Study Note - 3

NATIONAL INCOME

This Study Note includes

3.1 CONCEPT OF NATIONAL INCOME

- The value of aggregate output produced by different sectors during a given time periods.
- In real terms — it is the flow of goods and services produced in an economy in a particular period - a year.

3.1.1 Concepts Associated with National Income

Gross National Product (GNP)	• the market value of all final goods and services; • These are produced by domestically owned factors of production in a country in that year.
Net National Product (NNP)	• NNP at market price = GNP minus depreciation of capital stock. • The productive power of physical capital stock diminishes gradually because of the wear and tear that it undergoes in the process of production.
NNP at factor cost or National Income	• NNP at factor cost = NNP at market price minus Indirect Business Tax minus Non tax liabilities minus Business Transfer Payments plus Subsidy from Government = National Income.
Gross Domestic Product (GDP)	• the sum total of values of all goods and services produced within the geographical boundary of the country; • These are without adding the factor income received from abroad.

Distinction between Gross National Product and Gross Domestic Product –

Gross National Product (GNP) is different from Gross Domestic Product (GDP) in following respects:

(a) GNP refers to the total market value of all the final goods and services produced in a country during a given year, plus net factor income from abroad.

But GDP refers to the total market value of all the goods and services produced in the given year within the domestic territory of the country.

(b) GNP includes all income earned by the country in abroad (including foreign investments). But GDP does not include the income earned by the country from abroad.

3.2 MEASUREMENT OF NATIONAL INCOME

There are three alternative ways of estimating National Income of a country. Broadly it may be viewed from income side, output side and expenditure side. Let us discuss these methods:

Product method	• It implies by adding the values of output produced and services rendered by different sectors; • The output method is unscientific; • Only those goods and services are counted which are paid for, that is marketed; • The value added method can be used; • Here only the value added by each firm in the production process is included in the output figure, • The value added output of all sectors makes up GNP at factor cost.
Income method	• All income from employment and ownership of assets before taxation received from productive activities to be counted. • It is the factor income method. • The undistributed profits of the private sector are added. • The trading surplus of the public sector corporations is also added. • These exclude some items which do not arise from productive activities, such as — sickness benefits, interest on national debt etc.
Expenditure Method	• It depends on by measuring the total domestic expenditure; • It comprises two elements; • Consumption expenditure of the household sector on goods and services, consumption outlays of business sector and public authorities. • investment expenditure is used for making a fixed capital like building, machinery etc.

Usefulness of National Income estimates

1. It shows how the production is changing, to output and the effects of government policies and programmes.
2. In analyzing the relation between input of one industry and the output of the other.
3. It reveals the distribution of income among economic units.
4. Changes of tastes and fashions are revealed which help businessmen in deciding what to produce or for whom to produce.
5. The national income quantum indicates the ability of a country to pay its share for international purpose e.g. membership of IMF or World Bank.

Difficulties in Estimating National Income

Conceptual Difficulties	• No practicable methods exists for inclusion of some items in National Income (NI), such as — services for which no remuneration is paid, goods that are marketed sold at a price but are used for self-consumption etc. • It is not always possible to make a clear distinction between primary, intermediate and final goods. • The price that should be chosen to determine the money value of National product is a difficult question. • Debate regarding inclusion of income of foreign companies in National Income estimates since, a large part of such income is remitted out of the country.

Statistical Difficulties	• Changes in the price level involve the use of Index Numbers which have their inherent difficulties. • Official statistics are not always accurate as it is based on guess work and sample survey. • Methods of computing NI are not the same in all countries. • The statistical data are often not available.

3.3 NATIONAL INCOME AND ECONOMIC WELFARE

- Many things (pollution cost, disseminates of modern urban living, leisure etc.) that contribute to human welfare are not included in the GNP (Gross National Product).
- GNP may not adequately reflect changes in the quality of products.
- GNP does not measure the quality of life.
- Increase in the general price level would bring a fall in the economic welfare.
- If the net National Product has increased on account of more production of capital goods, it will not increase welfare.
- Welfare also depends upon the distribution of National Income.
- The unequal distribution of National Income decrease economic welfare.

3.4 CONCEPT OF CONSUMPTION SAVING AND INVESTMENT

3.4.1 Consumption

Keynes held that current consumption depends upon current gross income minus tax liabilities. He says "men are disposed as a rule and on the average, to increase their consumption as their income increases by not by as much as the increase in their income." Symbolically 1> C > 0. This is the psychological law of consumption.

- **Consumption Function**

  The propensity to consume shows income consumption relationship C = F(Y). here C is consumption, a dependent variable and Y is an independent variable. It should be noted that propensity to consume does not mean desire to consume but effective consumption. C is an increasing function of income as Y and C move in the same direction.

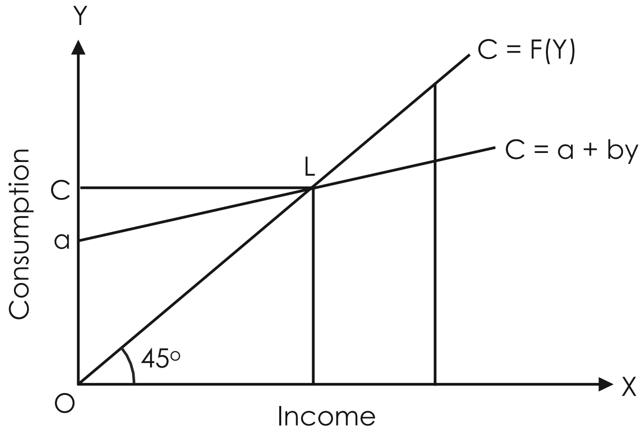

Fig. 3.1

OX measures real income and OY consumption. The C curve represents the propensity to consume. It slopes upward to the right showing consumption rising along with income. At point a while income is zero consumption is positive, and upto CL on the consumption curve, we find that consumption exceeds income.

- **Average Propensity to consume**

  It implies the ratio of total consumption to total income.

  APC = c / y

- **Marginal propensity to consume**

  This implies the effect of additional income on consumption. It is the ratio of additional consumption to additional income : MPC = dc/dy, Or MPC < 1. That is to say MPC is less than unity. The propensity to consume is a fairly stable function of income.

  Determinants of Consumption Function

  Consumption function depends on subjective and objective factors. Among objective factors we may mention a few:

  (a) **Tax Policy –** A higher rate of tax will reduce personal income and to that extent consumption as well.

  (b) **The Rate of Interest –** A higher rate of interest may induce more savings and so less consumption. However a higher interest income may raise consumption by raising total income.

  (c) **Holding of Assets –** If people want to hold more assets, like property, jewellery etc. they will curtail consumption.

  (d) **Windfall Profits or Loss –** Consumption level of those classes of people changes who gain windfall profit or incur heavy loss.

  Among subjective factors we may mention some motives that lead individuals to refrain from spending. These are motive of precaution, motive of foresight, motive of improvement, motive of avarice etc.

3.4.2 Saving

Definition

- Excess of income over expenditure on consumption.
- Symbolically S = Y – C.
- The unconsumed part of national income of all members of the community represents, National Savings.
- Total domestic savings = households' savings + business sector's savings + government's savings.

Determinants

(i) **Income**:

- Savings is functionally related to income S = f(Y).
- The saving income ratio tends to rise with increase in income.
- The savings function is a stable function of income in the short run.
- Savings as such is not a stable function of income.
- Marginal propensity to save (ds/dy) is always greater than zero but less than unity.
- People save part of additional income but not the entire income.
- Symbolically, 1 > MPS > 0 or 1 > ds/dy > 0.

The saving function is explained by three income concepts in macro economics.

(a) Absolute Income – current savings depend on current disposable income i.e. income minus taxes paid.

(b) Relative Income – savings of an individual depends upon his percentile position in the total income distribution.

(c) Permanent Income – it is current income plus the expected income received over a period of time. Actual or measure income is the sum of permanent and transitory income $Y_m = Y_p + Y_t$. Transitory income implies unanticipated addition or subtractions in income.

(ii) Distribution of income:

- Inequality of income distribution helps the process of savings.
- "Demonstration effect", that is man's desire to imitate the superior consumption standard of neighbours or relatives.
- This induces a man to buy expensive goods and so saving decline.

(iii) Sound financial instruments and the rate of interest:

- A higher rate of interest motivates us to save more.
- Existence of diverse type of financial instruments gives people incentive to save more.

(iv) Subjective or psychological factors:

- A man's attitude towards savings depends on his farsightedness, his desire to bequeath a fortune, to enjoy a better living in future or to possess some physical asset.
- A man saves or insures as a precaution against future uncertainty and insecurity.

3.4.3 Investment

Definition

Investment has dual aspect. It implies the production of new capital goods like plants and equipments. Secondly, a change in inventories or stocks of capital of a firm between two periods.

Determinants:

- There are two determinants — (a) the marginal efficiency of capital (MEC) and (b) the rate of interest.
- MEC implies the prospective yield from the capital asset and the supply price of this asset.
- Symbolically C = Q/P. Where Q is the prospective yield from capital asset and P is the supply of this asset.
- In considering a particular investment project the investor must have some idea of future returns, that is yields from the real asset in its life span.
- To find the present value of all expected future returns we have to discount all future returns.
- Generally there exists a negative relation between interest rate and investment expenditure.
- A fall in the rate of interest may induce an increase in investment expenditure whereas a higher rate, investment is likely to be less.
- At a higher interest rate, a firm instead of using funds for capital equipments may invest in financial assets.
- Thus the level of investment is a negative function of the rate of return.
- Risk, uncertainty and instability tend to discourage business to undertake investment projects.
- A firm may expand investment outlay for innovation viz. introducing a new good or a new technique.

- Innovations either by increasing sale or by reducing cost may help the innovating firm a larger return on its investment.
- Investment decisions are influenced by the cost of capital goods.
- A firm normally calculates the initial cost of acquisition, and the subsequent cost of maintenance and operation of capital goods.

Marginal Productivity of Capital (MPC):

- The additional physical product obtained due to the employment of one extra unit of capital (do/dc) per unit of time.
- The MPC is net current product of the capital good minus the cost of capital good.
- In contrast, MEC denotes the series of increments in output anticipated over the life of the capital equipment.

Investment Multiplier:

- The Keynesian multiplier shows how many times the total income increases by a given amount of initial investment.
- If dI represents increase in investment, dY represents increase in income and M the multiplier, then M = dY/dI.
- The multiplier is the number by which the initial investment is to be multiplied to get the resulting change in income.
- With the help of the marginal propensity to consume the relation between a given dose of investment and the resulting change in income can be shown.

Acceleration Principle:

- Change in output of consumption goods cause investment for production of capital goods used in producing those consumption goods.
- The ratio between the induced investment and the net change in consumption outlay is known as acceleration coefficient.
- a = dI/dC, where dI is net change in investment and dC for net change in consumption expenditure and for accelerator.
- The value of accelerator depends on capital output ratio, the durability of capital goods.
- The acceleration effect will be high if capital equipments have more durability and capital output ratio is high.

3.5 ECONOMIC GROWTH AND FLUCTUATION

3.5.1 Economic Fluctuation

- The business world in capitalistic economy is said to experience ups and downs in its economic activities.
- The fluctuations take the form of Wave are known as Trade Cycle or Business Cycle, in economics.
- Every trade cycle pass through four phases, such as —

Prosperity	• The main spring of business prosperity is profit. • In a capitalist economy as profits inflate, industrialists and businessmen get necessary incentive to produce more and invest more. • More investment leads to more employment and so more income more effective demand.

Recession	• Excessive expansion leads to diseconomies of large scale production, rising cost, higher wages and much shortages. • When demand for bank credit being high and rising, interest rates tend to move up. • These diminish profit to a lower level.
Depression	• Income, employment and output decline sharply by the recessionary trends. • Investments fall and enterprise is discouraged. • Pessimism leads to depression and deflation.
Recovery	• Depression does not continue for indefinite period. • It is an improving stage of trade. • Weaker units are liquidated, old debts are repaid, and enterprises are reorganized. • Unemployment rate gradually decreases. • Income is generated.

Anti Cyclical Policy

- Government of a country may take some measures to control cyclical fluctuations.
- Through an expansionary or contractionary credit policy the central bank can control business cycle.
- In a period of depression government should spend more and tax less.
- The objective should be the increasing effective demand that is buying power of people.
- In prosperity phase government should spend less and tax more.
- The socialists think that cyclical fluctuations are the outcome of a capitalistic economy.
- Here profit motive is the main driving force.
- The problem can be uprooted if the system moves from capitalism to socialism.

3.5.2 Economic Growth

Definition

- The expansion in the capacity of an economy to produce goods and services over a period of time.
- An outward shift of production possibilities frontier of an economy.
- It shows the different maximum possible combinations of quantities of two goods if it employs all its available resources full and given the existing state of technology.

Measurement

- Different methods have been suggested for measuring economic growth.
- One measure is a country's overall capacity to produce goods and services.
- The money value of GNP can change because of change in price.
- It is necessary to measure economic growth rate by using constant Rupees, or real income.
- An increase in real GNP if followed by a higher rate of growth of population may lead to

deterioration or no change in the standard of living of the population.

- Real GNP per capital = Real GNP/ Population
- If the numerator (GNP) grows faster than the denominator (Population), real GNP per capita will grow and quality of life will improve.

Components of Economic Growth

Size of population (P)	• Population helps economic growth by enlarging demand. • It paves the way for producing large quantity of output
Fraction of population that constitute labour force L/P (L = PX)	• If this proportion (L/P) is high more will be productive capacity of an economy and vice versa.
The total number of labour hours actually worked by the labour force L x H = P x L/P x H	• The length of the average work hour of the labour force generally seems to have a direct impact on the rate of economic growth.
Output per labour i.e. labour productivity Q/(L x H)	• Output per labour hour has a direct bearing on the level of GNP. • The more productive labour, the more will be the total output of an industry.

Relation between Stability and Growth

- Financial stability is essential for economic growth.
- A stable economy can help the formation of capital by stimulating the inflow of foreign capital.
- Stability of currency is necessary to stimulate a rapid increase in productivity.
- If prices are not stable, firms can make 'easy' profit and repay their old debts in depreciated currency.
- The existence of well-organised financial institutions is likely to quicken economic growth by mobilizing savings for investment purposes.

EXERCISE

1. Distinguish between –
   (a) GDP & GNP
   (b) GDP & NDP
   (c) NNP & GNP
   (d) GDPMP & NDPFC
2. Explain the 'production method' of measuring national income. State the difficulties in this method.
3. Explain the income and expenditure method of calculating national income, along with the difficulties associated.
4. Point out the difficulties in the measurement of national income.
5. What is the meaning of 'double counting' in national income accounting and what does it lead to?
6. Why are the services of house wives not included in national income?
7. Why are the following not included in national income :
   (a) Sale of an old car;
   (b) Winning of a lottery;
   (c) Income of a smuggler.
8. Give an example of transfer payment.
9. What is meant by Consumption functions? What is the distinction between Average propensity to

consume and Marginal Propensity to consume? Discuss the factors determining Marginal Propensity to consume.

10. What is meant by Economic Growth? What are the components of economic growth?
11. Discuss whether savings is a virtue or a vice for –

    (a) an individual

    (b) the society