

‘factor income’. The two terms are explained in detail in Unit - 4. Here we will explain these terms in brief.

The term “residents” refers to those individuals (and institutions) whose economic interest lies in the country in which they live (or located). By economic interest we mean the basic economic activities of production, consumption and investment. Thus, Mr. A may or may not be the citizen of India but so long as his economic interest lies in India he is treated as Indian resident. You must have heard the term “Non-Resident Indian (NRI)”. Why are they called ‘non-resident’ and ‘Indian’? They are called Indians because they are Indian citizens and not of the country in which they live. They are called non-resident because they are not the residents of India but of the country in which they live because their economic interest does not lie in India.

Factor incomes refer to the incomes derived by those who provide factor service to production units. Land (natural resources), labour (human resources), capital (man-made resources) and entrepreneurship are the four factors of production. A production unit, in order to produce goods and services, employs these factors of production. A payment made to a factor of production for the services rendered is called **factor payment**. The owners of land get rent, labour gets wages or salaries, capital gets interest and the entrepreneur gets profit. The sum total of these factor incomes derived by the residents of a country is the national income of that country. In the technical language of national income accounting national income is called Net National Products at Factor Cost. This and other related aggregates woven around the concept of national income are explained in Unit -4. The scope of this unit is limited to just making you familiar with the concept of national income.

We go a step further and also make you familiar with the three ways of looking at national income. Incomes are first created in production units through the activity of producing goods and services. The owners of the factors of production then receive their shares. This is called the income of the factors of production. The recipients of these factor incomes spend the income on buying goods and services from production units. As such the creation, distribution and spending of income are respectively known as the Production, Income distribution and Expenditure angles of looking at the flow of national income. These are also respectively referred to as the Production, Income-distribution and Expenditure methods of measuring national income. In fact these are simply the three sources of data to obtain the same information (i.e. national income).

The three angles though aims at the same aggregate, i.e. national income, each one is significant in its own way in revealing the structure of economy. The production angle reveals the contribution of different production units, or groups of production units. The production units are commonly grouped into Primary Secondary and Tertiary Sectors. The terms Primary, Secondary and Tertiary and explained in Unit -4. The income-distribution angle reveals the distribution of incomes among different groups of factor owners like labour class, property class, entrepreneurial class, and land owning class. The expenditure approach reveals the purchases of goods and services produced by the production units. How much is bought for consumption and investment. Consumption expenditure is commonly classified into private and government. Investment expenditure is usually classified into domestic and foreign. Domestic investment is the investment within the economic territory of a country and is termed as

Gross Domestic Capital Formation. The term investment (in an aggregate macroeconomic sense) means addition to the capital stock, with capital in this context denoting machinery and instruments of production. Foreign investment is given by net exports (=Exports-Imports).

Check Your Progress 1

- 1) What do you understand by “resident” in the context of an economy?
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- 2) Name the four factors of production and the respective payments made to them.
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- 3) Describe in two sentences the information that expenditure method of estimating national income reveals.
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1.4 QUESTIONS ABOUT AN ECONOMY THAT INTEREST US

Laypersons may be interested in knowing about many things regarding an economy, but merely by observing what is happening around, they may not be in a position to obtain the answers to many of these questions. They may get some hints but not the definite answers. One has to look towards data to get some meaningful answers. Before we move further let us note some of the questions that interest us about an economy.

- 1) Is the economy growing ?
- 2) Are all parts of the economy growing ?
- 3) Are people getting more goods and services?
- 4) Are all sections of the people benefiting from growth?
- 5) Is the standard of living of the people rising?
- 6) What is the future of the economy?
- 7) How rich (or poor) is the economy in comparison to other economies of the world?

- 8) Is government spending enough on welfare programmes?
- 9) How should funds be allocated?

There may be many other questions, but we have confined ourselves to only some general questions that may interest a student of economics. The clues to all the above mentioned questions can be found in the huge amount of data collected in the process of estimating national income. We now take the above questions one by one and see their relation with national income data.

1.4.1 Is the Economy Growing?

You must have heard about the term “economic growth” often in economic news on radio, TV, etc. The news may be that India’s rate of economic growth is so and so percent. Do you know that this rate of economic growth is nothing but the rate of growth of national income (at constant prices)? Suppose, for illustration, that National Income at constant Prices of a country during the years 2003 and 2004 is respectively Rs. 1000 crores and Rs. 1060 crores. It means that during the year 2004 National Income at Constant Prices increased by Rs. 60 crores. The rate of growth is calculated as follows :

$$\begin{aligned}\text{Rate of growth} &= \frac{\text{Change in National Income at constant prices during a year}}{\text{National Income at Constant prices during the previous year}} \times 100 \\ &= \frac{60 \times 100}{1000} = 6\%\end{aligned}$$

The above 6% rise in the National Income at Constant Prices is the rate of growth of the country during a given year.

You were made familiar with the concept of national income above. But what is this ‘constant prices’ attached to it ? This concept is explained in detail in Unit 4. Here it would suffice to say that National Income at Constant Prices is a measure of increase in the net availability of physical goods and services, or an index of physical production. Thus, an increase in National Income at Constant Prices indicates increase in physical production of goods and services in the country.

1.4.2 Are All Parts of the Economy Growing ?

Occupationwise an economy is broadly divided into primary, secondary and tertiary sectors. Primary sector includes production units producing goods by exploiting natural resources. Some examples are farming, mining, fishing, animal husbandry, etc. Most of such economic activities are usually carried out in rural areas. The secondary sector includes production units engaged in transforming goods from one form into another. Some examples are production of bicycles, scooters, and television. Most of these activities are carried out in a factory or mill. The tertiary sector includes units producing only services like banks, transport shops, insurance government department, domestic servants, etc.

Relative comparison of performance of these sectors in the field of production and contribution to national income is the point of interest both for government and people. An unusual fall in the contribution of a sector alarms the government

because the performances of these sectors is dependent on each other. For example, if agricultural production is low supply of raw materials to the secondary sector will also be low and consequently the production. As a result the demand for services is also likely to be low. So if agriculture suffers, other sectors suffer too. The government may then have to import raw materials and food from abroad and spend valuable foreign exchange. If the secondary sector's production is low, the primary sector is also likely to suffer in terms of low demand for raw materials.

From the above it is clear that all parts of economy should grow. However, growth of a sector should not be confused with the share of a sector in the national income. For example, for development it is necessary for the agricultural sector to grow, but it is also broadly true that over the course of a nation's development over time, the share of agriculture in the national income falls, while that of the secondary and tertiary sectors grow. Data obtained in the process of estimating national income through the production method can supply the required information about the various sectors of the economy.

1.4.3 Are People Getting More Goods and Services?

Every country want that its people should get more goods and services every year. The measure that is used to find out if this is actually happening is Per Capita Income (of course at constant prices). Per capita income equals total national income divided by total population (you will occasionally come across the term *per caput*. This means the same thing as per capita, which means 'per head')

$$\text{Per Capita Income} = \frac{\text{National Income}}{\text{Population}}$$

Per capita income measures average availability of goods and services to an individual during a given year. If per capita income rises it means that on an average people are getting more goods and services. It is sign of betterment of people and every government will like to take credit for the same.

It is not necessary that when national income rises per capita income also rises. It is possible that the rate of growth of population may be faster than the rate of growth of national income. In this situation per capita income falls even though national income rises. This happened in India in the year 1976-77 when national income rose by 0.9 percent while per capita income fell by 1.3 percent because population grew at a rate of 2.2 per cent which was higher than the rate of growth of national income. Thus there may be more reason to be satisfied if per capita income rise rather than only national income rises.

1.4.4 Is Growth Benefiting All Sections of the Population?

National income may rise but may not necessarily benefit sections of the society, or *equally* benefit all sections. Let us take an illustration based on imaginary data. Suppose the economy is divided into rural and urban sectors. Suppose the following is known about the relative contribution of these sectors to national income during the years 2003 and 2004. (Table 1).

Year	Rural	Urban Sector	Economy
1	2	3	4
2003	80	120	200
2004	75	135	210
Rate of growth	(-) 6.25%	+12.5%	+5%

The table shows that national income increased by 5%. It also reveals that rate for growth of national income in rural area is negative. National income originating in the rural sector fell by 6.25% while that in urban sector increased by 12.5%. It implies that all sections of the people have not benefited from growth of the economy. This is a cause of worry both to government and people. It means that there are inequalities in income in the society.

The data about the distribution of income among different sections of the economy can be obtained when national income is estimated through the income distribution approach.

Is rural sector benefited along with urban sector? Is corporate sector benefited more than the non-corporate sector? Are all regions of an economy benefited from economic growth? These and a variety of similar questions bother politicians, policy makers, analysis. etc.

One special point of interest for any government is the share of Labour class in national income. The Labour class is always in majority in a country. Denying this class its due share in economic growth may lead to many political, social and economic problems in the country. No country can afford to invite Labour unrest. So if the government finds that there is fall in the share of labour in national income it can take suitable measures to correct the same like raising minimum wage, relief in taxes, etc. The data about the share of labour in national income can be directly obtained through the income distribution method of estimating national income.

Check Your Progress 2

- 1) Choose the correct alternative.

The rate of growth of a country is the same as the rate of growth of

- a) National income at current prices
- b) National income at constant prices
- c) Investment at current prices
- d) Investment at constant prices

- 2) Choose the correct alternative.

Fisheries are a part of

- a) Primary sector

- b) Secondary sector
 - c) Tertiary sector
 - d) None of the above
- 3) How do we know that on an average people are getting more goods and services every year ?

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1.4.5 Is the Standard of Living of the People Rising?

It is one economic aspect in which people in general are interested in and make comments quite often about the same when they chat with each other. “ We hardly had things earlier. Now we have them in plenty. Earlier, each one had normally two pairs of shoes. Now many people have many pairs of shoes. “Such comments are quite common in personal talks. These comments show how keenly people observe the general standard of living.

Standard of living of a family is determined by what that family spends on satisfaction of wants. Similarly the standard of living of the people of a country as a whole is determined by what people spend on consumer goods and services. If we divide total consumption expenditure in the country by total population we can get a measure of average standard of living. A suitable comparison of per capita consumption expenditures can tell us whether the average standard of living of the people is rising and at what rate ?

The expenditure approach to the measurement of national income gives the relevant data on the above point of interest. In this method total expenditure of the country is classified into consumption and investment expenditures. Consumption expenditure is further classified into private and government consumption expenditures. Private consumption expenditure is incurred by households. Government consumption expenditure is incurred by government on providing free services to the people. Both these expenditure affect the standard of living of the people. Every government will like to see that general standard of the people is rising. A detailed examination of data on consumption expenditure can also be helpful in determine the standard of living of the different sectors of the society. Such an examination can be very helpful in taking policy measures regarding different sections of the society.

1.4.6 What is the Future of the Economy?

We all make provisions out of current income to make our future secure. In other words, we save out of current income and invest these savings in financial instruments to earn more income in future years. In the same way the society as a whole saves and invests. The investments so done lead to bigger flow of goods and services in the future. More the investments the more the flow, and the higher the standard of living of the society in future is likely to be.

The expenditure approach of estimating national incomes requires the collection of data on saving and investments in the country. Investment within the economic territory of the country is termed as Domestic Capital Formation . Investment outside the country is termed net exports (equal to exports minus imports). The two investments taken together determine largely what is in store in future for the society. This is why every government lays so much emphasis on fresh investments in the country.

1.4.7 How Rich (or Poor) is The Economy ?

It is a relative question and can be answered only by comparing the national income of the given economy with national incomes of other economies. Nearly all countries of the world estimate their incomes. By comparing our economy's income with the incomes of the other countries we can know, how much rich or poor our economy is in relation to foreign economies.

For example, the per capita national incomes of India and USA in the year 1994 were respectively 320 and 25,880 US dollars. A simple comparison of these figures reveals that an average American was earning 80 times that of an Indian. However this comparison is rather vague. Average price level is much higher in USA as compared to that in India. It means that a U.S. dollar spent in USA will get less goods and services as compared to the same US dollar spent in India. But such differences in price levels can be eliminated with the help of suitable price index numbers. The figures so obtained after adjusting for differences in price levels provide some meaningful data to make a comparison between two countries. We can, not only make comparison of income levels but we can also make comparisons of consumption expenditure, investments, government expenditures.

In the context of the world, we can make use of national data of different countries to any extent. Suppose an international project involving several countries is to be undertaken. The expenditure on this project can be shared according to the income levels of these countries.

1.4.8 Is Government Spending Enough on Welfare Activities?

It is basic duty of every government to maintain law and order, to guard the country from foreign attacks, to provide certain basic facilities like water supply, education, medical facilities, roads, etc. For this purpose government incurs expenditure on lice, courts, military, sanitation, schools, colleges, roads, hospitals, etc. More the expenditure more the facilities. Every government would like to take credit on this point. The expenditure method of estimating national income helps in collecting data on these needs. This variable is called Government Final Consumption Expenditure, and is a measure of the value of free services rendered to the people.

1.4.9 How Should Funds be Allocated ?

Such decisions are normally taken by the planning commission, or any other alternative bodies appointed by the government. The problem is clearly of allocation of funds. It is difficult exercise full of technical problems. It is just not allocating this much for one and that much for the other sector. While allocating funds to an individual sector its technological dependence on other sector must have to be kept in mind. In allocating funds to the agricultural

sector its dependence on producers of chemical fertilisers, pesticides, water pumps, generator sets, tractors, transporters, etc. must be kept in mind. So if funds are allocated to agriculture and if no funds are allocated to the supporting sectors the targets may not be achieved.

For the funds allocation exercise it is necessary to know (a) from whom the given industrial sector buys inputs and (b) to whom it sells its output. This technological information about all the industrial sectors of the economy is summarized in an account called 'Input-output accounting matrix'. It is prepared from the detailed data made available in the process of estimating national income through the various methods. Such an account reveals the production functions of industrial sectors of an economy and can serve as a useful guide to Planning Commission or similar government bodies.

Check Your Progress 3

- 1) Choose the correct alternative.

Which of the following indicates standard of living of the people of a country?

- a) National income
- b) Investment expenditure
- c) Consumption expenditure
- d) None of the above

- 2) Choose the correct alternative

Information on investment is obtained in the process of estimating national income by

- a) Production method
- b) Income distribution method
- c) Expenditure method
- d) All the three methods

- 3) How do you know from national income data that government is spending enough on welfare of the people?

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- 4) How is national income data helpful in allocation of funds among different industrial sectors?

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1.5 LET US SUM UP

National income data has great relevance in the study of an economy. The study of an economy is the study of production, consumption and investment aspects of the residents of the country. National income of a country is the sum of factor incomes accruing to the residents of a country. The measurement of national income can be approached from three angles: production, income-distribution and expenditure. These three angles reveal different aspects of the economy.

The data obtained during the process of measurement of national income can be used to draw many conclusions about an economy. The rate of growth of national income (at constant prices) is a measure of rate of growth of the economy. Production method of estimating national income reveals the performances of different sectors of an economy. Per capita income (at constant prices) indicates average availability of goods and services to the people. Income-distribution angle indicated equitableness of distribution of income different grouped of an economy. Consumption expenditure data, collected through expenditure angle, provided a measure of standard of living of the people. Data on saving and investment, through expenditure method, can be used to predict economic future of the country. Government consumption expenditure indicates welfare activities of government. Input-output accounting matrix can be helpful in allocating funds to the different industrial sectors of the economy. By comparing a country's national income with national incomes of other countries we can know how much rich or poor our economy is.

1.6 KEY WORDS

Closed Economy	: An economy which does not have economic relations with the rest of the world.
Consumption Expenditure	: Expenditure on goods and services for satisfaction of wants.
Economy	: Refers to economic aspects of a country which includes basically economic activities of production , consumption and investment.
Factor Income	: The income accruing to a factor of production.
Investment Expenditure	: Expenditure on capital goods like machines, equipment, factory building, etc. during a year.
National Income	: Sum total of factor incomes accruing to the residents of a country during a given year.
Open Economy	: An economy which have economic relations with rest of the world.
Per Capita Income	: National income divided by population.

Primary Sector	: Production units engaged in exploiting natural resources.
Resident	: A person (or an institution) whose economic interest lies in the country in which he lives (or located).
Secondary Sector	: Production units engaged in transforming one good into another good.
Tertiary Sector	: Production units engaged in producing services.

1.7 SOME USEFUL BOOKS

Abraham, W.I, *National Income and Economic Accounting* (1969), New Jersey: Prentice Hall.

Agarwala, S.K., *National Income Accounting* (1998), Delhi : Bookland Publishers.

Beckerman, W., *An Introduction to National Income Analysis* (1976), ELBS.

Hicks, J.R., *The Social Framework* (1971), Delhi : Oxford University Press.

Hicks. J.T, Mukerjee M. and Ghosh, Syamal K. *The Framework of the Indian Economy* (1984), Delhi : Oxford University Press.

Ruggles, R and Ruggles, N.D. *National Income Accounts and Income Analysis* (1956), New York : Mcgraw Hill.

Studenski, Paul, *The Income of Nations, Part-II* (1958), New York : New York University Press.

1.8 ANSWERS OR HINTS TO CHECK YOUR PROGRESS EXERCISES

Check Your Progress 1

- 1) A resident is one whose economics interest lies in the economy in which he lives. By economic interest is meant the basis economic activities of production, consumption and investment.
- 2) Land (natural resources) : Rent
Labour (human resources) : Wages and salaries
Capital (Man-made resources) : Interest
Entrepreneurship : Profit
- 3) The expenditure approach reveals that who purchases goods and services in the Country. How much is bought for consumption and how much for investment ?

Check Your Progress 2

- 1) b) National income at constant prices.

- 2) a) Primary sector.
- 3) By estimating per capita income (at constant prices) which equals total national income (at constant prices) divided by total population.

Check Your Progress 3

- 1) c) Consumption expenditure.
- 2) c) Expenditure method.
- 3) By looking at government's final consumption expenditure which is measure of free services rendered to the people.
- 4) Within the help of input-output transactions matrix which records purchases by industrial sectors from other industrial sectors. The matrix is prepared on the basis of national income data.



UNIT 2 CIRCULAR FLOW OF ECONOMIC ACTIVITY

Structure

- 2.0 Objectives
- 2.1 Introduction
- 2.2 Economic Activity
 - 2.2.1 Meaning
 - 2.2.2 Scarce Resource Criterion
 - 2.2.3 Price Criterion
 - 2.2.4 Modified Criterion
- 2.3 Classification of Economic Activities
- 2.4 Production
 - 2.4.1 General Meaning
 - 2.4.2 Economic Meaning
 - 2.4.3 Comprehensive Production Concept
 - 2.4.4 Other Concepts of Production
 - 2.4.5 Restricted Material Production Concept
 - 2.4.6 Restricted Market Production Concept
- 2.5 Consumption
- 2.6 Investment
 - 2.6.1 What Is Investment?
 - 2.6.2 Measures of Investment
 - 2.6.3 Gross Versus Net Investment
- 2.7 Relation Between Production, Consumption and Investment
- 2.8 Transactor Groups
- 2.9 Circular Flow of Economic Activities
- 2.10 Income Generation
- 2.11 Let Us Sum Up
- 2.12 Key Words
- 2.13 Some Useful Books
- 2.14 Answers or Hints to Check Your Progress Exercises

2.0 OBJECTIVES

This unit aims at familiarising you with the nature of the flow of different economic items among different economic actors. The basic scheme of this flow of economic activity is called 'circular flow'. This unit explains why it is so described. After going through this unit you would be able to :

- state the meaning of economic activity;
- explain different concepts of production;
- describe consumption activity;

- explain the meaning and different concepts of investment;
- discuss the relation between production, consumption and investment; and
- describe the circular flow of economic activities among the different transactors.

2.1 INTRODUCTION

Income is the desired outcome of any production. Income represents command over goods and services. The motivating force behind seeking income is satisfaction of wants. Expenditure on satisfaction of wants is called consumption expenditure and the activity of satisfying wants is called 'consumption activity'. Consumption is required first for keeping us alive and then for making our lives better. Wants are never ending and multiply faster when there is prospect of higher income. The prospect of higher income comes from investment. The desire for higher consumption levels induces investment. Investment in turn leads to more production. Thus production, consumption and investment influence each other in a circular manner, one influencing the others. The aim of this unit is to bring out this circular relationship among different economic activities and identify the income generating flows arising out of this relationship.

2.2 ECONOMIC ACTIVITY

2.2.1 Meaning

What is an economic activity? It is simply income earning activity? Is it only production activity? In common parlance this may probably be the only meaning attached to economic activity. But what is the motive force behind earning income or production? Is it the spending of income or using of what is produced? There is no use of producing something if no one is going to use it. As earning and spending of income or production and use of production, are simply two sides of the same coin, both are economic activities. Although in the narrow sense an economic activity may be taken to mean only production activity, in the broader sense it is taken to mean both production and *use* of that production. Consumption and investment are the two possible uses of what is produced. So in the broad sense production, consumption and investment are all economic activities. Before we explain these forms of economic activity let us see what distinguishes economic activity from non-economic activity. In other words what are the criteria for calling an activity as economic activity?

2.2.2 Scarce-Resource Criterion

There are many things that are essential for living; not only essential but absolutely indispensable like air and sunshine. Do we have to pay any price for these? No, we do not have to pay any price for air and sunshine, because these are available to us in plenty from nature. The natural resources, which produce air and sunshine, are not scarce. We can conveniently call such resources as non-economic because these resources do not command any price in the market. As such any production, like that of air and sunshine, from these resources can be called non-economic production and the activity of these

resources as non-economic activity. Thus any good or service resulting from non-economic resources is not economic activity.

Does it, by implication, mean that production activity resulting from scarce or economic resources is economic activity? As we will see just a little later, it need not necessarily be so. Let us first see what a scarce or economic resource is. Take, for example, land. We produce crops on land with the help of labour and capital equipment like tractor, water pumps, etc. The crops thus produced command a price in the market. Here land, labour and capital are economic resources and the production activity by using these resources is economic activity.

2.2.3 Price Criterion

There are certain activities that result from the use of scarce resources and yet do not command any price in the market. For example, morning walks, physical exercise, sports, hobbies, etc result from a scarce resource labour and yet these activities do not command any price in the market. These activities are non-economic activities. This gives us an additional criterion for treating any activity as economic activity. Scarce resource criterion was the first criterion. The second criterion now is that the good or service resulting from the activity must command a price in the market. We can call it the price criterion.

2.2.4 Modified Criterion

When we come to actually assigning a price the price criteria is needed to be modified. Commanding a price is one thing but actually assigning a price is another thing. A product may command a price yet it may be difficult to assign a meaningful price to it, many a time. Take, for example, a good number of household jobs family members do like cooking, cleaning, washing, looking after children, guiding children in studies, taking care of the sick, polishing shoes, shaving, ironing clothes, looking after the aged and so on. All of us do such types of jobs in our families. Most of these jobs can be got done from the market or by employing domestic servants, tutors, nurses, washer-men, etc. If we get these jobs done from the market we have to pay a price. If we do these jobs ourselves we virtually pay price to ourselves. It makes all households virtual economic jobs because we use our scarce time and resources to do these jobs. If we do these jobs for others we can get a price for the same. But when it comes to assigning monetary values to these self-consumed output producing jobs, statistical problems creep in for the estimators. There are millions of households in a country like India doing these jobs. How to get data about how many have done and how much work has been done during the year. How to know that with what amount of affection, love and profession this work has been performed. Some family members help each other out of sheer love and affection. Some do so out of social compulsion or out of fear of elders. Some are busy throughout the day like housewives and some are busy only part of the day. The crux is that it is extremely difficult for the estimators to get information about the quantity of work done or time devoted to these jobs, not to mention the quality of work. Forced by the lack of data, estimators have no option but to leave out this activity from the scope of valuation of economic activity in the national accounting.

We have seen above that though the self-consumed household jobs command

a price yet it is extremely difficult to assign monetary values to these jobs. Conceptually, these jobs must be a part of economic activity but left out from its scope due to the difficulties of measurement. So, in practical estimates the criteria “command a price” is modified to criteria “has a price or is capable of being assigned a price”. As such, all activities which may command a price but are not capable of being assigned a price are left out. The modified criterion virtually classifies economic activities into ‘measurable’ and ‘non-measurable’ and includes only measurable activities in its scope. This is the criteria used in practical estimates in India.

To conclude, in practice, for any activity to be classified as economic activity, it has necessarily to pass two tests: (i) The activity results from the use of scarce resources; (ii) the output of the activity is capable of being assigned a price. In other words, a non-economic activity is one which does not involve scarce resources or is not capable of being assigned a price.

Check Your Progress 1

- 1) State the meaning of an economic activity.

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- 2) State the two criteria of economic activity.

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- 3) Explain briefly the modified criterion of economic activity used in practice.

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2.3 CLASSIFICATION OF ECONOMIC ACTIVITIES

We have seen in Section 2.2 that production activity is not the only economic activity. Production will be of no use unless there are buyers for what is produced. Goods and services are purchased either for satisfaction of wants or to be used for producing more goods and services. Purchases made for satisfaction of wants are consumption purchases. Purchases for producing more goods and services are investment purchases. The activities associated with these two purchases are called consumption and investment activities,

respectively . Like production these are also economic activities. The basic economic activities are thus broadly classified into

- 1) Production
- 2) Consumption
- 3) Investment

2.4 PRODUCTION

2.4.1 General Meaning

In general terms, any activity leading to creation of utility can be defined as production activity. Farming is a production activity because it produces useful crops with the use of land, seeds, fertilisers, water and output inputs. Manufacturing is a production activity because it converts raw materials into useful products. Banking is a production activity because it provides borrowing and lending services to the people. Cold storages provide storing services by keeping fruits, vegetables, etc. fresh for a long period. Transporters create utility by transporting goods to places where they are needed. Education institutions produce educational services. A place of worship produces religious services. This is the general meaning of production.

2.4.2 Economic Meaning

The concept of production when defined as an economic activity is somewhat narrowed down. It is deemed to be a process concerned with creation of utilities having economic values. The general meaning, as stated above, was concerned with creation of utilities only and was not specific whether these utilities have economic values or not. The economic meaning confined itself only to production which is capable of being translated into value terms. The production which cannot be expressed in value is treated as non-economic production.

2.4.3 Comprehensive Production Concept

Paul Studenski, a famous national income economist, has suggested the following four criteria for treating a particular good or service as a part of economic production. The concept so defined is called **Comprehensive Production Concept**.

i) **It is created by human labour and capital**

It means that the good or service must involve the use of one or more scarce resources. A scarce resource is one which commands a price in the market. By this test air, sunshine and even water to the extent it does not require further processing are not part of economic production.

ii) **It is capable of satisfying human wants**

The satisfaction may be direct or indirect. It is direct when a good or service is used directly for consumption. It is indirect when a good or service is used as a producer good for producing more goods and services. In other words, the good or service must be useful for consumption or for production.

iii) **It is comparatively scarce and need to be economised**

It means that the good or service has some economic value and a choice has to

be made in its distribution to the users. It further implies that the good or services are not available in so much abundance that everybody can get any quantity one likes. For example, air and sunshine are available in abundance and therefore there is no need to make any choice between the uses.

iv) **It has a price, real or imputed**

A good or services has a price when it is bought and sold in the market. It is clearly a part of economic production. But there are many goods and services which are not sold but either supplied free or self consumed. For example, many government services are supplied free to the people. These services are included in economic production by taking the cost incurred on producing these services as their monetary value. Take another example of housing services flowing from owner occupied houses. These services are self-consumed. The value of these services can be imputed on the basis of rental value of similar rented housed in the neighbourhood.

This criterion will not include in economic production those free or self-consumed products which cannot be assigned any monetary value. The free services which family members render to each other, to neighbours, to friends, to relatives, etc. come in this category because these cannot be assigned any monetary value. One of the and the stronger reason, is the lack of data. These free services are rendered in every family and there are millions of families in India. How to obtain data is the problem? Another, and comparatively less strong reason, is the absence of parallel market for many of these services. As such there is no option but to leave out services from the scope of economic production.

Most of the free or self-consumed services, though likely to pass the first three criterion, may fail to fulfil the fourth criterion. This is why even though it is conceptually warranted to include the free and self-consumed services provided by family members yet left out from the scope of economic production due to statistical problems.

2.4.4 Other Concepts of Production

We have explained above what Studenski has termed as **Comprehensive Production Concept**. Why is this concept called comprehensive will become clear when we study two other concepts delimiting the scope of production in a rather different way. These two concepts are: **Restricted Material Production Concept** and **Restricted Market Production Concept**.

2.4.5 Restricted Material Production Concept

The concept was given by Adam Smith, who wrote in the 18th century, and is widely regarded as the father of modern economics. According to this concept, only *saleable* material goods and services, that is, goods and services that can be potentially sold in the market, that help to complete the utility of these material goods into potential exchange value constitute production. By implication, those services that are connected with production of material goods are not to be treated as production. On the basis of this criterion most government services, advertising and marketing services, services of educational institutions, etc. not connected directly with material production are left out. Later on, Karl Marx also defined production more or less in the

same way as Adam Smith had. Since socialist countries followed the political and economic ideology of Karl Marx, the **Restricted Material Production Concept** became popular as the socialist concept of production.

The concept is criticized on the ground that it is narrow and measures only a portion of the true production of the country when applied to the measurement of national income. It also makes the comparison difficult with a country which has adopted a wider concept.

2.4.6 Restricted Market Production Concept

According to this concept production constitutes of only those products that pass through the market and whose value is determined by the free interplay of the forces of demand and supply. This is based on marketability criterion. It will exclude services of government, non-profit institutions serving households and similar services for which no parallel market exists and to which it is not possible to assign any objective value. This concept found little acceptance in practice nearly on the same grounds as the Restricted Material Concept. If adopted, it will also lead to understatement of production and national income.

Now it must be clear that why the Comprehensive Production Concept is called *comprehensive*. It is called so because it includes both material and non-material production and both marketed and non-marketed production in its scope. This concept is adopted, may be with slight degree of variations, by the market oriented countries and is sometimes popularly termed as capitalist concept of production.

2.5 CONSUMPTION

Meaning

Consumption refers to an activity leading to satisfaction of wants. All goods and services acquired with the intention of satisfying wants are classified as consumer goods and services. The expenditure incurred on these goods and services is called consumption expenditure. It is not the nature of the good but the use of the goods that determines whether a good or a service is a consumer good or not. Bread purchased by a household is acquired for satisfaction of hunger and therefore it is a purchase for consumption good. Bread purchased by a restaurant is acquired to produce other goods and, therefore, not a consumer good but a producer good. Service of an electrician rendered to a household are consumer services while those rendered to a factory are producer services.

Sources of Consumption Expenditure

There are three sources of consumption expenditure in a country. One source is households or individuals who acquire goods and services for satisfaction of wants of family members. Another is Non-Profit Institutions Serving Households who provide free services to households on collective basis. Some examples of such institutions are found in private charitable societies running schools, dispensaries, places of worship, community associations, trade unions, and so on. The third source is general government which runs the administration of the country on behalf of the people and spends on goods and services for meeting collective wants of the people. Such expenditure is on police, courts, military, maintenance of public properties, sanitation, charitable hospitals,

schools, colleges, training institutions and many more such items. The sum total of consumption expenditure in the country is taken as the sum of such expenditure incurred by households, non-profit institutions serving households and general government.

Single-Use Versus Durable-Use Consumer Goods and Services

The goods and services used for consumption are classified into single-use and durable use. Their meaning is clear by their name. Goods and services which are used only once and lose their identity after that are called **single-use** goods like food items. Goods which are used again and again are **durable-use** goods like clothes we wear, shoes, furniture, electrical gadgets, books, TV sets, audio sets.

We have pointed out the distinction between single-use and durable use because failure to so distinguish can create problems in estimation of consumption expenditure. Single-use goods do not create much of a problem because most of these are perishable goods and likely to be used for consumption in the year in which they are purchased. Durable use goods create accounting problems. Take, for example, an item of furniture bought in a particular year by a household. This item of furniture will actually be used for a number of years. So expenditure on this must also be spread over the number of years. If this costs Rs.500 and its useful life is 5 years, the consumption expenditure in a particular year should amount to only Rs.100. What is true about the item of furniture is true about many items like TV set, cars, transistors, books, expensive clothes etc. These items create problems in estimation of consumption expenditure. The estimators account the whole of such expenditure in the year in which the durable use goods were purchased. It is because it is difficult to obtain data about the quantity, quality, life etc. about such goods. As such durable use goods deemed to be consumed in the year of purchase.

2.6 INVESTMENT

2.6.1 What is Investment?

The term 'investment activity', as used in economics, and in the level of the aggregate economy, is capital formation: Any addition to capital assets during a year is termed as investment. Capital assets as we are using here denote the produced means of production, that is, capital goods and not in the sense of financial assets like shares, debentures etc. Capital assets of a production unit are of two types: (a) Fixed Capital Assets, and (b) Inventory or stocks of materials and goods. The main examples of fixed capital assets are building, machines, furniture, transport vehicles and other permanent fixtures. Inventory includes stocks of raw materials, semi-finished goods and finished goods. Expenditure on making addition to these assets in a year is termed investment expenditure or simply investment.

Investment, i.e. additions to capital assets, may be deliberate or just a matter of 'no option'. Investment in fixed asset is mostly deliberate and planned. But investment in stocks may partly be deliberate and partly a matter of compulsion. Every production unit has to keep a certain minimum amount of materials and goods as a matter of convenience. But sometimes a production unit is not able to sell whole of the output produced during the year. Its unsold output becomes

a part of closing stock of the year which is treated as investment. Thus both planned and unplanned addition to capital assets during a year is investment. This is true about both a production unit and the country as a whole.

2.6.2 Measures of Investment

Investment at macro level can be measured in two alternatives ways. One way is to treat the excess of production over consumption as investment. In other words, the part of country's production which is not acquired for consumption is investment, or

$$\text{Investment} = \text{Production} - \text{Consumption}$$

Alternatively, investment is measured as the addition made to the total stock of capital in a country during the year. Capital refers to the stock of capital goods that exists at the beginning of the year. Investment is the net addition made to this during the year. Suppose for illustration, that capital stock at the beginning of the year 2005 i.e. on 1.1.2005 is Rs.1000 crores. Suppose at the end of the year i.e. on 31.12.2005 capital stock is Rs.1100 crores. This addition of Rs.100 crores of capital assets during the year is investment.

$$\begin{aligned}\text{Investment} &= \text{Capital stock at the end of the year} - \text{Capital stock at the} \\ &\quad \text{beginning of the year} \\ &= 1100 \text{ crores} - 1000 \text{ crores} \\ &= \text{Rs.100 crores}\end{aligned}$$

2.6.3 Gross Versus Net Investment

A fixed capital asset has a limited life. It depreciates every year and is to be replaced when its life is over. The normal wear and tear of fixed capital assets during the year is termed as 'consumption of fixed capital' or 'depreciation'. This reduces the amount of effective capital stock in the country. Addition of new capital goods during the year is investment. In fact it is called gross investment. It is called gross because the reduction in capital stock on account of consumption of fixed capital or depreciation has not been deducted from the new addition. By deducting consumption of fixed capital from gross investment we get a measure of net investment. Thus gross investment is a measure of 'new addition' while net investment is a measure of 'net addition' of capital goods.

$$\text{Net Investment} = \text{Gross investment} - \text{Consumption of fixed capital}$$

The above statement is based on the assumption that there is no loss of fixed capital assets on account of unforeseen factors like fire, earthquake, floods, change in government policy, change in tastes, etc. The loss of fixed capital on account of these factors is termed as 'capital loss' and not consumption of fixed capital. If there is such capital loss during the year the actual net investment may be lower.

2.7 RELATION BETWEEN PRODUCTION, CONSUMPTION AND INVESTMENT

The basic economic activities are related to each other in two ways. First, if we know the amount of any two of these we can find out the amount of third

activity. Suppose we are told that the amount of production is Rs.100 crores and the amount of consumption is Rs.80 crores. By subtracting consumption (Rs.80 crores) from production (Rs.100 crores) we get investment (100-80 = Rs.20 crores) . So

Production = Consumption + Investment

Consumption = Production – Investment

Investment = Production – Consumption

Second, the three activities influence each other. More production means possibility of more consumption and more investment. Given production if there is more of consumption there would be less of investment, or, more investment means less of consumption.

More investment leads to more production which in turn makes possible more consumption and investment. More investment in turn may lead to more production and leads to cumulative effects.

More consumption may encourage more investment and consequently more production. More production which in turn may lead to further increase in consumption and investment.

Check Your Progress 2

- 1) Give economic meaning of production.

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- 2) State the four criteria of comprehensive production concept.

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- 3) Given two alternative measures of investment.

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2.8 TRANSACTOR GROUPS

Transactors performing economic activities are usually grouped into the following:

- 1) Production units
- 2) Consumer households.
- 3) Non-profit institutions serving households
- 4) General government
- 5) Rest of the world.

Let us see what these groups are and what economic activities they perform.

i) Production Units

A production unit comes into existence when the owners of the four factors of production join hands to produce a good or a service. Land, labour, capital and entrepreneurship are the four factors of production. The entrepreneur takes the initiative in organising a production unit. He hires the services of other three factors of production. In both business accounting and national income accounting production unit is treated a separate entity from its owners. As such in accounting practices, it is the production unit which is assumed to be hiring the services of all factors of production including the entrepreneurship. The entrepreneur is the owner of the business and yet, he is treated as the 'hired rather than the hirer'. The separate entity of the production unit is maintained throughout the study of national income accounting.

Production unit include all units in a country whether owned by residents or non-residents, producing goods or services, small or large, organised or unorganised, private owned or government owned, producing for selling in the market or for self-consumption or free distribution. In this way the scope of production units is comprehensively defined.

There are two main functions of production units. First, these hire factor services and produce goods and services. Second, the income so created in the process of production is distributed among the owners of the factors of production. Such payments are called 'factor payments' or 'factor cost'. When looked at from the angle of owners of factors, these are called 'factor incomes'.

ii) Consumer Households

Consumer households include individuals and families acquiring goods and services for satisfaction of wants. They are called consumer households because producer households are a part of production units.

Consumer households perform two functions. First, they supply factor services to production units and in turn get factor incomes. Second, they spend these incomes on goods and services produced by production units. Whatever is not spent is considered as saving.

iii) Private Non-Profit Institutions Serving Households (PNPISH)

PNPISH include all private social, religions and other such organisations producing goods and services but supplying the same free or at a price which is much below the cost incurred. Some examples are charitable hospitals, charitable schools, temples, churches, mosques, gurudwaras, neighbourhood association, etc. These are called 'non-profit' because their ostensible intention is not to sell what they produce and earn a profit but to serve people. The cost

incurred on providing free services by these institutions is taken as consumption expenditure.

iv) **General Government**

General Government includes all government departments at all levels, central, state or local, producing and supplying free services to the people. It fulfils the collective wants of the people like that of law and order. Justice, defence, education, medical treatment, sanitation, water supply, roads, etc. To fulfil these collective wants government departments spend on police, courts, military schools, hospitals etc. For this purpose general government buys goods and services from production units. The expenditure incurred on providing free services to people is termed as government consumption expenditure. To finance its expenditure government imposes taxes on production units and households. It may also have other sources of finance. Government may also give subsidies to production units.

The prefix 'general' in general government' signifies that we are taking government as a consumer only. Government as owner of production units is treated as part of production unit sector.

v) **Rest of the World**

It includes all non-residents, that is, outsiders, engaged in economic transactions with residents of a nation. Exports and imports are the main transactions with earning and spending of income. Production units sell exports to and buy imports from the rest of the world. In national income accounting all exports and imports are routed through the production units sector.

2.9 CIRCULAR FLOW OF ECONOMIC ACTIVITIES

The main focus in national income accounting is on production units because national income is created in these units. All the angles of looking at the flow of national income either originate from or terminate at production units. Each transactor group, including production units, has a two-way economic relationship with production units (PUs). The two way-relationship is in terms of buying and selling or payments and receipts arising out of production activity.

Each sector has a two way economic relationship with PUs. Each sector, including PU, receives from and pays to PU. These relationships are summarised as follows:

- 1) PU receives payment for materials, services and capital good sold to PU. Sales of materials and services to PU are called sales of 'intermediate products'. Sales of capital goods are the sales of investment goods.
- 2) PU makes payments for purchases of materials, services and capital goods purchased from PU. Purchases of materials and services from PU is termed intermediate costs. Purchases of capital goods is termed as capital formation or investment.
- 3) PU pays to household (HH) for the factor services. These payments are in the form of wages, rent, interest and profits and called factor costs. From the angle of HH these are factor incomes.

- 4) PU receives payments from HH for the goods and services sold. It is households' consumption expenditure.
- 5) PU receives payments from NPISH for the goods and services sold. It is consumption expenditure of NPISH.
- 6) PU pays production taxes to general government. These taxes are in the form of excise duty, sales tax, custom, octroi, license fees, etc. All such taxes on production are called indirect taxes.
- 7) PU receives payments from general government (GG) on two counts. It receives payments from GG for the goods and services sold. For GG it is government's consumption expenditure. Second, PU receives subsidies from GG. The subsidy is given to induce the PU to sell particular products at a price lower than cost or lower than what is warranted by market conditions.
- 8) PU receives payments from the Rest of the World (RW) for the goods and services sold to the RW. These are exports of the PU.
- 9) PU makes payment to the RW for the goods and services bought. These are imports of the PU.

2.10 INCOME GENERATION

The flows described above are income generated flows affecting income generation, one way or the other. The full relevance of these flows would be clear in Unit-4 where methods of measurement of national income are explained. Here we will describe their relevance in brief.

There are three angle of looking at the flow of national income. These are production, income distribution and expenditure angles. All the flows of payments except subsidies into production units represent payment for the output sold by the production units. These flows are helpful in measuring the value of output produced by production units and, therefore, relevant in production angle.

From amongst the flows out of production units the flows of factor payments represent income distribution activity of production units. These flows form the basis of the income distribution angle.

Expenditure angle is simply the other side of coin of the production angle. The expenditure angle looks at the output from the buyer's angle while the production angle looks at it from the seller's angle. All the flows of payments to production units are expenditures for different sectors and sales for the production units.

Check Your Progress 3

- 1) Name the three consumer transactor groups in a country.

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- 2) Choose the correct alternative.
- A) The main focus in national income accounting is on:
- a) Production units
 - b) Consuming units
 - c) Investing units
 - d) None of the above.
- B) Flows of factor payments form the basis of the following angle of looking at national income
- a) Production angle
 - b) Income distribution angle
 - c) Expenditure angle
 - d) All the above three angles
- C) Factor services are rendered by:
- a) General government
 - b) Non-profit institutions serving households
 - c) Households
 - d) Production units

2.11 LET US SUM UP

For any activity to be classified as economic activity it is necessary to pass two tests: (1) The activity results from the use of scarce resources and (2) output of the activity is capable of being assigned a price. There are three basic economic activities: that of production, consumption and investment. Production is deemed to be a process concerned with creation of utilities having economic values. There are three concepts of production: (1) Comprehensive (2) Restricted material and (3) Restricted market. Comprehensive production concept is based on four criteria: A good or service must be (a) created by human labour and capital, (b) capable of satisfying human wants, (c) comparatively scarce and need to be economised, and (d) has a definite monetary price of cost or can be given one by imputation. Restricted material concept includes only saleable material goods and the services that helps to complete the utility of these material goods. Restricted market concept includes only those products that pass through the market and whose value is determined by free interplay of the forces of demand and supply. **Comprehensive Production** concept and **Restricted Material** concept are used respectively in capitalist and socialist countries.

Consumption activity is the activity leading to the satisfaction of wants. There are three sources of consumption expenditure in a country: (a) Households (b) Private non-profit institutions servicing households, and (c) General government. Goods used for consumption are classified into single use and durable use goods. Single use goods are used in a single act. Durable use goods are used again and again. In accounting durable use goods are taken to be consumed in the year of purchase.

Addition to the stock of capital goods during a year is called investment. It also equals to excess of production over consumption. Gross investment is

measured without taking into account consumption of fixed capital. By deducting consumption of fixed capital from gross investment we get net investment.

Production, consumption and investment are related in two ways. First, since production equals consumption plus investment, therefore, if we know any two of these we can get the values of the third. Second, the three activities influence each other. For example, more production may mean more consumption and investment.

Transactors performing economic activities are broadly classified into: (1) Production Units, (2) Consumer Households, (3) Private non-profit institutions serving households, (4) General government and (5) Rest of the world. The main focus in national income accounting is on production units because all the angles of looking at the flow of national income either originate from or terminate at production units. The economic activities flows among these transactors are income generating flows. National income from different angles can be calculated from these flows.

2.12 KEY WORDS

Consumption	: Using up of goods and services for satisfaction of wants.
Investment	: The act of adding to the stock of capital.
Non-profit Institutions	: Production units producing services supplied either free or at a price having no relation with cost.
Production	: A process concerned with creation of utilities having economic values.
Production unit	: A unit of production formed when the owners of factors of production join hands to produce a commodity.

2.13 SOME USEFUL BOOKS

- Abraham, W.I. (1969), *National Income and Economic Accounting*, Prentice Hall, New Jersey.
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- Ruggles, R and Ruggles, N.D. (1956), *National Income Accounts and Income Analysis*, McGraw Hill, New York.
- Studenski, Paul (1958), *The Income of Nations*, Part-II, New York University Press, New York.

2.14 ANSWERS OR HINTS TO CHECK YOUR PROGRESS EXERCISES

Check Your Progress 1

- 1) Any activity concerned with production and use of production for consumption and investment is an economic activity.
- 2) The two criteria are: (a) Good or service must be produced by scarce resources and (b) goods or services must command a price in the market.
- 3) The modified criterion is that (a) the activity results from the use of scarce resources and (b) the output of activity is capable of being assigned a price.

Check Your Progress 2

- 1) Production is a process concerned with creation of utilities having economic values.
- 2) The goods or services is (a) created by human labour and capital, (b) capable of satisfying human wants, (c) comparatively scarce and need to be economised and (d) either has a definite monetary price or cost or can be given one by imputation.
- 3) a) Excess of production over consumption.
b) Addition made to total capital stock of a country during a year.

Check Your Progress 3

- 1) (a) Households (b) Private non-profit institutions serving households and (c) general government
- 2) a) Production units
b) Income distribution angle
c) Households.

UNIT 3 THE PRODUCTION PROCESS

Structure

- 3.0 Objectives
- 3.1 Introduction
- 3.2 Purchases by a Production Unit
- 3.3 Accounting Statements of a Production Unit
- 3.4 Intermediate Products
- 3.5 Final Products
- 3.6 Intermediate vs Final Products: Some Precautions
- 3.7 Compositions of Income Account
 - 3.7.1 Credits (Receivable) Side
 - 3.7.2 Debits (Payable) Side
- 3.8 Value Added by a Production Unit
 - 3.8.1 Value Added Defined Generally
 - 3.8.2 Specific Measures of Value Added
 - 3.8.3 Different Measures of Value Added
- 3.9 Deriving Value Added Account of a Production Unit
 - 3.9.1 Income Account of a Production Unit
 - 3.9.2 Production Account of a Production Unit
 - 3.9.3 Value Added Account of a Production Unit
- 3.10 Value Added and Income Generation
- 3.11 Let Us Sum Up
- 3.12 Key Words
- 3.13 Some Useful Books
- 3.14 Answers or Hints to Check Your Progress Exercises

3.0 OBJECTIVES

After going through this unit, you would be able to :

- classify different purchases by a production unit into investment, intermediate costs and factor costs;
- define the concepts of intermediate and final products;
- describe the composition of income account of a production unit;
- explain the concept and measures of value added;
- derive value added account from income account of a production unit; and
- explain relation between value added and income generations.

3.1 INTRODUCTION

The main focus in national income accounting is on production unit. This aspect we have already emphasized in the last unit. We had also noted income-generating flows between different transactor groups on the one hand and production units on the other. Which of these flows are relevant from which angle of national income ? What combination of these flows gives the national income? This unit attempts to answer some of these and similar questions. Since the main focus is on production units and since the national income originates from, and terminates at production units this unit ultimately aims at highlighting the contribution of a production unit to national income. The national income accounting term for such a contribution is 'Value added'. As such the main emphasis in this unit is on value added by a production unit and its relevance in estimating national income. The different methods of estimating national income are explained in detail in the next unit.

3.2 PURCHASES BY A PRODUCTION UNIT

A production unit buys many goods and services to carry out its activities. An understanding of these purchases would be of great help in understanding national income accounting terms based on these purchases.

We take the example of a production unit engaged in producing garments. It makes three types of purchases. In the first type we take purchases which are required to establish the unit. The unit requires building, machines, furniture, transport vehicles, and other necessary fixtures and equipment. These goods are required before any production of garments is commenced. Such goods are called fixed capital assets in business accounts and 'capital formation' in national income accounting as we have noted in Unit 2.

From where does our garment unit purchases these assets ? Obviously it purchases these assets from other production units. For what purpose? For own-use or for reselling? The answer is 'for own use'. The purpose is to produce garments by using these assets and not further reselling these assets. When the unit sells garments the cost of fixed capital assets is not included in cost of producing garments. What is included is only the value of depreciation or consumption of fixed capital but not the whole cost of these assets. The point to emphasise here is that a production unit purchases fixed capital assets for own use and not for reselling. This point is very important in distinguishing various types of purchases by a production unit.

The second type of purchases includes clothes, thread buttons, needles, stickers, packing materials, electricity, water services of fashion designing agencies, services of advertising agencies and advertising mediums, etc. These goods and services are also purchases from other production units. We can label all such purchases as 'materials and services purchased from other production units'. For what purpose? The purpose is to convert these materials and services into garments. When the unit sells garments it actually sells (or resells) all the materials and services purchased from other production units. There are two points to be emphasized here. First, the purchases are made from other production units. Second, the purchases are made for resale.

Before we take up third type of purchases let us first note down the similarity and the dissimilarity in the first two types of purchases. The Similarity is that

both purchases are made from other production units. The dissimilarity is that fixed capital assets are purchased for own use while materials and services are purchased for resale. This dissimilarity is the basis of distinction between the two types of purchases. The technical names by which these two purchases are differentiated in national income accounting are 'final purchases' and 'intermediate purchases', respectively. The products so purchases so purchases are called 'final products' and 'intermediate products'. Goods purchased by a production unit from other production units for own use are final products. Goods and services purchased by a production units from other production units for resale are intermediate products. We will come back to the systematic definition of these two terms a little later in this unit (Sections 3.4 and 3.5). Let us first explain the third type of purchases.

In addition to the above two types of purchases what else does our garment unit requires for production ? It requires land or a place, finance, workers and somebody to organize these three. It hires land by paying rent. It gets finance by paying interest. It hires workers by paying wages and salaries, etc. It employs (presumably) entrepreneur to organize and take initiative in starting a production unit. The entrepreneur provides service in expectation of profit. All such purchases are called purchases of factory services because these are provided by the owners of factors of production. In reality when these owners join hands in producing a good or a service, a production unit is formed. So these owners are necessarily the insiders as compared to the first two types of purchases which were from outsiders. This makes the third type of purchases distinct from the first two types of purchases. The third type of purchases are called purchases of factor services. The expenditure incurred on these is called 'factor cost'.

We have identified three types of purchases by a production unit. These are :

- 1) Final Purchases : Purchases of capital goods for own use.
- 2) Intermediate purchases: Purchases of materials and services meant for resale from other production units.
- 3) Factor services purchases: Purchases of factor services from factor owners.

The costs incurred on the above purchases are respectively:

- 1) Investment or capital formation.
- 2) Intermediate costs.
- 3) Factor cost.

3.3 ACCOUNTING STATEMENTS OF A PRODUCTION UNIT

The information about the various types of purchases made by a production unit is found in the two accounting statements a unit normally prepares. The statements are Income Statement and Balance Sheet. The Income Statement is also known as profit and Loss Account Statement. The Income statement records income position while the Balance Sheet shows capital position of the production unit. The Income Statement records the current years production activity of the production unit. The Balance Sheet records the investment activity of all the previous years as well as the current year.

Out of the three types of costs, intermediate costs and factor costs relate to the current production activity and so recorded in the income Statement. Investment or capital formation is recorded in the Balance Sheet. The accounting statement relevant for calculating value added is income statement. A simplified format of the Income Statement (or Profit and Loss Account) of a production unit is given below (Table: 3.1)

Table 3.1: Income Statement of ABC & Co. for the year 2004-05

(Rs.Lakhs)	
Debits (Payable)	Credits (Receivable)
Opening Stock	Sales
Purchases	Closing Stock
Depreciation Provision	Dividends received
Excise duty	Rent received
Wages and Salaries	Interest received
Rent Paid	Subsidies received
Interest Paid	
Corporate tax	
Dividends paid	
Retained earnings	
Total payables	Total receivables

The above statement will be helpful in identifying intermediate costs and factor costs.

We can now proceed to explain the concept of intermediate products.

Check Your Progress 1

- 1) List the accounting statements of a production unit which record different types of purchases.

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- 2) A production unit buys a machine, consults an expert, employs an engineer. Classify these purchases into different types.

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3.4 INTERMEDIATE PRODUCTS

All goods and services purchased by a production unit from other production unit for resale are termed as intermediate products. The expenditure incurred on these is intermediate cost. Two qualifications are necessary for purchase of any good or service to be included in the category of intermediate products. These are:

- 1) The good or service is purchased from other production units.
- 2) The good or service is meant for resale.

Take, for example a farming unit. Seeds, fertilizers, pesticides, electricity, water, etc. are its intermediate purchases. In case of a manufacturing unit raw materials, electricity, water, constancy service, etc. are intermediate purchases. In case of trading unit goods purchased for resale, packing material, advertisement, etc. are all intermediate purchases.

Pick up any purchase by a production unit and apply the above two tests and you can know whether the purchase is intermediate cost or not. Take, for example, payment of wages by a production unit. It is a purchase by a production unit alright but not from another production unit. A worker is not a production unit so it is not an intermediate cost. What is the payment of consultancy fees to a chartered account firm ? It is an intermediate cost because chartered accountant firm is a production unit. If the production unit employs its own chartered accountant on payment of salary it is not intermediate cost because here the chartered accountant is not a production unit but an employee.

All intermediate costs are included in the current cost of production. This act of inclusion in current cost amounts to reselling of intermediate products. We are studying the concept of intermediate products in the context of value added by a production unit. Intermediate products are purchased from other production units. So these are the contributions of other production units and not of the given production unit. This fact must be kept in mind while estimating 'value added.' We are interested only in the contribution of the given production unit. The item 'purchase' on the debit side in the above format (Table 3.1) of Income Statement is essentially the intermediate cost of ABC & CO.

3.5 FINAL PRODUCTS

It is the resale criteria which separated intermediate products from final products. All purchases not meant for resale are the purchases of final products. Who purchases final products ? Both consumers and production unit. Consumers purchase for satisfaction of wants. Production units for investment, for example, machines, buildings and other permanent fixtures. Purchases of final products by production units are not recorded in the Income Account because these are not included in current cost. These are included in the capital cost (only the depreciation part is included in current cost). As such these purchases are not meant for resale but for 'own use' as investment by a production unit. Purchases by consumers are also not meant for resale but for 'own use'.

On the basis of the above we can now define final products in more concrete terms : **All goods and services purchased for investment and consumption**

(and not for resale) are final products. Remember purchases by consumers are not the final purchases only. Purchases of investment goods by production units are also final purchases.

3.6 INTERMEDIATE VS FINAL PRODUCTS : SOME PRECAUTIONS

While identifying a good (or a service) as intermediate or final, a student must keep in mind the following. First, it is not the nature but the use that determines whether a good or a service is intermediate or final. For example, a food item may give the impression as if it is purchased only by consumers. The temptation is to treat all food items such as wheat, rice, vegetables, pulses, spices, etc. as final products on the assumption that these are purchased by consumers only. But when food items are purchases by production units like hotels, restaurants, fast food centres, vegetables vendors, canteens, etc. these are to be treated as intermediate products because these are purchased for reselling in the form of cooked food.

Second, not all products purchased by production units are intermediate products. Production units purchase both intermediate products and final products. All purchases of single-use goods like materials and services from other production units are purchases of intermediate products while purchases of durable use goods, i.e. fixed capital goods, are purchases of final products.

Third, final products are purchased both by consumers and production units.

The general impression might be that final products are purchased by consumers only.

3.7 COMPOSITION OF INCOME ACCOUNT

A highly simplified format of Income Account of production unit has been given above (Table 3.1). This account is a source of data for calculating value added. Let us now explain the structure of this account.

3.7.1 Credit (Receivable) Side

The first item on the credit side is 'sales'. It is the value of output sold during the year. Remember it is not the value of output produced but sold. Actual sales may be 'less than' or 'greater than' output. If sales are less than output it means that some part of the current output has remained unsold. How is this unsold output accounted ? It becomes a part of the closing stock or the stock that exists at the end of the year. If sales are more than the output it means that the whole of output produced in the current year has been sold and in addition a portion of the unsold of the previous years has also been sold. This reduces the closing stock.

The next item is 'closing stock'. It refers to the value of the stock of materials, semi-finished goods and finished goods lying with the production unit at the end of the year. Suppose we refer to the year 2004-2005 starting on 1st April 2004 and ending in 31st March 2005. Then closing stock is the stock on 31st March 2005. This included unsold output of the previous years as well as the current year. Only the unsold output of current year is relevant for estimating value added.

The next group of items comprises of interest, dividends, rent, subsidies, etc. received by a production unit. It receives interest on money lent, rent or land, dividends on investment of funds in other production units. It may receive subsidy on current output from government.

For calculating value added we can classify the receivables of a production unit into two groups: (1) Those connected with current production activity of its own and (2) Those which are not. In the first group are covered the sales, closing stock and subsidies. In the second group are covered the rest i.e. dividends, rent and interest etc. received. The second group items relate to production activity of 'other' production units and are not relevant for calculating value added of the given production unit. Only first group items are relevant.

3.7.2 Debit (Payables) Side

The first item is 'opening stock'. It refers to the stock of material semi-finished goods and finished goods lying with the production unit at the beginning of the year, say on 1st April 2004 of the year 2004-05. This was also the closing stock of the previous year 2003-04 i.e. On 31st March 2004 where it was treated as receivable. Why is the value of opening stock treated as 'payable'? From whom does the production unit buy this opening stock? In accounting it is assumed that production unit purchases the entire of its own closing stock of previous year. So it is recorded as payable of the current year.

The next item is 'purchase'. It refers to purchases of materials and services from other production units. It is purchase of intermediate products and the expenditure on these is intermediate costs. The production unit starts its operations on the basis of opening stock and new purchases in the current year.

'Depreciation provision' is the estimated value of consumption of fixed capital. Excise duty is a tax on manufacturing and is classed as indirect tax. All taxes on production like excise duty, sales tax, customs octroi, etc. are indirect taxes.

Payables in the form of wages and salaries, rent, interest and profits are factor payments. The sum of corporate tax, dividends paid and retained earnings equal profits. These are the items in which profit is allocated. Corporate (income) tax is tax on profits of production units. Remember it is an income tax on production units and not on its owners. The owners are taxed separately when they actually receive dividends from production units. It is called personal income tax. The Income Account of a production unit records only corporate tax. Dividend payment is another use of profits of a production unit. Retained earnings are that part of profits, which are not distributed among the owners but retained in the production unit itself.

Check Your Progress 2

- 1) Define intermediate products.

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- 2) Define final products.

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- 3) List different types of factor payments by a production unit.

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3.8 VALUE ADDED BY A PRODUCTION UNIT

Income Accounting is the source of data for calculating value added. The composition of the account is explained above. Let us now explain its relevance in calculating value added.

3.8.1 Value Added Defined Generally

Is the current output of a production unit is entirely its own contribution ? No. To produce this output the production unit purchases materials and services i.e. intermediate products. The contribution of production unit is reduced by intermediate purchases. Intermediate products are the contributions of 'other production units' and not of the given production unit. So,

$$\begin{aligned} \text{Value added by a production unit} &= \text{Value of output} \\ &- \text{Purchases of intermediate products} \end{aligned}$$

3.8.2 Specific Measures of Value Added

The general meaning of value added as given above is termed as Gross Value Added at Market Price (GVAmP) in national income accounting.

$$\text{GVAmP} = \text{Value of output} - \text{Intermediate costs}$$

The subscripts 'gross' and 'market prices' give a specific meaning to GVAmP. 'Gross' indicates that the measure is gross of consumption of fixed capital; and no deduction is made on this account. 'Market price' indicates that the output is valued at the price paid by the buyers. It is measure from the buyers side.

3.8.3 Different Measures of Value Added

Factors owners are synonymous with a production unit. Value added by a production unit is value added by the four factors jointly. But factor owners do not have a claim on the entire GVAmP. Depreciation and indirect taxes do not belong to factor owners. Factor owners get only what is left over after deducting depreciation and indirect taxes from GVAmP. It has led to two more measures of value added. Before we take up the additional measures it is necessary to

mention one more adjustment. A production unit may get subsidy on its current output. Subsidy adds to receipts and is in addition to GVamp. Subsidy has the effect opposite that of indirect tax. Subsidy increases the claims of factor owners while the indirect tax reduces the same. The net effect is indirect tax less subsidies. So in order to arrive at value added at factor cost (GVAfc), from GVAamp we deduct net indirect taxes. (= indirect taxes – subsidies)

The two additional measures, in addition to GVamp, are Net Value Added Market Price (NVamp) and Net Value Added at Factor Cost (NVAfc). These are derived as follows:

$$\text{NVamp} = \text{GVamp} - \text{depreciation}$$

$$\text{NVAfc} = \text{NVamp} - \text{indirect taxes} + \text{subsidies}$$

3.9 DERIVING VALUE ADDED ACCOUNT OF A PRODUCTION UNIT

3.9.1 Income Account of a Production Unit

We are now familiar with specific and technical measures of value added. We know that the main sources of data for national income accounting is the Income Account. Let us now explain how we can derive these value added from the income account of a production unit. We now attach imaginary figures to our simplified format of the Income Account of ABC + Co.

Table 3.2: Income Account of ABC & Co. for the year 2004-05

Debits (Payable)		Credits (Receivable)	
Opening stock	10	Sales	500
Purchases	200	Closing stock	20
Depreciation provision	20	Subsidies	10
Indirect taxes	40	Dividends received	30
Wages and salaries	100	Interest received	25
Rent paid	30	Rent received	15
Interest paid	80		
Corporation tax	40		
Dividends paid	60		
Retained profits	20		
Total	600	Total	600

3.9.2 Production Account of a Production Unit

The above account (Table 3.2) is essentially a sales plus other income account. What we need is an output or production account. For this we have to make certain modifications in the Income Account. The First variable required to calculate value added is the value of output. Output equals sales plus unsold output. The unsold output is added to the closing stock. The excess of closing stock over opening stock equals addition to stocks So,

$$\text{Value of Output} = \text{Sales} + \text{Closing stock} - \text{Opening stock}$$

We can derive Production Account from the Income Account by making two sets of modifications :

- 1) Transfer opening stock from debit side to the credit side with sign reversed.
- 2) Transfer subsidies, dividends, interest and rent received from credit side to the debit side as negative payments and adjust with their counter parts on the debit side. If no counterpart exists the same may simply be recorded as negative payments. For example deduct rent received from rent paid and record the outcome as rent paid. Similarly the items net interest paid and net dividends paid can be recorded. Subsidies are adjust with indirect taxes and the outcome recorded as net indirect taxes paid. These adjustments are made to separate production activity of ABC & Co. from its other sources of income.

The production Account derived after making the two adjustment is given in Table 3.3.

Table 3.3: Production Account of ABC & CO, for the 2004-05

Debits (Payable)		Credits (Receivable)	
Net indirect taxes (40-10)	30	Sales	500
Depreciation	20	Closing stock	20
Purchases	200	Less Opening stock	10
Wages and salaries	100		
Net rent paid (30-15)	15		
Net interest paid (80-25)	55		
Corporate tax	40		
Net dividends paid (60-30)	30		
Retained profits	20		
Allocation of value of output	510	Value of output	510

The above account (Table 3.3) now records value of output (credit side) and the various cost incurred (debit side) on producing this output. All the variables required for calculating value added are now clearly indicated in the above account.

3.9.3 Value Added Account of a Production Unit

The Production Account now can be conveniently converted into Value Added Account by transferring the relevant variables from the debit side to the credit side with signs reversed as is done in Table 3.4

Table 3.4: Value Added Account of ABC & Co. for the year 2004-05

Debits (Payables)		Credits (Receivables)	
Wages and salaries	100	Sales	500
Net rent paid	55	Closing stock	20
Corporate tax	40	Less Opening stock	10
Net dividends paid (60-30)	30	= Value of output	510
Retained profits	20	Less Purchases	200
		= GVamp	310
		Less Depreciation	20
		=NVamp	290
		Less Net indirect taxes	30
Allocation of value added	260	= NVAFe	260

The credit side of the above account (Table 3.4) records NVAfc which is a measure of contribution of ABC & Co. to national income. The debit side records the allocation of NVAfc among the factor owners jointly contributing to NVAfc.

3.10 VALUE ADDED AND INCOME GENERATION

NVAfc measure income generated by a production unit. The sum total of NVAfc by all the production units located within the economic (domestic) territory is called Net Domestic Product at Factor Cost (NDPfc). NDPfc is the major constituent of national income. By adding Net Factor Income Received from Abroad (NFIA) to NDPfc we get National Income which is technically called Net National Product at Factor Cost (NNPfc). The relationship between different measures of value added and different aggregates relating to national income is given below.

$$\begin{aligned}\sum \text{GVamp} + \text{NFIA} &= \text{GNPmp} \\ \sum \text{NVamp} + \text{NFIA} &= \text{NNPmp} \\ \sum \text{NVAfc} + \text{NFIA} &= \text{NNPfc}\end{aligned}$$

National income is generated by the factor owners. So it is distributed among factor owners in the form of wages and salaries, rent, interest and profits. The profit is allocated among corporation tax, dividends and retained profits.

As we shall see in the next unit the credit side and debit side of the Value Added Account are nothing but the summarized methods of estimating national income through 'production' and 'income-distribution' approaches.

Check Your Progress 3

- 1) Why is GVamp called 'gross' ?

2) Why is NVA_{fc} called 'at factor cost' ?

3) What is sum of NVA_{fc} by all production units in a country called ? Is it national income.

3.11 LET US SUM UP

Any production process requires three types of purchases to be made by a production unit. The first type includes purchases of capital goods called purchases of final products. The second type includes purchases of intermediate products. The third type includes purchases of the services of factors of production from factor owners. The costs incurred on these purchases are respectively investment, intermediate costs and factor costs. Expenditure on investments is recorded in the Balance Sheet while intermediate and factor costs are recorded in the Income Statement of a production unit.

Intermediate products include those goods and services which are purchased by a production unit from other production units and meant for resale. Final products are those goods and services which are purchased for consumption (by consumers) and investment (by production units) and not meant for resale. The distinction is important in understanding the concept of value added.

Income Account of a production unit is the source of a data for estimating value added. The excess of value of output over intermediate costs is equal added. The measure so derived is termed as Gross Value Added at Market Prices (GV_{amp}). The subscript 'gross' indicates that the measure is gross of depreciation. Market price indicates that the measure is gross of net indirect taxes (= indirect tax less subsidies). By subtracting depreciation from GV_{amp} we get Net Value Added at Market Price (NV_{amp}). By subtracting net indirect taxes from NV_{amp} we get NVA at factor cost (NVA_{fc}). The sum NVA_{fc} by all production units plus net factor income received from abroad equals national income.

The Income Account of a Production unit can be converted into a value added account by making suitable modifications (Table 3.4). The credit side of value Added Account records NVAfc or the contribution of production unit to national income. The debit side records allocation of NVAfc among the factor owners as factor owners who generate income.

3.12 KEY WORDS

Factor Cost	: Cost incurred on employment of factors of production in the form of wages and salaries, rent, interest and profit.
Final Products	: Goods and services purchased for consumption (by consumers) and for investment (by production units) meant for 'own use' and not for resale.
Income Statement	: Profit and loss account of a production unit.
Intermediate Products	: Goods and services purchased by a production unit from other production units and meant for resale directly or indirectly.
Value Added	: Measure of contribution of a production unit to National income. It equals value of output less intermediate costs.

3.13 SOME USEFUL BOOKS

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3.14 ANSWERS OR HINTS TO CHECK YOUR PROGRESS EXERCISES

Check Your Progress 1

- 1) a) Income Account records intermediate purchases and purchase factor services.
- b) Balance sheet records investment.

- 2) a) Purchase of machine is a final purchase because it is meant for investment.
- b) Purchase of services of a consultant is an intermediate purchase because it is a purchase from other production units and meant for resale.
- c) Employing an engineer is a purchase of factor service because the employed Engineer is paid salary.

Check Your Progress 2

- 1) The goods and services purchased by one production unit from other production units and meant for resale are intermediate products.
- 2) The goods and services purchased for consumption (by consumers) and for investment (by production units and not meant for resale are final products.
- 3) a) Wages and salaries
- b) Rent
- c) Interest
- d) Profits

Check Your Progress 3

- 1) GVAmP is called 'gross' because depreciation has not been deducted from this measure.
- 2) NVAfc is called 'at factor cost' because it is derived after deducting 'net indirect tax' from market price'. Net indirect tax is that element of market price, which is not available for distribution among factor owners.
- 3) It is called ANAet Domestic Product at Factor Cost. It is not national Income. By adding Net factor Income Received From Abroad to NDPfc we can get measure of national income.