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BASIC ISSUES IN ECONOMIC DEVELOPMENT

Subject Matter of the chapter

Some basic concepts related to economic development will be considered in this chapter. What is meant by economic development, how it differs from economic growth, how we can measure the level of economic development, etc. will be discussed. We shall also consider the obstacles faced by an economy in its journey towards economic development. Different indices have been developed in order to measure how much the fruits of economic development of a country are being enjoyed by its people or how much they are deprived from the benefits of development. Some of such indices are human development index, gender-related development index, human poverty index, etc. We shall discuss some of these indices also in the present chapter. The concept of national income is so closely related with economic development. Hence we shall discuss different concepts related to national income. We shall also describe how national income of an economy can be measured. We shall also examine the relation between the level of economic development and the inequality in the distribution of income. Kuznets' hypothesis will also be briefly described in this context.

1.1. Meaning of Economic Development : Key Elements

To follow Gerald M. Meier, economic development is a process whereby real per capita income of a country increases over a long period of time subject to the stipulations that the number below an absolute poverty line does not increase and that the distribution of income does not become more unequal. Thus, the definition of economic development focuses on the increase in income as the objective of development.

There are **three key elements** in this definition. **First**, it regards economic development as a *process* whereby the per capita income rises. The word 'process' implies the operation and movement of certain forces in an interrelated manner. The end result of this process is the growth of national income. These forces act and interact on one another, they themselves change over long period and generate changes in other variables.

Secondly, the definition of economic development stresses on the *real* per capita income. This is so because economic development should imply more physical goods and services produced in the economy. If price level rises, money national income will rise even if total physical volume of goods and services does not rise.

Money national income may even rise if total output falls but price level rises at a greater rate than the rate of decline in output. These cases cannot be treated as 'development'. Economic development should mean a rise in 'real' income. Hence we take 'real' income in our definition to mean that there should be an increase in physical goods and services.

Again, increase in national output is not sufficient. If population rises at the same rate with real output, per capita real income remains constant. Or, if population rises at a higher rate than the real national output, then per capita real income will fall, rather than rise. Then per capita availability of output will fall. So, physical or real output should rise at a greater rate than population. Only then per capita real income rises and economic development is said to occur.

Thirdly, per capita real income should rise over a 'long period' of time. But how long? There is no particular length of this 'long' period. Such a period may extend over two to three decades or even more. Thus, there is no particular measure of this long period. We may say that the length of the time period should be such that within this time period, all the factors related to economic development should change. These factors should act and react on one another so as to produce an end result of a rise in per capita real income. Also implied in this condition is the idea that the increase in per capita real income should be sustained; it should be cumulative.

Our definition of economic development further lays down **two conditions or stipulations**. **First**, the number of absolutely poor should not increase. **Secondly**, the inequality in income distribution should not worsen.

These two stipulations have become necessary in view of the recent experiences of most of the developing countries. In these countries, a sustained rise in per capita income, though small, has been accompanied by a sharp increase in the number of poor and a more unequal distribution of income. Such type of development is not desirable at all. So, increase in per capita real income should accompany decrease in and ultimate elimination of absolute poverty. Side by side, the distribution of income should be most equitable. Hence, two stipulations are included in the definition of economic development.

We should mention that these two qualifications are the minimum stipulations related to the attainment of economic development. We may add some other stipulations as well. For example, in the definition of economic development we may impose the condition that there should be full employment. Or we may stipulate that economic development should imply a situation of increased supply of public services like medical and educational facilities, drinking water, housing, etc. This will improve the quality of life of the ordinary people. However, the sustained rise in per capita real income is the basic objective of economic development.

1.2. Distinction between Growth and Development

Strictly speaking, 'growth' and 'development' signify different contents. According to Kindleberger, economic growth means more output, while economic development implies both more output and changes in the technical and institutional arrangements by which it is produced and distributed.

However, Lewis favours to use the words 'growth' and 'development' synonymously. For instance, Arthur Lewis in his 'The Theory of Economic Growth' writes, most often we shall refer only to 'growth', but occasionally for the sake of 'variety' to 'progress' or to 'development'.

But Friedman considers the two terms as different. He defines 'growth' as an expansion of the system in one or more dimensions without a change in its structure. But 'development', according to him, is an innovative process leading to the structural transformation of social systems.

Thus, development is a wider term than growth. Economic growth refers to a quantitative, sustained increase in per capita output accompanied by expansion in labour force, consumption, capital and volume of trade. Development includes not only these quantitative changes but also the qualitative changes in economic wants, incentives and institutions. Development embraces both growth and decline. An economy can grow but it may not develop because poverty, unemployment and inequalities may also continue to increase with growth due to the absence of suitable structural and institutional changes.

Thus we can distinguish countries which may be growing but are not developing. An example of this type is the study by Clower of Liberian economy published under the meaningful title of "Growth without Development." While growth can take place without development, the opposite is not generally true for there can be no development without growth.

To conclude, growth implies increase in real income. But development not only includes this income increase indicator of growth, but also other indicators, and objectives, such as distribution of income, housing, clothing, education, health facilities, etc. Growth is increase in output, and development is growth plus change. This change may include any aspect affecting the general welfare of a country.

of a country show the economy. Hence, the basic needs approach should be regarded as complementary to the income-index of development.

1.3.4. Human Development Index (HDI) :

One of the important social indicators of economic development is the Human Development Index (HDI) introduced by the United Nations Development Programme (UNDP) in its first *Human Development Report* published in 1990. The index has been prepared under the able stewardship of Mahbub-ul Haq. In recent years, economists like Hagen, Adelman, Harbison, Morris, Hicks, Streeten, Burki and others have been in search for an alternative to per capita income as an index of economic development. Morris D. Morris developed the concept of a Physical Quality of Life Index (PQLI) while economists like Streeten, Hicks and Burki advocated the concept of a basic needs approach. These attempts and writings by different economists on similar lines have paved the way for the emergence of the Human Development Index (HDI).

This index defines human development as the process of enlarging people's choices. The most critical choices are to lead a long and healthy life, to be educated and to enjoy a decent standard of living. These three factors may be measured by three respective indicators, namely, longevity, educational attainment and standard of living. The HDI is a composite index of these three indicators. Here, longevity is measured by life expectancy at birth ; educational attainment is measured by a combination of adult literacy (two thirds weight) and combined primary, secondary and tertiary enrolment (one third weight) ratios while standard of living is measured by real GDP (Gross Domestic Product) per capita (in terms of dollar as per purchasing power parity, in short, PPP \$). A simple average of these three indices gives us the desired Human Development Index (HDI).

1.4. Method of Construction of Human Development Index

In order to construct the HDI, we have to calculate its component indices. For the construction of component indices of the HDI, fixed minimum and maximum values have been established for each of these indicators. These values are as follows :

Indicators	Minimum value	Maximum value
Life expectancy at birth	25 years	85 years
Adult literacy	0%	100%
Combined gross enrolment ratio	0%	100%
Real GDP per capita (PPP \$)	\$ 100	\$ 40,000

For any component of the HDI, individual indices can be computed according to the general formula :

$$\text{Component Index} = \frac{\text{Actual value} - \text{minimum value}}{\text{Maximum value} - \text{minimum value}}$$

For example, if the life expectancy at birth in a country is 55 years, the life expectancy index for this country is :

$$\frac{55 - 25}{85 - 25} = \frac{30}{60} = 0.50.$$

This index indicates how much of the maximum possible success in the case of the related variable has been attained by the relevant country.

The construction of the income index is a little more complex. The world average income of \$ 5,835 (PPP\$) in 1994 is taken as the threshold level. Any income above this level is discounted using Atkinson's formula. The argument is that utility of income above a certain threshold level will be diminishing. Applying Atkinson's formula, the discounted value of the maximum income of \$ 40,000 (PPP \$) stands at \$ 6,154 (PPP \$).

To calculate income index, we shall take this discounted value of income for the maximum value of income.

We give below an illustration of the construction of HDI. We take the examples of two countries : Greece, an industrial country and Gabon, a developing economy.

Country	Life expectancy (years)	Adult literacy rate (%)	Combined enrolment rate (%)	Real GDP per capita (PPP \$)
Greece	77.8	96.7	82	11,265
Gabon	54.1	62.6	60	3,641

$$\text{Gabon} = \frac{60 - 0}{100 - 0} = \frac{60}{100} = 0.600$$

Educational enrolment index :

$$\text{Greece} = (2 \times 0.967 + 1 \times 0.820) \div 3 = 2.754 \div 3 = 0.918$$

$$\text{Gabon} = (2 \times 0.625 + 1 \times 0.600) \div 3 = 1.850 \div 3 = 0.617$$

Adjusted real GDP per capita (PPP \$) index :

Greece's real GDP per capita is \$ 11,265 (PPP\$). It is above the threshold level. The adjusted real GDP per capita for Greece would be \$ 5,982 (PPP \$) as per Atkinson's formula. Gabon's GDP per capita is less than the threshold level. So, it needs no adjustment.

$$\text{Greece} = \frac{5,982 - 100}{6,154 - 100} = \frac{5,882}{6,054} = 0.972$$

$$\text{Gabon} = \frac{3,641 - 100}{6,154 - 100} = \frac{3,541}{6,054} = 0.584$$

The HDI is a simple average of the life expectancy index, educational attainment index and adjusted real GDP per capita (PPP \$) index. So, it is derived simply by dividing the sum of these three indices by 3.

Country	Life expectancy index	Educational attainment index	Adjusted real GDP per capita (PPP \$) index	HDI
Greece	0.880	0.918	0.972	0.923
Gabon	0.485	0.617	0.584	0.562

Source : UNDP, *Human Development Report, 1997*, p. 122.

The HDI value for any country indicates the progress it has made towards the maximum possible value of 1 and how far it has to go to attain certain defined goals : an average life span of 85 years, access to education for all and a decent standard of living. Countries with an HDI value below 0.5 are considered to have a low level of human development, those having HDI value between 0.5 to 0.8 a medium level, and those above 0.8 a high level of human development.

The Human Development Report, 2016 presented the HDI values and rankings for 188 developed and developing countries. This ranking has been prepared on the basis of relevant data for the year 2015.

Out of them, the report places 51 countries in the very high human development category. In this category, there are developed countries like Norway, Canada, USA, Japan, France, Hungary, Germany, Denmark and UK. In the high human development category, there are 54 countries. In this category, there are countries like Mexico, Malaysia, Brazil, China, etc. In the medium human development category, there are 42 countries. Notable among them are Paraguay, Bangladesh, Pakistan, India, etc. In the low human development category, there are 41 countries. In this category, there are countries like Nigeria, Afghanistan, Sudan, Uganda, Ethiopia, etc. India with an HDI value of 0.624 makes a lowly 131 in terms of HDI. China and even Sri Lanka are well ahead of India in terms of human development. China has an HDI value of 0.738 and it is ranked 90 while Sri Lanka with an HDI value of 0.773 ranks 66.

The HDI table shows that countries with similar per capita income may have different HDI values, and countries with different per capita incomes may have similar HDI values. Thus, the HDI ranking of countries may differ significantly from their ranking by per capita income. If a country's GDP rank is higher than its HDI rank, it implies that the country has further *potential* for improving the standard of living of its people. But it has been less successful in converting its economic prosperity into better lives for its people. On the other hand, if a country's HDI rank is higher than its GDP rank, it implies that the country has effectively *made use* of its income to improve the lives of its people.

Table 1.1**HDI Value and Ranking of Some Selected Countries, 2015**

Country	HDI value	HDI Rank	Real GDP per capita (PPP \$), 2011	Real GDP per capita (PPP \$) Rank	Real GDP per capita Rank minus HDI Rank *
Very High Human Development :					
Norway	0.949	1	67,614	6	5
Canada	0.920	10	42,582	22	12
USA	0.920	10	43,245	11	1
UK	0.909	16	37,931	26	10
Japan	0.903	17	37,268	27	17
High Human Development :					
Malaysia	0.789	59	24,620	72	-13
Sri Lanka	0.766	73	10,789	94	21
Mexico	0.762	77	16,389	68	-9
Brazil	0.754	79	14,145	78	-1
China	0.738	90	13,345	83	-7
Medium Human Development :					
Paraguay	0.693	110	8,182	113	3
India	0.624	131	5,663	124	-4
Bangladesh	0.579	139	3,341	147	8
Pakistan	0.550	147	5,031	137	-10

The HDI is an alternative measure of development which supplements rather than supplants the GNP measure of economic development. The index stresses on human development which puts people at the centre stage. Mere rise in per capita income does not ensure human development which means a process of enlarging people's choice. There are many human choices that extend far beyond per capita income or any other measure of economic well-being. Knowledge, health, a clean physical environment, political freedom and simple pleasures of life are not dependent on income. It is the use of wealth and not wealth itself that is decisive of human development. Mahbub-ul Haq rightly warns, "Unless societies recognise that their real wealth is their people, an excessive obsession with creating material wealth can obscure the goal of enriching human life." The HDI is the right step against that misconception of economic development.

However, the concept of HDI has also **some limitations**. **First**, the three indicators used to construct HDI are not the only indicators of human development. There may be other indicators, such as, infant mortality, level of nutrition, etc. **Secondly**, the HDI gives equal weight to each of its component indices. But these indices may not be equally important to determine human development.

In spite of these limitations, it must be admitted that the HDI is more plausible than the per capita income as an index of economic development. It stresses on human development, not merely on economic development or economic well-being. The HDI focuses the attention on the ultimate objective of development, not just the means of development.

1.5. Definition of an Underdeveloped Economy

An underdeveloped economy may be described as one in which the per capita income is low, and where it is

1.15. Definition of National Income

The money value of all final goods and services produced in a year by all productive units of an economy is known as national income of that economy. It is a flow and not a stock or fund. Marshall has given a definition of national income. According to him, the labour and capital of a country acting on its natural resources produce annually a certain net aggregate of commodities, material and immaterial, including services of all kinds. The money value of this net aggregate is national income. Prof. Hicks has given a definition of national income. According to him, the national income consists of a collection of goods and services reduced to a common basis by being measured in terms of money.

National income can be looked at from three standpoints. *First*, national income can be regarded as the sumtotal of goods and services produced in the economy during a given year. The money value of these goods and services represents the national product or national income of the country. *Secondly*, national income can be regarded as the sumtotal of incomes earned by all the earning units of the economy. There are four factors of production, namely, land, labour, capital and organisation. Their respective incomes earned in the production process are : rent, wage, interest and profit. Hence, national income is the sum of wage, rent, interest and profit earned during a given period of time.

Thirdly, national income can also be regarded as the sumtotal of expenditure on national product. This is also known as national expenditure. National expenditure is the sum of total consumption expenditure and total investment expenditure. The income earned by the individuals is partly spent to purchase consumer goods. This part is known as consumption expenditure. The other part which is not spent on consumer goods is used in the production process. This part is known as investment expenditure. Thus, the sum of total consumption expenditure and total investment expenditure gives us the national income earned during a period of time.

It can be seen that there is no distinction among national income, national product and national expenditure. All the three concepts refer to the same thing

Thus, a part of the output of wheat is included in the output of flour. Now, if we take the value of output of wheat and also the value of output of flour, then that part of the output of wheat which goes into the production of flour is added twice in the national aggregate. Such multiple counting will have to be avoided in order to arrive at the *GNP* total.

To avoid this type of multiple counting there are two methods : one is the **final product method** and the other is the **value added method**. In the final product method, all products are divided into two groups according to their use. A product may have two uses : intermediate use and final use. If a product produced in a year goes into the production of another product during the same year and is used up, it is called intermediate use. All other uses are called final use. Thus, if a commodity is consumed or if it is stored or if it is exported, it represents a final use. Multiple counting can be avoided if we take the values of commodities which go into final uses only.

In the value added method, we take the value added at each stage of production and add together the values added in the year by all productive units. The value added by any productive unit is the difference between the total value of output produced by the productive unit during a year and the value of raw materials that have been drawn from the production of the current year and used up in the same year. The value of raw materials drawn from past stock is not deducted. Similarly, the value of raw materials drawn from current year's production but not used up is also not deducted to get the value added.

Thus, the sumtotal of values of products going to final uses or the sumtotal of all values added gives the *GNP* of the year. The size of the *GNP* indicates the total value generated in the economy during a year. If we deduct the depreciation of capital (or the cost of raw materials drawn from past stocks) from the *GNP* total, we get the net national product (*NNP*) total. The *NNP* total represents the contribution of the productive activities of the country during a year.

While calculating the money values of different products we can take the market prices for valuation. We then get gross national product at market prices. Since indirect taxes are included and subsidies are excluded in market prices, the gross national product at market prices includes indirect taxes and excludes subsidies. If we deduct indirect taxes collected by the government and add subsidies given by the government to gross national product at market prices we get another measure of gross national product. It is known as **gross national product at factor cost**. In the same way, net national product can also be evaluated either at market prices or at factor costs. By national income, we mean net national product at factor cost (*NNP* at factor cost \equiv national income or *NI*)

1.16.2. Gross National Income and Net National Income

We know that gross national income of a country during a year is the sumtotal of gross incomes accruing to the earning units of the country during the year through market transactions. In the census of income method, the gross national income is obtained by taking the sumtotal of incomes earned by all earning units. However, only those incomes are included which accrue due to the participation in the production process. Participation in the production process takes place through the supply of factors of production. Thus, gross national income is the sum of all factor incomes, such as, rent, wages, interest and profit. Thus, gross national

income = rent + wages + interest + profit. If depreciation of capital goods is subtracted from gross national income we get net national income. Thus, net national income is equal to gross national income *minus* depreciation.

1.16.3. Identity between Net National Product (NNP) and Net National Income (NNI)

The net national product of an economy during a year is equal to the difference between the value added (or the value of products going to final uses) and the depreciation cost of capital goods. On the other hand, net national income is the sum of all incomes earned in the production process less depreciation cost of capital goods. It can be seen that net national product of a country in a year is identically equal to net national income of the country during the same year. This identity between *NNP* and *NNI* can be shown as follows: Any production has always two sides — the product side and the income side. When we consider the product side we get the creation of value in the production process. On the other hand, if we consider the income side we get the distribution of created value among the participants in a production process. Since the total value created is distributed among the participants, both of them represent the same thing looked at from two different angles. The *NNP* and the *NNI* represent the two sides of the same coin: the contribution of productive activity of the economy during a year.

The identity between the *NNP* and *NNI* can also be shown in an alternative way. We know that total value of output = cost of production + profit. Now, cost of production = cost of raw materials + depreciation cost + factor cost for payment of rent, wages and interest. Raw materials used in the production process may come from two sources: current period's production and accumulated stocks. Accordingly, cost of raw materials = cost of raw materials drawn from current production + cost of raw materials drawn from past stocks.

Therefore, value of output = cost of raw materials drawn from current production + cost of raw materials drawn from past stock + depreciation cost + factor cost for payment of rent, wages and interest + profit.

Therefore, value of output – cost of raw materials drawn from current production = cost of raw materials drawn from past stock + depreciation cost + factor cost for payment of rent, wages and interest + profit.

Or, $GNP = \text{cost of raw materials drawn from past stock} + \text{depreciation cost} + \text{factor cost for payment of rent, wages and interest} + \text{profit}$.

Now, cost of raw materials drawn from past stock and depreciation cost taken together may be called depreciation in wider sense.

Therefore, $GNP = \text{depreciation in wider sense} + \text{factor cost for payment of rent, wages and interest} + \text{profit}$.

Or, $GNP - \text{depreciation in wider sense} = \text{rent} + \text{wages} + \text{interest} + \text{profit}$.

Or, $NNP = NNI$.

1.16.4. Gross Domestic Product and Net Domestic Product (GDP and NDP)

Gross domestic product (*GDP*) is the sumtotal of money values of all final goods and services produced within the geographical territory of a country in a given financial year. If we subtract the depreciation of capital from this *GDP*, we get net domestic product (*NDP*). Thus, $NDP = GDP - D$. Both *GDP* and *NDP* can be measured either at market prices or at factor cost. To get *GDP* at market price, we have to multiply the quantities of goods and services produced within the

geographical territory of the country by their respective prices and then add up. Thus we get *GDP* at market price. Subtracting depreciation from it, we get *NDP* at market price. Again, subtracting indirect taxes from *GDP* at market price and adding subsidies we get *GDP* at factor cost. Similarly, subtracting indirect taxes from *NDP* and adding subsidies, we get *NDP* at factor cost.

1.16.5. Gross Domestic Product and Gross National Product (*GDP* & *GNP*)

Gross domestic product (*GDP*) is the sumtotal of money values of all final goods and services produced within the geographical territory of a country during a financial year. On the other hand, gross national product (*GNP*) is the sumtotal of money values of all final goods and services produced by productive resources of a country during a financial year. In this case, the production may occur within or outside the geographical boundary of the country. In the case of an open economy, its inhabitants receive some income from abroad. Similarly, they have to pay some money to the foreigners. The difference of the two may be called net income from abroad. $GNP = GDP + \text{net income from abroad}$. If this net income is positive, then $GNP > GDP$. If this net income from abroad is negative, then $GNP < GDP$. In a closed economy, there is no foreign transaction. Hence, in a closed economy, $GNP = GDP$. Again, subtracting depreciation from *GNP* and *GDP*, we get *NNP* and *NDP* respectively. Hence, in a closed economy, $NNP = NDP$.

1.16.6. Personal Income (*PI*) and National Income (*NI*)

Personal income is the sumtotal of incomes actually received by all individuals of a country during a year. This is not equal to the net national product. In the accounting of personal income, undistributed profit of the companies, institutional tax, social security payments, etc., are not included, as the individuals do not receive them. But these are included in national income accounting. So, to get the value of personal income, we have to exclude these items from national income. Again, pensions, allowances and such other transfer payments are part of personal income. But these are not included in national income accounting. So, to get personal income, we have to add such transfer payments to national income. Thus, $\text{personal income} = \text{National income} - (\text{undistributed profit} + \text{social security payments} + \text{institutional payments}) + \text{Transfer payments}$.

1.16.7. Personal Income and Personal Disposable Income

Personal income is the sumtotal of incomes actually received by all individuals of a country during a year. On the other hand, personal disposable income is the amount of money available to all individuals and households in a year for the purpose of spending. Individuals cannot spend all of their incomes. They have to pay direct taxes. Thus, $\text{personal disposable income} = \text{Personal income} - \text{Direct personal taxes (i.e., income tax, personal property tax, etc.)}$.

1.16.8. Per Capita Income

Per capita income of a country is equal to the ratio of national income to total population of that country. Thus, dividing national income of a country by its total population, we get per capita income i.e.,

$$\text{per capita income} = \frac{\text{National income}}{\text{Total population at the mid-year}}$$

If the national income is money national income, we get per capita money income. If national income refers to real national income, we get real per capita income. This real per capita income is taken as the indicator of economic development. So, for economic development, real national income should increase at a greater rate than population.

1.16.9. Money National Income and Real National Income

In calculating national income we multiply the quantities of different commodities by the respective prices in order to arrive at the national income total. In order to calculate national income of a particular year, if we take the prices of the same year, we get national income at current prices. This is also known as money national income. Thus, if we take the quantities of commodities produced in 2010 and the prices of these commodities in 2010, then we can get national income of 2010 at current prices. This is also known as money national income of 2010. In this way, we can calculate the money national income for each year.

By real national income we mean the real quantities of goods and services produced in the economy during a given period of time. It is this real national income which is an indicator of the economy's productive potential. If the same amount of quantities are produced in 2011 as in 2010, then it can be said that the real national income has remained the same between 2010 and 2011. However, it is not possible to know whether real national income remains the same or not by looking at the figures of money national incomes for different years. This is so because even if the real quantities of goods and services produced in the economy remain the same, prices may increase or decrease and, as a result, money national income may change. If the price level remains the same between 2010 and 2011, then if money national income is higher in 2011, it can be said that real national income increases between 2010 and 2011. But if the price level increases between 2010 and 2011, then higher money national income of 2011 may not indicate higher real national income. Thus, from the data of national income at current prices, it is not possible to say whether real national income increases or not.

1.16.10. Methods of Measuring Real National Income

There are two methods to determine whether real national income is increasing or not. The first way is to calculate the money national income of different years not on the basis of prices prevailing in different years but on the basis of prices prevailing in a particular year called the base year. For example, suppose we are calculating money national incomes of 2012, 2013, 2014, etc., by taking the quantities produced in respective years but by taking prices prevailing in the base year, say, 2011. These national income figures are known as national incomes at constant prices or real national incomes of the respective years. Since prices remain constant, if national income at constant prices goes up, it definitely indicates an increase in the production of goods and services.

The second method of determining the real national income from the money national income is to use the index number of prices for eliminating the influence of price change in money national income. An index number of prices represents the change in the average level of prices in a particular year compared to a base year. For example, if the index number of prices of 2012 with 2011 as base is 200,

it indicates that on the average, prices in 2012 are double the prices in 2011. We can construct price index numbers for different years taking a particular year as the base year. For example, we can construct price index numbers for 2012 or 2013 or 2014 with 2011 as the base year.

By dividing the money national income of a particular year by the price index number of that year (without the multiplicative constant 100), we get the real national income of that year. Thus, if the price index number of 2012 with 2011 as base is 200, then dividing the money national income of 2012 by 2 we can get the real national income of 2012. This process of division by the price index number is known as deflating.

1.17. Measurement of National Income

National income can be regarded from three standpoints. *First*, it is the money value of national product. *Secondly*, it is the incomes of all earning units of the economy. *Thirdly*, it is the expenditure of all economic units i.e., it is the national expenditure. Accordingly, there are three methods of measurement of national income. They are : (i) Census of Production Method or Final Products Total, (ii) Census of Income Method or Consumption-Investment Total and (iii) Census of Expenditure Method or Factor Payments total. In the census of production method, we make a complete list of all products produced by by all the productive units of the country during the year and add them together to obtain the *GNP* total. However, to avoid multiple counting, only the final products of only the values added will have to be taken into account. In the census of income method, we make a complete census of all incomes earned by all members of the nation during the year for participation in the production process and add them up to obtain the national income total. In the expenditure method, we make a complete list of all expenditures to get gross national income which is equal to *GNP*. We shall consider these three methods one by one.

1.17.1. Census of Production Method, or Final Products Total

In this method, we make a complete census of all final products produced in an economy during a year. We then add them together. The result is called gross national product (*GNP*). Since different goods and services have different units, they can be added only by taking their money values. If we use current year's price to get these money values, we get *GNP* at current price. If we use prices of a past year (called base year), we get *GNP* at base year's price. If we subtract depreciation of capital from the *GNP* total, we get the net national product (*NNP*) of the economy at market prices. If we subtract indirect taxes and add subsidies with it, we get *NNP* at factor cost. By national income we generally mean this *NNP* at factor cost.

To measure national income by the product method, following points should be kept in mind.

1. Only the final products should be included in the estimation of national income. Intermediate products should be excluded. Otherwise, there will be double or multiple counting and the figure of national income will be inflated. One way to avoid this problem of double or multiple counting is the value added method. In this method, we take the value

- added at each stage of production and add them up. This will give us the value of the final product.
2. Unsold stocks of goods of the same year *i.e.*, inventories are to be valued at the existing market price and should be included in the GNP total.
 3. Goods consumed by the producers themselves should be included in national income. These goods are to be valued at market prices at which similar products are sold in the market.
 4. Services of owner-occupied houses are to be evaluated on the basis of imputed rents, *i.e.*, rents of similar houses that have been actually rented out. It should also be included in the GNP total.
 5. The values of household services rendered by the members of the family is not included in the GNP total. But the value of services rendered by paid workers in the household sector is to be included. Wages paid to such workers are taken as the value of such services.
 6. In the case of self-employed persons, the values of their services are to be included in the GNP total.
 7. Public services, such as defence, police, *etc.* have no market. But such services should be included in the GNP total. The cost of provision of such services is taken as their values.

In this way, some of the problems of valuation of non-marketed goods are overcome in the product method. We take the money values of all final goods and services produced during the year. Adding them, we get GNP of the country. Subtracting depreciation of capital from GNP, we get NNP or net national income of the economy.

In the census of production method, multiple counting of the same product may arise if we take the total value of each and every product separately. To avoid this multiple counting, two methods are available : One is the **value added method** and the other is the **final product method**.

In the value added method, we take the value added at each stage of production and add them up. The value added by a productive unit is the difference between the total value of its output of the year and the value of all raw materials that have been drawn from the production of the year and have been used up. The value of raw materials drawn from the accumulated stocks is not deducted and the value of raw materials drawn from current year's production but not used up in the year is also not deducted.

In the final product method, all products are divided into two categories : intermediate goods and final goods. If a product produced in a year is employed and used up in the same year as an input it is called an intermediate use. All other uses are final uses. All final uses are taken into account and all intermediate uses are excluded in the final product method to avoid multiple counting.

The value added method and the final product method give us the same figure of the GNP total. The equivalence of the two methods can be shown as follows : suppose in an economy wheat is produced worth ₹ 1,000 during a year. The entire wheat is transformed into flour in the same year and the flour is valued at ₹ 1,500. Suppose also that the entire output of flour is used up in the production of bread during the same year and bread is valued at ₹ 2,500. If we add up the value of

wheat, the value of flour and the value of bread we have multiple counting because the value of wheat is included in the value of flour and the value of flour is included in the value of bread. Hence, the value of wheat is included thrice while the value of flour is included twice. To avoid this, we take either the value of bread which is the final product in this case or the values added in different stages of production. Value added in wheat production is ₹ 1,000, value added in the production of flour is ₹ 500 and the value added in the production of bread is ₹ 1,000. Hence, total value added is ₹ (1,000 + 500 + 1000) = ₹ 2,500. Again, the value of output of bread is also ₹ 2,500. Thus, we arrive at the same figure in both the methods.

1.17.1.A. Value Added Method : Exposition by an Example

In the census of production method, we should add the values of the final products and not the intermediate products in order to get national income. Otherwise there will be double or multiple counting. To avoid this, we may follow the value added method, as prescribed by Samuelson. In this method, we estimate the value produced in each stage of production and add them up. Thus we get the final value of the product.

To clarify the argument, we give an example. A farmer produces wheat worth of ₹ 5. The final product obtained from wheat is bread and its value is ₹ 12. Again, when wheat becomes flour, its value is ₹ 8. So the value added is ₹ 3. Similarly, when the flour becomes bread, the value added is ₹ 4. So, the total value added is ₹ (3 + 4) = ₹ 7. Hence, the value of the final product = initial value + total value added = ₹ 5 + ₹ 7 = ₹ 12 which is equal to the value of the bread. Thus the final product method and the value added method give the same result. Whereas the value added method counts the flow of output through each process, the final product method counts the flow of output at the end of the production process.

Value Added Method

Stage of production	Sale Receipt (₹)	Value added (₹)
Wheat	5	0
Flour	8	3
Bread	12	4
Total	—	7

1.17.2. Census of Income Method, or, Factor Payments Total

To measure national income by the census of income method, we make a census of all the earning units of an economy. An earning unit may be an individual or an institution. Now, incomes of all earning units are added up to get the national income of the economy.

Let us assume that production takes place only in firms. Individuals supply different factors of production i.e., land, labour, capital and organisation. As a result, they get factor incomes. These incomes are rent, wage, interest and profit respectively. Hence, national income which is the income of all earning units, is equal to the sumtotal of all rents, wages, interests and profits. Thus, national income = Rent + Wage + Interest + Profit. Here national income is obtained by adding the factor incomes. Hence, the method is known as **factor payments total**.

In the census of income method, the following points should be noted :

1. Transfer payments should not be included in the national income. Such payments are made without receiving any service in return. Unemployment benefits, pensions, reliefs, etc. should not be included in the national income total.
2. Capital gains should not be included in the national income. Capital gains are earned without rendering any productive service.
3. Undistributed profits of the firms should be counted in the calculation of national income.
4. Imputed rents of owner-occupied houses should be included in the national income accounting.
5. Household services rendered by the members of the family and for which no payments are made, are not included in the computation of national income. If, however, domestic servants are employed in the household sector, payments made to such domestic servants should be included in the national income total.
6. Receipts from the sale of assets should not be treated as income in the calculation of national income. Thus, if a person sells a house or a bond the receipt should not be included in the national income total. We have already said that the capital gains, if any, from such sale should not also be included in the national income total. However, the current flow of income from a house or a bond or a patent right is the income to be included in the national income total.
7. Receipts from illegal activities (forgery, theft, etc.) should not be included in national income.
8. The goods or services which are not traded in exchange of money, are excluded from national income accounting.
9. Only the net incomes of individuals or institutions should be taken into account.

The census of income method is easy and simple to follow. However, its chief disadvantage is that in this method we have to identify at first all the earning units of the economy. Those earning units will be considered who earn income due to participation in the production of goods and services. An earning unit may be an individual or an institution. There is a large number of earning units in the economy and we have to collect the necessary data from all these units. This requires much time and money. For this reason, another method of national income accounting is used. It is known as the census of production method. We shall now consider this method.

1.17.3. *Expenditure Method, or Consumption-Investment Total*

What is cost or expenditure to one, is income to another. So, national income \equiv national expenditure. Let us assume that there are only two groups in the economy: households and firms. We further assume that households make consumption expenditure (C) while firms make investment expenditure (I). So, gross national product \equiv Gross national expenditure \equiv C + I. If we want to get NNP, we have to deduct depreciation of capital from GNP. So, NNP \equiv GNP - D \equiv C + I - D \equiv C + net I. If we assume that there is government

expenditure (G), then $GNP \equiv \text{Gross national expenditure} \equiv C + I + G$. Similarly, $NNP \equiv C + I + G - D \equiv C + \text{Net } I + G$. Again, if we assume an open economy, then to get GNP, we have to add the value of exports (X) to GNP. Similarly, the value of imports (M) is to be subtracted. Thus, in an open economy, $GNP \equiv GNE \equiv C + I + G + X - M$. Again, subtracting depreciation from GNP, we may get NNP, i.e., $NNP \equiv GNP - D$ or, $GNP \equiv NNP + D$.

SUMMARY

- **1. Meaning of Economic Development :** Economic development is a process by which real per capita income of a country rises over a long period of time together with structural change in the economy.
- **2. Distinction between Growth and Development :** Economic growth means increase in output while development is growth *plus* change. This change may include any aspect affecting the general welfare of a country.
- **3. Indicators of Economic Development :** There are four major indicators of economic development : per capita income, physical quality of life index, basic needs approach and human development index.
- **4. Human Development Index (HDI) :** HDI is a composite index of three indicators, namely, longevity, educational attainment and standard of living. Here, longevity is measured by life expectancy at birth. Educational attainment is measured by a combination of adult literacy (two thirds weight) and combined primary, secondary and tertiary enrolment (one third weight) ratios. Standard of living is measured by real GDP per capita (in terms of dollar as per purchasing power parity, in short, PPP\$). HDI is a simple average of these three indices. The value of HDI ranges between zero and unity. Countries with an HDI value below 0.5 are considered to have a low level of human development. Countries having HDI value between 0.5 to 0.8 have attained a medium level, and those above 0.8 have attained a high level of human development.
- **5. Definition of an Underdeveloped Economy :** An underdeveloped economy may be defined as an economy where per capita income is low but which has good potential or prospect of development by using its capital, labour and natural resources.
- **6. Characteristics of Underdevelopment :** The major characteristics of underdevelopment are : low income, meagre use of natural resources, lack of capital, predominance of agriculture, colonial type of trade, high population pressure, underdeveloped money market, immobility of factors of production, weak human factor, co-existence of traditional and modern sectors (dual economy), etc.
- **7. Obstacles to Economic Development :** The basic obstacles to economic development are : lack of capital, adverse international forces, agricultural constraint, human resource constraint, socio-cultural constraints, political and administrative obstacles, etc.
- **8. Basic Factors of Economic Growth, or, General Requirements for Economic Development :** Many factors are required for economic development of a country. These factors may broadly be divided into two categories, namely, economic factors and non-economic factors. The main