment.

**Aggregate demand = Consumption demand + investment demand**

- **Consumption demand**

  As income increases, consumption demand will also increase. *(in other words)* consumption demand is a function of income.

- **Investment demand**

  Investment demand depends on two factors

  1.) Marginal efficiency of capital *(investment)*

  *MEC means the expected rate of profits which the business community hopes to get from the investment in capital assets.*

  2.) Rate of interest

2. ) **Aggregate supply**

  The aggregate supply means the total money value of goods & services produced in an economy in a year. *The supply or output of final goods & services in a year.*

  - It is important to note that aggregate supply is the same thing as *national product* as both represents the value of output of final goods & services produced.

  - The *aggregate supply of goods of an economy depends upon the stock of capital, the amount of labour used & the state of technology.*

**Determination of national income TWO- Sector model *(saving & investment approach)***

- We have seen how equilibrium level of national income is determined by aggregate demand & aggregate supply.

- The equilibrium level of national income is established at the point where *aggregate demand = aggregate supply*
• But there is an alternative method for the explanation of the determination of national income. This alternative method explains the determination of national income directly by saving & investment.

• At a certain level of national income, investment by the entrepreneurs is more than savings by the people, this would mean that aggregate demand is greater than aggregate supply. This would induce (bring) the firm to increase production, raising the level of income & employment

• The result will be that national output will be increased on account of which national income will go up.

Further when at any level of income investment is less than savings, it means that aggregate demand is less than aggregate supply.

• This will induce (bring) the entrepreneurs to produce more goods. As a result the entrepreneurs will not be able to sell their entire output at given prices. The result will be that output will be reduced which will result in the reduction of national income.

2. Determination of national income THREE sector model (income & expenditure with government)

• In our analysis of two sector model we have explained how the level of national income is determined by the consumption function & investment.

• In two sector analysis we did not take into account the role of government in the determination of national income.

• Inclusion of government into this model introduces three new variables to the model (i.e.) government expenditure, taxes & transfer payments.

• In this system, the government imposes only direct taxes on the households; & it spends on buying services from the households sector & makes transfer payments, pension to the household sector, & subsidies to business sector.

a) Government expenditure

b) Taxes

c) Transfer payments

a) Government expenditure
• However in all economies today including the capital economies such as those of U.S.A, Britain, Japan the government expenses on goods & services plays an important role in determination of national income.

• It is important to note here that the government expenditure on such things as *highways, public parks, education, health services* is governed by the consideration of promoting social welfare, employment & growth in the economy & does not depend on the level of income of the economy.

• Therefore in this model of income determination, government expenditure is treated as expenditure.

b) Taxes

• Now in a three sector model, we analyse the impact of government expenditure when finances expenditure, the government levies a lump sum of tax. In this case the government expenditure equals revenue from lump sum tax its budget will be in balance.

• On the other hand if government expenditure exceeds tax revenue there will be a *deficit budget*.

• Further if tax revenue is more than its expenditure, government will have a *surplus budget*. We are here concerned with the impact of government expenditure & taxation in determination of national income

c) Transfer payments

• We have explained about the determination of national income in the three sector economy when government expenditure is financed by imposition of lump sum tax.

• We now extend our model to include transfer payments & see how they affect determination of national income.

• *Transfer payments* are payments to the people by the government for which it receives no services or goods in return from them.

• Transfer payments are made by the government to promote social welfare. Unemployment allowances, poverty relief grants, social security contributions, old age pensions are some important examples of transfer payments.

• *(Transfer payments are opposite of tax)* Where as tax reduces disposable income of people, transfer payments increases their disposable income.
• Transfer payments are financed through tax, then transfer payments become a part of government expenditure which reduces disposable income.

• Since transfer payments increases the disposable income of the people, they will increase their consumption expenditure depending on their propensity (tendency) to consume.

4. Determination of national Income FOUR - sector model (income & expenditure with government & foreign sector)

• In the four sector model of determination of national income, we add the foreign trade sector to the three sectors namely households, firms & government.

• Foreign trade (i.e.) volume of exports & imports of a country also affects the level of national income of a country.

• (For e.g.) the export of India represent the foreign demand & generates income for Indian people.

• On the other hand, imports represent the demand for foreign goods by the Indians & generate income for the people of other countries.

• It therefore follows that national income will depend on the net exports (i.e.) 

\[ X - M \]. The export & import of a country depend to a greater extent on the level of economic activity (i.e.) level of output & income of the country.

• When the growth of industrial output in India is rapid (quick), it will generate greater demand for imported materials.

• On the other hand, the higher industrial growth would also cause our exports to rise 

(there is demand for own goods in abroad)

• Increase or decrease in aggregate expenditure depends on the net export (i.e.) \( X - M \).

• If the net exports are positive there will be increase in aggregate expenditure of the country (i.e.) improves our country.

• On the other words, if the net exports are negative, there will be decrease in aggregate expenditure.

• This model of income determination on exports & imports are considered as independent income.
Macroeconomic Equilibrium

- We now put aggregate demand and supply together to consider the idea of equilibrium for the economy.
- Macroeconomic equilibrium for an economy in the short run is established when aggregate demand intersects with short-run aggregate supply. This is shown in the diagram below.

**short-run aggregate supply (SRAS)**

- At the price level $P_e$, the aggregate demand for goods and services is equal to the aggregate supply of output. The output and the general price level in the economy will tend to adjust towards this equilibrium position.

- If the price level is too high, there will be an excess supply of output. If the price level is below equilibrium, there will be excess demand in the short run. In both situations there should be a process taking the economy towards the equilibrium level of output.

- Consider for example a situation where aggregate supply is greater than current demand. This will lead to a build up in stocks (inventories) and this sends a signal to producers either to cut prices (to stimulate an increase in demand) or to reduce output so as to reduce the build up of excess stocks. Either way - there is a tendency for output to move closer to the current level of demand.

- There may be occasions when in the short run, the economy cannot meet an increase in demand. This is more likely to occur when an economy reaches full-employment of factor resources. In this situation, the aggregate supply curve in the short run becomes increasingly inelastic.

- The diagram below tracks the effect of this. We see aggregate demand rising but the economy finds it difficult to raise (expand) production. There is a small increase in real national output, but the main effect is to put upward pressure on the general price level. Shortages of resources will lead to a general rise in costs and prices.
Impact of a change in aggregate supply

- Suppose that increased efficiency and productivity together with lower input costs (e.g. of essential raw materials) causes the short run aggregate supply curve to shift outwards. (i.e. an increase in supply - assume no shift in aggregate demand).
- The diagram below shows what is likely to happen. AS shifts outwards and a new macroeconomic equilibrium will be established. The price level has fallen and real national output (in equilibrium) has increased to Y2.

- Aggregate supply would shift inwards if there is a rise in the unit costs of production in the economy. For example there might be a rise in unit wage costs perhaps caused by higher wages not compensated for by higher labour productivity.

- External economic shocks might also cause the aggregate supply curve to shift inwards. For example a sharp rise in global commodity prices. If AS shifts to the left, assuming no change in the aggregate demand curve, we expect to see a higher price level (this is known as cost-push inflation) and a lower level of real national output.
Impact of a shift in aggregate demand

- In the diagram below we see the effects on an **inward shift in aggregate demand** in the economy. This might be caused for example by a decline in business confidence (reducing planned investment demand) or a fall in United Kingdom exports following a global downturn. It might also be caused by a cut in government spending or a rise in interest rates which leads to cutbacks in consumer spending.

- The result of the inward shift of AD is a contraction along the short run aggregate supply curve and a fall in the real level of national output. This causes downward pressure on the general price level.

- If aggregate demand shifts outwards (perhaps due to increased business confidence, an economic upturn in another country, or higher levels of government spending), we expect to see both a rise in the price level and higher national output.

**Multiplier**

**Meaning**

*Multiplier is a kind of ratio, which expresses the relationship between the increase in national income & the increase in investment which induces the raise in Income*

- *A large change in income for a small change in investment is called as multiplier.*
- The total effect of an increase in investment, on income is called the **multiplier**.
  - A multiplier can be defined as “the change in investment is multiplied in order to present us with the resulting change in income”

Generally, an increase in investment in the economy, will increase the income of the people & this will be an additional investment.

**Types of multiplier**

1. Simple multiplier
2. Super multiplier
3. Static multiplier

4. Dynamic multiplier

5. Employment multiplier

6. Consumption multiplier

7. Price multiplier

8. Budget multiplier

1. Simple multiplier

A small change in income is called simple multiplier. Where the investment is simplified (very less investment is made).

2. Super multiplier

If investment curve is upward sloping then it will be super multiplier. (when there is large income)

3. Static multiplier

Static multiplier is known by different names like comparative static multiplier, simultaneous multiplier, logical multiplier, timeless multiplier & lag less multiplier. The concept of static multiplier implies that change in investment causes as change in income. It implies that the moment a rupee is spent on investment project, income increases (e.g.) government investment

4. Dynamic multiplier

It is known as period & sequence multiplier.

The concept of dynamic multiplier recognises that “change in income results to change in investment” (e.g.) business investment.

5. Employment multiplier

It tells about effects of public investment on aggregate employment. When people demand more consumer goods, it leads to demand for consumer goods
industries which expands employment.

6. Consumption multiplier

People increase their purchasing power on consumer goods then consumption increases.

7. Price multiplier

Price multiplier can be defined as “the ratio of the ultimate increase in the general price level to, the initial increase in prices on account of the increased money supply”.

8. Budget multiplier

When government spends money on nation building activities it will have a multiplier effect on the aggregate income.

**Investment multiplier**

Investment multiplier is the coefficient relating to an increment of investment to an increment of income”

(i.e.) \( K = \frac{\Delta Y}{\Delta I} \)

Where

- \( Y \) = income
- \( I \) = investment
- \( \Delta \) = change (increment or decrement)
- \( K \) = multiplier

**Assumptions of multiplier**

- The MPC is constant where there is no change (i.e.) do not decrease.
- Consumption is a function of current income (when no consumption then no income)
- There should be net increase in investment (make note that investment increases)
- An increase in investment instantaneously leads to a multiple increase in income.
- Consumer goods are available in response to effective demand for them (if no goods are available then there will be no demand, if no demand then no investment)
Other resources of production are also easily available within the economy (*make note that even other resources are readily available*).

There are no change in prices (*where investment should not be effected*).

Fiscal & monetary policy remains stable, so that they do not affect the propensity to consume.

There is a closed economy (*a closed economy implies absence of international trade*).

Importance of multiplier

1. Investment

The multiplier theory highlights the important of investment. A fall in investment leads to a decrease in income & employment.

2. Business (or) Trade cycle

When there are fluctuations in the level of income due to variations in the rate of investment, the multiplier process throws a spot light (*a lamp projecting a strong beam of light on a small area*) on the different phases of the trade cycle.

3. Savings

It helps to bring the equality between savings & investment. (*When there is savings then there will be investment*).

4. Formulate economic policy & planning

   a) To achieve full employment

   The amount of investment to be injected into the economy to remove unemployment & achieve full employment.

   b) To control trade cycle (fluctuations)

   Can control boom & depression in a trade cycle on the basis of multiplier through investment.

   c) Deficit finance

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(Deficit) Government spend funds raised by borrowing rather than spending from taxation for investment. *(i.e.) when tax amount are very less government raise funds from outside.*

d) Public investment

Public investment refers to the expenditure on public work & other work meant to increase public welfare.

Limitations of multiplier

1. Availability of consumer goods

*(The process of income generation is subjected to the availability of consumer goods).*

If, with a rise in income, *consumer goods are available in sufficient quantity*, the process of income generation would be strengthened and multiplier will have high value. If there is a shortage on consumption goods, income recipients will not be able to spend more on consumption resulting in a *decline in the MPC* & hence the multiplier.

2. Maintenance of investment

In order to achieve a high value of multiplier, it is necessary that the increments in investment are *repeated in regular time intervals*, then the national income can be raised. The multiplier effect would be impaired because a decline in investment in some other sector may result in greater decline in national income.

3. Closed economy

Working of the multiplier depends upon the fact whether economy is closed or open. A closed economy implies absence of international trade. *More imports over exports act as a leakage* on the income.

4. Availability of resources

Smooth & better working of multiplier also depends upon the availability of other factors & resources of production, *(for e.g.) raw materials, equipment etc.*

5. Constant prices

It assumes that there is *no change in prices* of commodities & raw materials, etc. If the prices go up consumption will go down & value of multiplier will be effected.

6. Full employment

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The output, income & employment will expand as a result when there are resources in the economy & full employment level is not reached. But once the full employment level has been attained output & employment will stop expanding.

7. Effect of consumption & investment

The value of the multiplier would be greater & achieved earlier if both the effects are taken into account (i.e.) consumption & investment.

8. Multiplier periods

Lapse of time between expenditures on consumption may be called the multiplier period. In other words, it is the period during which the receipt of new income includes secondary expenditure on consumption. Consumers receive additional income but do not re-spend it immediately.

Leakages of multiplier

1. Savings (Increase in savings)

   Saving is the most important leakages of multiplier process

2. Debt cancelation

   If a part of increase income (profits) is used to repay to bank, instead of spending it for future consumption.

3. Price inflation (Increase in price)

   Inflation leads to increase in investment. A rise in price of consumption good implies increased expenditure on them (for business people)

4. Net imports

   If increased income is spent on the purchase of imported goods it acts as a leakage out of the domestic income stream. Such an expenditure fails to affect the consumption of domestic goods

5. Undistributed profits (holding of idle cash balance)

   If profits accruing to companies are not distributed to the share holders in the form of dividend, it is the leakage from the income stream (all incomes are not spent by the business)

6. Taxation

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Taxation policy is also an important factor in weakening the multiplier process.

7. Purchasing of existing wealth

Another kind of leakages in the multiplier process arises when people spend the whole or part of their income on purchasing second-hand consumer durables like hares, bonds & so on then the value of multiplier reduces.

8. Public investment

If the increase in income as a result increases in investment by public may fail to induce (bring) private enterprise to spend for future investment.

Accelerator theory of investment

Meaning

The concept of multiplier is not sufficient to explain the aggregate income. Therefore, Keyens had explained in this principle.

Accelerator (or) the principle of acceleration is another important tool in economic analysis. Multiplier & Accelerator are parallel concepts. The multiplier shows the effect of change in investment on consumption & income, whereas the accelerator shows the effect of change in income & consumption of investment.

Multiplier explains how the consumption depends on investment.

Accelerator explains how the investment depends on consumption.
The acceleration is an *important tool to explain* how an increased demand for consumption goods in the economy results in demand for capital goods which brings a stimulus to the economy.

The post-Keynesian in investment theory, however, recognises the fact that the relationship between *income and investment* is a two-way relationship. *(i.e.)*

1. investment and income are interdependent *(dependent on each other)* and
2. the level of investment depends also on the level of income or output.

• The relationship between income and investment is called acceleration principle *(or)* accelerator theory of investment

  *(when income or consumption increase, investment will increase by a multiple amount. When income and consumption of the people increase, then greater the amount of the commodities will have to be produced).*

• Acceleration principle is concerned *with the size of the capital* rather than the investment.

• Accelerator theory of investment describes the relationship between the change in capital and the change in the level of output.

The relationship between capital and output is defined as capital-output ratio *(i.e.)* \( \frac{K}{Y} \)

To produce a given amount of output, it requires a certain amount of capital. The required amount of capital to produce output will be given by the following equation:
Kt = vYt

Where

Kt - stands for the stock of capital
Yt - for the level of output or income
V - for capital output ratio

A glance at certain columns will show that with a change in output, investment will increase by a multiple of it. This shows that acceleration principle is working powerful in the economy.

If the accelerator is the only force, then we shall have too much of Instability in the economy. In real life we find that there are limits to instability both in the upward as well as in the downward direction. So that fluctuations in economic activity or what are called business cycles have a peak as well as a bottom.

Assumptions of accelerator theory of investment

The successful operation of the accelerator depends upon the following assumptions & conditions

• All firms have production function
  • Factors of production are homogeneous (same)
  • Factor market is competitive and prices are given
  • Firms produce with least- cost combination of inputs
  • There is no excess production capacity
  • Firms calculation about the future demand is fairly accurate
  • There is no financial constraints and funds are easily available
  • The nature of demand for consumption goods should be permanent
  • Accelerator depends on smooth supply of money & credit

It requires various resources & factors of production to meet demand

• The working of accelerator is possible only when, the ratio between the output of consumer goods & the capital equipment remains constant.
• When there is no excess capacity of capital goods industries the accelerator will not operate.

• When there is unused or excess capacity in the consumer goods industries, the acceleration principle will not operate.

• Accelerator will operate smoothly in the period of rising demand

• During the period of declining demand the working of accelerator is limited.

Advantages of accelerator

1. It helps us to understand the process of income generation & its utilisation

2. It explains how small increase in one sector can be magnified & spread throughout the economy

3. It helps us to understand how capital goods industries are subject to more violent fluctuations than the consumer goods industries.

Limitations of accelerator principle

1. Accelerator cannot work properly in the case of fall in demand beyond certain level (It works well in the period of rising demand, but during the period of declining demand the working of accelerator is limited)

2. Fluidity (The operation of the accelerator depends upon the fluidity and adjustability of the industrial system)

3. Nature of demand (The nature of demand for consumption goods should be such that it is permanent. A temporary increase in demand will not lead to additional investment & no entrepreneur will take up expensive investment to cater to the short-lived demand. The accelerator can work only if the demand is permanent)

4. Availability of resources (Whenever there is increased demand, there must be enough factors of production which could be easily pressed into services to meet the demand. So availability of resources is another condition for smooth operation of the accelerator)

5. Availability of credit (Supply of money & credit is an essential requirement for the smooth working of the accelerator. A shortage of money & credit would raise the rate of interest & thereby the cost of investment, therefore expected investments cannot take place).
6. **Constant capital output ratio** (It is further assumed in the working of accelerator principle the capital output ratio remains constant. i.e. the ratio between the output of consumer goods & the capital required for their production. In real world this ratio will not remain constant)

7. **Existence of excess capacity in investment goods industries** (If there is not excess capacity in investment goods industries, then the demand for capital goods cannot be met and the working of the accelerator would be impaired / damaged)

8. **Non-existence of excess capacity in consumer goods industries** (If there is unused or excess capacity in consumer goods industries, the accelerator principle will not operate. An increase in demand for consumer goods would be met by utilising the existence of excess capacity).

9. **Prohibitory changes in the relative factor prices.**

10. **Uncertainty**

11. **Time lag in acquiring capital**

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**Fiscal policy**

- Fiscal policy refers to policy where the government finances to achieve the macro economic goals

- A policy under which government uses its expenditure & revenue programs to produce attractive effects & avoid unwanted effects on the national income, production & employment

- The process of shaping taxation & expenditure to contribute the maintenance of growing, high employment economy

- Fiscal policy is the government programme of making changes in the pattern & level of its expenditure, taxation & borrowing in order to achieve economic growth, employment, income equality & stabilization of the economy on a growth part

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**Objectives of fiscal policy**

- To mobilize resources for economic growth, especially for the public sector

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To promote economic growth in the private sector by providing incentives to save & invest
To restrain inflationary forces in the economy in order to ensure price stability
To ensure equitable distribution of income & wealth

**Fiscal policy & macro economic goals**

1. **Fiscal policy for economic growth**
   a) *To promote savings*
   b) *Tax measures generally used for the purpose of resource mobilization*
   c) *Economic growth through borrowings includes internal & external borrowings*

2. **Fiscal policy for stabilization**
   a) *Changes in taxation & government spending*
   b) *Increasing in spending on goods & services in the private sector*
   c) *Controlling business cycles*

3. **Fiscal policy for economic equality**
   a) Re-allocating capital expenditure
   b) Make provision for self employment
   c) Imposing of wealth & property tax

4. **Fiscal policy for external balances**
   a) *Reducing the gap between external payment & external earnings*

5. **Fiscal policy for employment**

**Limitations of fiscal policy**

- *Formulating appropriate fiscal policy requires reliable forecasting of the variables like GNP, consumption, investment, technology changes*
• Changes in policy of government spending
• Decision & implementation lags
• Working in underdeveloped countries is limited by low levels of income, small proportion of population, inefficiency in administration,
• Excessive borrowings, deficit finance

Kinds of fiscal policy

1. Automatic stabilization fiscal policy
2. Compensatory fiscal policy
3. Discretionary fiscal policy