UNIT 1 NATIONAL INCOME AND THE ECONOMY

Structure

1.0 OBJECTIVES

This unit aims to familiarise you with basic features of an economy and the main indicators about its performance.

After going through this lesson you would be able to:

- explain the concept of an economy;
- define national income, discuss its relevance to the study of various aspects of the economy, and describe its various uses; and
- list some fundamental questions about an economy, and the welfare and standard of living of its people.

1.1 INTRODUCTION

Of what relevance is the study of national income in the context of an economy? This is what the unit attempts to answer. Before we make such an attempt, it is necessary that we first familiarise ourselves with, and understand the concepts of, national income and the economy. The two concepts are now frequently used by most governments in their economic policy statements. We will first explain the meaning of an economy.

1.2 MEANING OF AN ECONOMY

The term "economy" has many dimensions. It may refer to a region of a country, the entire country itself or the whole world. For example, we can talk about Haryana's economy, the Indian economy, the Asian economy, the European economy or the World economy. In this unit we will confine the dimensions of an economy to a country.

An economy of a country refers to the economic aspects of a country. And what are these economic activities? Production, consumption and investment are the three basic economic activities the residents of a country perform. As such, a study of an economy is the study of production, consumption and investment taking place in that economy.

Production activities are carried out in farms, in factories, shops, banks, hospitals, schools, colleges, railways, airlines, ships, government offices, charitable institutions, and so on. All these are called production units.

Consumption activities are carried out at homes and by the government. At homes it is carried out by households who spend on food, clothing, housing, furniture, electrical appliances, etc. The main motive is the satisfaction of wants of the members of the family. The government spends on consumption on behalf of the people. It buys goods and services from production units to provide services, which are sometimes free, to people. Government spends on hospitals, schools, colleges, police, military, legislatures and other public utility services to the people. Purchases for consumption both by households and governments are made from production units.

Investment activities are undertaken in production units. All purchases of goods like machines, buildings, furniture, etc. and expenditure on keeping stocks of raw materials, semi-finished and finished goods, etc. during a year are expenditure on investments. Any expenditure that adds to capital assets of a production unit is treated as investment. These purchases are also made from production units.

A study of production, consumption and investment activities carried out by people and institution in a country is the study of economy of that country.

Conceptually, a distinction is made between a closed economy and an open economy. A closed economy is one which has no economic relations with the rest of the world. It is closed to the rest of the world. An open economy is one which has economic relations with the rest of the world. It is open to the rest of the world. Indian economy is an open economy. India is engaged in exports, imports, borrowing, lending, etc activities with other countries. Like India, nearly all the economies of the world are open economies. At present, it is difficult to find an example of a closed economy.

1.3 MEANING OF NATIONAL INCOME

National income of a country is the sum of incomes earned by its residents from the factor services rendered to the production units both within and outside the geographical boundaries of the country.

The term 'national' here refers to 'of residents' and the term income refers to

'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 enterprenuership 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 Territary 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 :

$$\text{Rate of growth} = \frac{\textit{Change in National Income at constant prices during a year}}{\textit{National Income at Constant prices during the previous year}} \times 100$$

$$= \frac{60 \times 100}{1000} = 6\%$$

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')

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

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 is 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 an 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) Bylooking 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

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 population 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 loose their identify 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

Investment = Production – 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 exits 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.

Investment = Capital stock at the end of the year – Capital stock at the beginning of the year

= 1100 crores – 1000 crores

= Rs.100 crores

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.

Net Investment = Gross investment – 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 other. 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.

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

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

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

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

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

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 top 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 thus 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 charted account firm ? It is an intermediate cost because charted accountant firm is a production unit. If the production unit employs its own charted accountant on payment of salary it is not intermediate cost because here the charted 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 (Table3.1) 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 pur4chases 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^{t} April 2004 and ending in 31st^{t} March 2005. Then closing stock is the stock on 31st^{t} 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, subsides, 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 received 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 begining 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 buys this opening stock ? In accounting it is assumed that production unit purchases the entire of its won 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 octori, 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 q 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,

Value added by a production unit = Value of output
– Purchases of intermediate products

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.

GVAmp = Value of output – 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:

NVAmp = GVAmp – depreciation

NVAfc = NVAmp – indirect taxes + 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,

Value of Output = Sales + Closing stock – 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.

$$\sum \text{GVAmp} + \text{NFIA} = \text{GNP mp}$$

$$\sum \text{NVAmp} + \text{NFIA} = \text{NNP mp}$$

$$\sum \text{NVAfc} + \text{NFIA} = \text{NNP fc}$$

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' ?

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2) Why is NVAfc called 'at factor cost' ?

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

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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 under standing 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 (GVAmp). 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 GVAmp we get Net Value Added at Market Price (NVAmp). By subtracting net indirect taxes from NVAmp we get NVA at factor cost (NVAfc). The sum NVAfc 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

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

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

Backerman, W. (1976*) An Introduction to National Income Analysis*, Macmillan, London.

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

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

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.

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.

UNIT 4 CONCEPT AND MEASUREMENT OF NATIONAL INCOME

Structure

4.0 OBJECTIVES

This unit aims at discussing various methods of estimating national income and related aggregates. For that the unit discusses the basic concepts that are used in defining and distinguishing among various aggregate measures of economic activity.

After going through this Unit you would be able to:

- explain the meaning of economic territory;
- define a resident unit;
- define the term ‘factor income’;
- explain the meaning of national income at constant price;
- describe the production, income, and expenditure methods of estimating national income; and
- explain the considerations involved in choosing a method.

4.1 INTRODUCTION

In the three earlier units, you have been acquainted with the meaning of national income, the circular flow of income in an economy, the basic concepts of consumption, saving and investment, and also with production— both intermediate and final — and finally, with value added. In this unit we take a closer and more detailed look at what constitutes national income and what the concept means. National income of a country equals the sum total of factor incomes accruing to the residents of economic territory of that country. This meaning of national income requires familiarity with at least three terms: (1) Economic territory, (2) Residents, (3) Factor incomes. Let us explain these terms.

4.2 SOME BASIC CONCEPTS

4.2.1 Economic Territory

You must be familiar with the term geographical territory that is defined strictly on the basis of political boundaries of a country. Economic territory is derived from physical territory but on economic basis. It crosses marginally the political frontiers of a country. In nutshell, the concept of economic territory is carved out of geographical territory by adding some portions of the rest of the world and by subtracting some portions of geographical territory. This addition and subtraction is made strictly on the basis of some well defined economic criterion. We are taking here the criterion laid down in the System of National Accounts (SNA) developed by the United Nations. We will have occasion to study the SNA in greater detail a little ahead in the course.

According to the SNA, the economic territory of a country consists of geographical territory administrated by a government within which persons, goods and capital circulate freely. It includes: (a) the airspace, territorial waters, and continental shelf lying in the international waters over which the country enjoys exclusive rights; (b) territorial enclaves in the rest of the world such as embassies, consultants, military basis, etc. and (c) any free zones, or bonded warehouses or factories operated by offshore enterprises under customs control. It does not include (a) territorial enclaves used by foreign governments such as foreign embassies, foreign consultants, etc. and (b) international organizations.

The implications of the above can be explained with the help of an illustration. To take an example, consider the British High Commission in New Delhi. It is taken as part of British Economic Territory. All economic activities of the British High Commission are taken to be taking place in the economic territory of Britain and are accounted for in the Britain's GDP. Similarly all economic activities of Indian embassy in Washington are accounted for as part of India's GDP.

4.2.2 Resident

The term resident is different from the term citizen. Citizenship of a country is linked with birth or some other non-economic criterion. The term 'resident' on the other hand is linked strictly with economic criterion. Accounting to SNA, a resident unit is one whose center of economic interest lies in the

economic territory of the country in question. This unit may be an individual, a household, a government, a corporation, a non-profit institution etc.

By centre of economic interest is meant that the institutional unit is located within economic territory and carries out its economic activities and transactions on a significant scale over a long period of time from that location. As a working arrangement the term 'long period of time' is usually taken to mean a period of one year or more. On the basis the travellers or visitors who leave economic territory for less than one year continue to be resident of that economic territory. Similarly, workers working outside economic territory for a part of the year, border workers, locally recruited staff in international originations, in foreign embassies, staff working in ships, aircrafts etc operating on international routes are all residents. For example, an Indian resident working in British embassy remains Indian resident. A Briton posted in New Delhi office of the British Airways remains the British resident. The time period rule does not apply to students studying abroad, medical patients abroad even if they stay for more than one a year in foreign countries.

In SNA, the ownership of land and structure with the economic territory of a country is deemed to be sufficient in itself for the owner to have a center of economic interest in that country. Along with this the SNA has adopted the convention that all land and structures are owned by residents, actual or national. Let us explain the meaning of the term 'notional'. If a non-resident owns a building, the owner is treated as if he transferred his ownership to a notional institutional unit which is actually resident in that country. In this sense all production units within the economic territory are resident production units. But the factor services supplied to these units need not necessarily be supplied by the residents only. Non-residents may also supply factor services and claim in return the factor income. Similarly residents may also supply factor services to production units outside the economic territory and claim factor income in return.

The overall conclusion is simple. First, all factor payments (wages, rents, interest, profits, etc.) by the resident production units need not necessarily be made to the residents only. A part may be made to non-residents. Second, all factor incomes received by the residents need not necessarily be received from production units within the economic territory only but may be received also from outside the economic territory.

4.2.3 Factor Income

Conventionally, factors of production are classified into four groups viz. labour, land, capital and entrepreneurship. Labour includes all types of mental and physical efforts involved in production. Land includes all natural resources. Capital includes all physical assets used in production. The entrepreneurship implies the risk taking ability of the owners of production units.

The owners of factors of production sell their services, called factor services, to the production units. In turn, production units make payment for these services. These payments are called factor payments. These payments are termed as compensation of employees, rent, interest and profits. These are made respectively to the owners of labour, land, financial assets and entrepreneurship. The exact meaning and components of these factor payments are explained in section 4.3.4 below. These payments are the factor payments

or factor costs from the angle of production units but factor incomes to the owners of factors of production. In this way factor costs and factor incomes are same in national income accounting.

Broadly thus a factor income is the income received by a factor owner from rendering services to the production unit. Labour receives compensation of employees, i.e. wages, salaries, etc. Land owner receives rent. Capital owner, i.e. the one who provides finance, receives interest. The entrepreneurship, who is the owner of production unit, receives profit.

The sum total of factor payments made by resident production units of an economy territory is termed domestic income or technically, net domestic product at factor cost. The sum total of factor incomes received by the residents of an economic territory, both from with the economic territory and from the rest of the world, is called national income, or technically, **Net National Product at factor cost**.

4.2.4 Intermediate Consumption

We can explain this concept with the help of an example. A farmer producing grain buys seeds, fertilizers, power, water, pesticides, etc. from other production units. These inputs are entirely used up in the process of production and transformed into grain during the year. The consumption of such inputs in the process of production is termed as intermediate consumption. SNA defines intermediate consumption as the value of goods and services that are entirely used up in the course of production during the accounting period.

To classify the use of a good or service as intermediate consumption, two conditions must be fulfilled. First, it is purchased or acquired by a production unit from another production unit. Second, it is acquired for resale which amounts to being used up entirely in the course of production during the accounting period. For example, milk purchased by a restaurant, cloth purchased by a garment manufacturer, petrol purchased by a taxi driver, bricks purchased by a construction company, expenditure on repairs by a production unit, etc. are all intermediate consumption. Goods and services acquired for intermediate consumption are called intermediate products. Expenditure on intermediate products is called intermediate cost. This intermediate cost is a part of the price of the product produced from these.

4.2.5 Final Product

The concept of final product is opposite of the concept of intermediate product. Intermediate products are identified on the basis of 'resale' criterion. Final products are identified on the basis of 'not for resale' criterion. Goods and services acquired not for resale but for own use, are final products. When one acquires a good or a service for own use, the good or service in question is said to reach its final use. It implies that it is no more required to be processed or treaded further.

When a consumer acquires a good or a service, she acquires it for consumption, or to be more precise, for final consumption. When a production unit acquires a good, not for resale, it acquires the same for investment. For example, purchase of a machine for use in production by production unit is an investment (but purchase of raw materials is intermediate consumption). We can now

conveniently define final products. Goods and services acquired for final consumption and investment (and not for resale) are final products. For example, milk purchased by a household, cloth purchased by a household, motor vehicle purchased by a taxi driver, crane purchased by a construction company, refrigerator purchased by a restaurant are all final products.

4.2.6 Value Added

The concept has been explained in detail in Unit 3 section 3.8. Value added, gross value added at market price (GVA_{mp}) to be more specific, equals the excess of value of gross output over intermediate costs. The specific measures of value added are:

GVA_{mp} = Value of gross output minus Intermediate cost

NVA_{mp} (net value added at market prices) = GVA_{mp} minus Consumption of fixed capital

NVA_{fc} (net value added at factor cost) = NVA_{mp} minus Indirect taxes plus Subsidies

The above measures relate to one production unit. By summing up value added by all the production units located within an economic territory, we get different measures of domestic products.

ΣGVA_{mp} (where " denotes summation) = GDP_{mp} .

ΣNVA_{mp} = NDP_{mp}

ΣNVA_{fc} = NDP_{fc}

By adding net factor income received from abroad (NFIA) to the above measures we get measures of national product.

GDP_{mp} + NFIA = GNP_{mp}

NDP_{mp} + NFIA = NNP_{mp}

NDP_{fc} + NFIA = NNP_{fc}

NNP_{fc} is what we call national income. Our purpose in this lesson is to explain the different methods of estimating national income.

4.2.7 National Income at Constant Prices

Let us first try to understand the purpose behind introducing this concept. We try to understand the same first at micro level. Suppose an individual was earning money incomes of Rs,10,000 and Rs,20,000, respectively in the years 1995and 2005. It means that during the ten years the individual's money income has doubled. Further suppose that during this ten years period the average prices of goods and services he consumed also doubled. Where does this individual stand in 2005 as compared to 1995? What happened to his real position over these years? Since both money income and price level have doubled, the individual gets the same quantity of goods and services in 2005 as he got in 1995. It means that there is no change in his real income position with respect to the availability of goods and services. This real position is nothing but his real income. Over the 10 year period the individual's money

income doubled while his real income remained the same. So which is better, money income or real income, for comparing the performance of the individual? Clearly, real income is better. Money income may give a false picture. Money income and real income at the macro level are more appropriate termed as 'current prices' and 'constant prices' estimates of national income, respectively. For comparing the national income performance of the economy over the years only the constant price estimates are relevant.

Why do we call real income estimates as constant price estimates? National income from the production angle is a measure which is derived from the value of final products. The value of final products equals 'price x quantity' or 'PQ' . Therefore $\Sigma P_{95}Q_{95}$ and $\Sigma P_{2005}Q_{2005}$ would represent the national incomes of the year 1995 and 2005 respectively. Since these values are derived with the help of current year's prices (i.e. 1995 income at 1995 prices and 2005 income at 2005 prices), these measures are termed as current price measures. The two years are strictly not comparable because of the element of price change. To compare 1995 with 2005 we require both years national income to be expressed either at the prices of 1995 or at the prices of 2005. At the prices of 1995 it would mean $\Sigma P_{95}Q_{95}$ and $\Sigma P_{95}Q_{95}$. At the prices of 2005 it would mean $\Sigma P_{05}Q_{05}$ and $\Sigma P_{05}Q_{05}$. Such measures is called constant price measure because in this each year's national income is expressed at some single year's price.

There is a simple method of expressing current price estimates into constant price estimates. The entire exercise is known as the process of deflation. The technique used is that of price index number. There are many theoretical issues involved in applying this technique. We will not go into these issues. We will only describe the method.

Quantity wise and price wise different goods and services have different importance in national income. So, weighted price index, instead of un-weighted, is used to deflate national income. The simple most formula is:

$$\text{Constant Price Estimates} = \frac{\text{Current price estimates}}{\text{Current Year Price Index}} \times \text{Base year price index}$$

Example

Suppose following is known about an economy.

Year	National Income at Current Prices (Rs.crores)	Price Index
1995	1000	100
2005	2000	160

$$\text{2005 Constant Price Estimates} = \frac{\text{2005 Current Price Estimates}}{\text{2005 Price Index}} \times \text{Base Year's Price Index}$$

$$= \frac{2000}{160} \times 100$$

$$= \text{Rs.1250 crores}$$

Constant price estimate reveals that national income in real terms rose only by 25% (from 1000 to 1250). On the other hand current price estimates had indicated that national income rose by 100% (from 1000 to 2000). Thus current price estimate gives an inflated picture while the constant price estimate gives the real picture.

Check Your Progress 1

1) Who is called a resident unit?

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2) Tick the correct alternative.

Economic territory of a country:

a) Is same as geographical territory.

b) Is derived after subtracting some portions from geographical territory.

c) Is derived after adding some potions to geographical territory.

d) Is derived after adding and subtracting some portion to and from geographical territory.

3) Define intermediate consumption.

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4) A good or service is treated as a final product when acquired for :

a) For consumption only

b) For investment only

c) Both for consumption and investment

d) Neither for consumption nor for investment

4.3 METHODS OF ESTIMATING NATIONAL INCOME

4.3.1 Origin

Our aim is to estimate national income. It is defined as sum total of factor incomes accruing to the residents of economic territory of a country. From where do we get data about the same? We can get answer to this if we first answer these questions. Where are factor income generated? Who generates factor income? On what are incomes spent?

Factor incomes are generated in production units. These are generated by the factor owners hired by the production units. Factor owners in turn get factor incomes from production units. When we estimate national income by collecting data at the generation stage, the entire process of estimation is termed as production method. When we collect data when factor incomes are distributed among the factor owners, the process is termed as income – distribution method. When the data are collected, when income are being spent, the process is termed as expenditure method. Conventionally thus there are three methods of estimation national income.

4.3.2 Classification of Production Units

There are innumerable production units in the economic territory of a country. For example, in a big country like India, we find millions of units: big and small factories, shops, service centers, service institutions, etc. Is it really feasible to get data adequate enough to estimate value added by each individual production unit separately? What is normally done in practical estimates is to first classify all the production units into some convenient number of sectors and then make an estimate of national income originating in each sector separately, and then take the sum of sectoral value added to arrive at GDP.

All production units of similar type are grouped into one sector. For example, all production units engaged in raising crops are grouped as agriculture sector. All banking institutions are grouped as banking sector. All factories are grouped as manufacturing sector and so on. On this basis, the production units located on India's economic territory are classified into the following sectors:

1) Agriculture and allied activities
2) Forestry and logging
3) Fishing
4) Mining and quarrying
5) Manufacturing
6) Construction
7) Electricity, gas and water supply
8) Trade, hotels and restaurants
9) Transport, storage and communication
10) Banking and insurance
11) Real Estates, ownership of dwellings and business services
12) Public administration and Defence
13) Other Service

Irrespective of the method one adopts, the classification of production units into convenient number of sectors, called industrial sectors, is the first exercise required to be undertaken. We now turn our attention to explain the steps required to be taken in estimating national income by different methods.

4.3.3 Production (or value added) Method

When, to estimate national income, data are obtained at the income creation stage, the exercise is termed as production method (or value added method). The method involves the following steps:

1) Classify production units into some convenient numbers of industrial sectors. Each sector should contain similar type of production units as far as possible. (This step has been explained in detail in section 4.3.2).

2) Estimate NVA_{fc} by each industrial sector

   NVA_{fc} by a sector can be obtained by taking the following sub-steps:

   1) Estimate value of gross output: The same can be obtained (a) as sum of sales and net change in inventories or (b) as quantity of output multiplied by price.

   2) Estimate intermediate cost and deduct the same from the value of gross output to obtain GVA_{mp}.

   3) Estimate consumption of fixed capital and subtract the same from GVA_{mp} to arrive at NVA_{mp}.

   4) Subtract indirect taxes from and add subsidies to NVA_{mp} to arrive at NVA_{fc}. All taxes on production such as excise duty, sale tax, octroi, custom duties, license fees etc. are indirect taxes. The estimate so arrived gives the contribution of the sector to national income.

Take the sum of NVA_{fc} of all industrial sectors of the economic territory. This sum equal NDP_{fc} at current prices.

Add net factor income from Abroad to NDP_{fc}. This gives us an estimate of NNP_{fc} or national income at current prices.

Deflate current price national income into constant price national income. The process of deflation was explained in sector 4.2.7. By doing so, we arrive at an estimate of real national income. This enables us to compare the performance of national income of given year with the previous year.

While taking the above steps there are certain things which must be kept in view. First, only newly produced goods and services must be counted. Sale and purchase of second- hand goods should not be treated as production. Second, transactions in financial assets like shares and debentures are not counted. However, any service charge or brokerage paid as payment for the service rendered and is included in production. Third, goods and services produced for own use, must be counted. For example, grain produced by farmer but used for family consumption, building one's own house, cooking one's food and son on. It is different thing that the estimators may sometimes find it difficult to include these goods and services because no estimate of their value can be made.

Now let us discuss the methods.

4.3.4 Income Distribution Method

Income paid out versus. Income received variants

Factor incomes are paid out by production units and received by factor owners. So we can get data about factor incomes either from the records of production units, or from the records of factor owners. Accordingly there are two variants of the methods: (i) income paid out and (ii) income received.

Income-paid-out variant

Factor incomes are paid out by production units in the form of compensation of employees, rent, interest and profits. Before we describe the required steps let us first explain the meaning of the individual factor income.

i) **Compensation of employees (COE)**

SNA defines COE as the total remuneration, in cash or in kind, payable by an enterprise to an employee in return for work done by the latter during the accounting period. It has two main components: (a) wages and salaries in cash or in kind and (b) social contributions payable by the employers.

Cash payments includes regular periodic payments like monthly salary, allowances, bonus, compensations, etc. related to the amount of work done by the employees. Wages and salaries in kind consist of consumption good or service provided as remuneration by the employee like meals, housing, clothing, vehicles including goods and services produced and provided free by the employers.

Social contributions include contributions, actual or imputed incurred by employers in order to obtain social benefits for their employees. Actual social contributions include payment by employers to social security funds, insurance companies, pension funds, etc. Imputed social contributions include social benefits provided by the employers directly to their employees without involving specialized institutions like insurance companies etc. for the same.

ii) **Rent**

Rent is the amount payable by the tenant to the landlord. It may be paid in cash, or in kind as in agriculture. The entire amount payable as rent is not factor income. A part of this may be payable by landlord as tax. Another part of rent may be incurred as maintenance expenses. The 'net rent' after deducting tax payable and maintenance changes is factor income.

Royalty payments on granting the leasing rights of subsoil assets in the form of deposit of minerals like coal, oil or natural gas, are also treated as rents.

It should be kept in mind here with payments made for the use of buildings or other structure is not rent but rental. Very often rent payable on building covers both rent of land and rental of structures. Only that part of such payable which is rent of land should be counted as factor payment. (Rental of structure is simply payment for services offered by the owner of structure and is intermediate cost for the production units and final consumption expenditure for the consumers).

iii) **Interest**

Interest is amount actual or imputed payable by production units on the financial assets provided by the creditors including the funds provided by the owner. It is the amount payable on the liabilities of enterprise. It is recorded on accrual basis. Only interest payable on loans taken for the purpose of production are treated as factor payments. Interest payable on loans taken for meeting consumption expenditure is not a factor payment because such a loan is not used as a factor of production

iv) **Profit**

Profit is the factor income accruing to the entrepreneur. It is also called entrepreneurial income broadly. It is normally divided into three parts: (a) profit tax (b) distributed profits i.e. dividends, etc. and (c) retained profits (or undistributed profits).

Concept of Operating Surplus (or mixed income)

Operating surplus and mixed income are two alternatives names for the same item. The difference is that Operating surplus relates to 'Corporate and quasi-corporate' group of enterprise. Mixed income relates to non-corporate enterprises. It is defined as:

Operating Surplus = NVA_{mp}

(or mixed income) Compensation of Employees (COE)

- Indirect Taxes
- Subsidies

In brief, operating surplus (or mixed income) equals the sum of rent, interest profits.

A distinction is made between gross and net operating surplus. The above concept is 'net' Gross operating surplus equals net operating surplus plus consumption of fixed capital. Alternatively, it is sum of rent, interest, profit and consumption of fixed capital.

National Income

In terms of income paid out variant, the sum total of COE, rent, interest, profits, or that of COE and operating surplus or (mixed income), paid out by resident production units located in economic territory equals NDP_{fc}. By adding net factor income received from abroad (NFIA) to NDP_{fc} we get a measure of NNP_{fc} or simply national income

Steps in estimation

The following steps are required to be taken for estimating national income by the income paid out variant. Most steps are same as in case of production method.

1) Classify production units into a convenient number of industrial sectors.

2) Estimate factor payments made by each sector. The factor payments are in the form of COE, rent, interest and profits; or in the form of COE,

operating surplus and mixed income. The sum total of these factor payments equals NVA_{fc}.

3) Take sum of NVA_{fc} by all sectors to obtain the measure of NDP_{fc}.

4) Add NFIA to NDP_{fc} to obtain NNP_{fc} i.e. national income at current prices.

5) Deflate national income by using appropriate index numbers.

4.3.5 Expenditure Method

Expenditure method measures national income at the disposition stage. Disposition here means disposition of income or final products. In this way it has two variants: income disposal and product disposal. Income disposal variant classifies expenditure into consumption expenditure and savings. Product disposal variant classifies expenditure on final products as expenditure on consumption and investment. This is way it is also called final products method. In actual practice, product disposal variant is used because of the comparatively easy position of the availability of data. As such we will explain the product disposal variant in detail.

Expenditure method (product disposal variant) estimates national expenditure by disposition of final products. This method attempts to answer the question: who buys final products? Resident, consumers, resident investors, or non-residents?

The uses of final products, for the purpose of estimating national income, are usually classified into four groups : (1) Private final consumption expenditure (PFCE), (2) Government final consumption expenditure (GFCE) (3) Gross Domestic Capital Formation (GDFC) and (4) Net Exports. The first two are consumption uses and last two investment uses (1) The sum of C and I gives GDP_{mp}. Let us now explain the meaning of each component.

i) **Private Final Consumption Expenditure (PFCE)**

PFCE is further subdivided into: (a) Households Final Consumption Expenditure (HFCE) and (b) Non-Profit Institutions serving households final consumption expenditure (NPISHCE).

a) HFCE

It consists of expenditure, both actual and imputed, incurred by resident households on consumption goods and services, whether that expenditure is incurred within the economic territory or abroad. Expenditure by residents abroad constitutes imports. So HFCE has an element of import. It does not constitute entirely of final products produced within economic territory.

b) NPISH-FCE

It consists of imputed expenditure incurred by the resident NPISHs on providing free services of households. Imputed expenditure means actual expenditure incurred on providing services (like COE, intermediate consumption, CFC etc.) less sales (like token price, fees etc.).

The sum total of HFCE and NPISH FCE is called PFCE.

ii) **Government Final Consumption Expenditure (GFCE)**

It consists of imputed expenditures, incurred by general government. Incurred on providing services like COE, intermediate consumption, CFC etc. less receipts from sales (like token fees, price, etc.).

iii) **Gross Capital Formation (GCF)**

GCF represents addition to the stock of capital during an accounting period. It consists of (a) value of gross fixed capital formation (GFCF) and (b) changes in inventories. 9SNA 1993 also includes acquisition of valuables like precious stones and metals, painting, jewelry, etc. in GCF).

GFCF is measured by net acquisition (i.e. acquisition less disposals of tangible and intangible assets during the accounting period. Main types of tangible fixed assets are dwelling; other buildings and structures; machinery and equipment; cultivated assets like trees and livestock. Main types of intangible fixed assets are mineral exploration; computer software; entertainment, literary or artistic originals, etc. Expenditure on improvements of fixed assets is also included in GFCF.

Change in inventory equals the value of the net acquisition (Acquisition less disposal) of the inventories acquired by enterprises during the accounting period. Inventories consists of materials and supplies, work in progress, goods for resale and finished goods. Materials and supplies consists of goods meant for intermediate consumption. Work in progress consists of output produced by an enterprise that is not yet finished. Goods for resale are goods acquired by enterprises such as wholesalers or retailers, for the purpose of reselling.

GCF, also called gross domestic capital formation (GDCF) in India equals expenditure on investment by the residents during the accounting period.

iv) **Net exports**

Net exports equal exports less imports of goods and services. Exports consist of sales, barter, gifts or grants from resident to non-resident. Net exports is value of sale of final products to non-residents.

Steps in estimation

1) Classify production units into distinct industrial sectors.

2) Estimate final expenditures incurred in the output produced by different sectors.

3) Take the sum of final expenditures on the output of all the industrial sectors to obtain GDPmp.

PFCE (= HFCE + NPISH FCE)

\+ GFCE

\+ GDCF (=GDFCF + Net changes in inventories)

\+ Net exports (=Exports – Imports)

= GDPmp

4) Subtract consumption of fixed capital and net indirect taxes from GDPmp to get NDPfc.

5) Add NFIA to NDPfc to get NNPfc (i.e. national Income) at current prices.

6) Deflate final expenditures by using appropriate indexes to obtain national income at constant prices.

The exercise of identifying final expenditures must be undertaken with great care. Many precautions are necessary. First, intermediate expenditures must be carefully identified and ignored. Second, only expenditures on goods and services are to be counted. Expenditures on financial assets like that on shares, debentures etc. are not to be included. Third, expenditures on gifts, donations, taxes, fines etc. are transfer expenditures and not final expenditures. Fourth, expenditures on second hand goods are not to be included. Only expenditure on newly produced goods and services produced during the accounting period is to be included.

4.4 CHOICE OF METHOD

We have seen that there are three methods of estimating national income. Should national income be estimated from all the three methods simultaneously? If only one method is to be chosen, which one? What determines the choice? The choice, in practice, is determined by two main considerations. What is the purpose? What types of data are actually available?

i) **Purpose**

Each method serves a different purpose. Production method, by measuring values added by a sector, reveals the contribution of different industrial sectors to national income. Such an information is extremely useful in planning allocation of resources.

Income method reveals as to how much equally or unequally is national income distributed. This information is useful in planning the reduction of inequalities.

Expenditure method, by measuring consumption and investment expenditure reveals the standard of living of the people. Distribution of consumption expenditure reveals standard of living of different groups. Investment expenditure indicates the potential of raising the standard of living in the future.

ii) **Data Position**

The data availability position is more important than the purpose of estimation. It is a big constraint. Planners may have a particular purpose of national income in mind, but if the relevant data are not available, what one can do. So many times, in practical world, the purpose has to be sidelined in the absence of required data. National Income is estimated with the help of the method about which data can be conveniently collected. In Indian estimates, for example, data position is so acute that so far it has not been possible to apply a single method to all the sectors. Different methods have been sued for different sectors.

The ideal position for any economy would be to estimate national income originating from each individual sector of the economy by all the three methods simultaneously to extract maximum out of national income data.

Check Your Progress 2

1) What is the basis of the three methods of estimating national income?

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2) Name the two variants of the income distribution method. What is their meaning?

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3) Name the two variants of the expenditure method. What is their meaning?

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4) What is the purpose of estimating national income through the production method?

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4.5 LET US SUM UP

National income is the sum of factor incomes accruing to the residents of an economic territory during an accounting year. Economic territory consists of geographical territory administrated by government within which persons, goods and capital circulate freely. A resident unit is one whose center of economic interest lies in the economic territory of the country in question. A factor income is the income received by a factor owner from rendering services to the production unit. These are in the form of COE, rent, interest and profits.

Intermediate consumption is the value of goods and services that are entirely used up in the course of production during the accounting period. It consists of all goods and services acquired by one production unit from other production units and meant for resale, directly or indirectly. Final products ae those which are acquired for consumption and investment and not for resale. Excess of value of output over the intermediate consumption is termed as value added or

to be more precisely GVAmp. Sum total of GVAmp of all the resident production units equals GDPmp. By subtracting consumption of fixed capital and net indirect axes from and adding NFIA, we get NNPfc (or national income).

Constant price estimation of national income is a measure of real income. It is derived by dividing current price estimate by the price index. The entire process of derivation is called deflation.

Factor incomes are generated in production units; distributed to the factor owners; and disposed of on consumption and saving (or investment). Accordingly there are three sources of data, i.e. accounts of production units, of factor owners and data on expenditures, for obtaining information on national income. This had resulted in three methods, production, income and expenditure methods of estimating national income.

The first step, irrespective of the method used, is to classify production units into a convenient number of industrial sectors. The second step differs from method to method. In production method, we measure value added; in income method, factor payments; and in expenditure method, expenditures incurred on final products. The third step is to take sum of all these variables of all sectors. This step is summarised as below:

Production Method	Income Method	Expenditure Method
Σ GVAmp		PFCE
-CFC	COE	+GFCE
-Net indirect Tax	+Rent	+GDCF
	+Interest	+NET exports
	+Profits	-CFC
		-Net Indirect axes
=NDPfc	=NDPfc	=NDPfc

The fourth step is to add NFIA to NDPfc to get NNPfc or national income at current prices. The fifth step is to deflate current price estimates into constant price estimates by using index numbers.

The choice of method, in actual estimates, is determined by (i) the purpose at hand and (ii) availability of data. The purpose of production method is to measure the contribution of industrial sectors to national income. Income method measures equitableness of distribution of income. Expenditure method measures standard of living of the different groups in the society. Depending on the data position, the estimators have to many a time compromise with the purpose at hand.

4.6 KEY WORDS

Compensation of employees : Total remuneration, in cash of in kind, ayable by an enterprise to an employee in return for work done.

Deflation : The process of converting current price estimates into constant price estimates.

Economic territory : Consists of geographical territory administrated by a government within which persons, goods and capital circulate freely.

Factor income : Income received by a factor owner by rendering services to a production unit.

Final Products : Goods and services acquired for final consumption and investment.

Gross Capital Formation : Sum of gross fixed capital formation and changes in inventories

Household final consumption expenditure : Expenditure, both actual and imputed, incurred by resident households on consumption goods and services within economic territory and abroad

Intermediate Consumption : Value of goods and services that are entirely used up in course of production during accounting period.

Mixed Income : Excess of NVAfc over the COE in case of non-corporate enterprise.

Operating Surplus : Excess of NVAfc over the COE in case of corporate and quasi-corporate enterprises.

Rent : The amount payable, in cash or in kind, by tenant to the landlord for land including royalty payments on the sub-soil assets.

Resident unit : One whose center of economic interest lies in the economic territory in question.

Social Contribution : Contribution incurred by employers in order to obtain social benefits for their employees.

4.7 SOME USEFUL BOOKS

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

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

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

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

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

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

4.8 ANSWERS OR HINTS TO CHECK YOUR PROGRESS EXERCISES

Check Your Progress 1

1) A resident unit is one whose center of economic interest lies in the economic territory in question.

2) (d)

3) Value of goods and services that are entirely used up in he course of production during the accounting period.

4) (c)

Check Your Progress 2

1) Incomes are generated, distributed and then spent. Accordingly these are three sources of data. These constitute the three methods.

2) i) Income paid out variant : measures national income when incomes are paid out by production units.

   ii) Income received variant : measures national income when incomes ae received by factor owners.

3) i) Income disposal variant : measures national income when incomes are spent on consumption and saved.

   ii) Product disposal variant : measures national income when products are acquired for consumption and investment.

4) To know the relative contribution of the different industrial sectors of the economy.

UNIT 5 DISPOSABLE INCOME AGGREGATES

Structure

5.0 OBJECTIVES

After going through the lesson, you would be able to:

- explain the concept of transfer payments;
- distinguish between current and capital transfers;
- differentiate between transfers in cash and in kind;
- define disposable income;
- describe the computation of national disposable income;
- discuss the computation of disposable income aggregates of different sectors of an economy; and

- Explain the various steps taken to compute personal disposable income in India.

5.1 INTRODUCTION

In the last unit we were mainly concerned with the understanding of the concept of national income. There we learnt that national income is essentially the sum of factor incomes accruing to the residents of the economic territory of a country during an accounting year. It is the income which residents 'earn'. The emphasis in this concept is on earning aspect. But what one earns may not really be equal to what is really available for spending on consumption. Suppose an individual earns Rs.60,000/- during the accounting year. Is this whole amount really available to the individual for spending as she wishes? Can she spend more than this amount? The answer is 'not necessarily'. A person may have to pay a tax of say 10% on this income. It means the person has no option but to pay Rs.6,000/- compulsorily to the government. So what is available to her is Rs.54,000/- and not Rs.60,000/- for spending on income during the year. Now, suppose the person concerned got a cash help of Rs.10,000 from some institution, say the government. This raises the person's income available to her for spending to Rs.64,000/-. Both these transactions, i.e. tax and cash help, are termed as 'current transfers' in national income accounting. The measure we get after adding current transfers received and subtracting current transfers paid is called disposable income. What is true at the individual level is also true at the national level. There is a concept called national disposable income. Such a measure of income can be greater or less than national income. This lesson aims at explaining the concepts of transfer income and disposable income relating to the nation and its sectors.

5.2 CONCEPT OF TRANSFER

The concept and measure of disposable income is linked and dependent on the concept of 'transfer'. Disposable income of a country equals:

National income
\+ Current transfers receivable
\- Current transfers payable

A clear understanding of the concept of transfer is thus essential to measure disposable income whether of the country as a whole or of its individual sectors.

5.2.1 Meaning of a Transfer

According to the System of National Account developed by the U.N. (referred to as SNA) "a transfer is a transaction in which one institutional unit provides a good, service or asset to another unit without receiving from the latter any good, service or asset in return as counterpart". Suppose government makes a cash help of Rs.5,000/- to a needy family during a year. What does government get in return from that family? Nothing. Sometimes a unit making a transfer receives no specific quantifiable benefit in return. Similarly, a household paying taxes is not entitled to receive any benefit from the government simply on account of tax payment. All such transactions whether voluntary or legally compulsory, or, whether in cash or in kind are treated as transfers.

5.2.2 Current Versus Capital Transfer

A distinction is made between current and capital transfers. There is no unique criterion for distinguishing between the two. Broadly, the transfers which influence the current income of both the parties involved in the transactions are treated as current transfers. On the other hand, transfers involving transfer of ownership of assets, whether in cash or in kind, thus influencing capital or wealth of both the parties are treated as capital transfers.

Briefly thus, current transfers influence disposable income of both the parties. Disposable income of the payment is reduced and that of receiver increased. Capital transfers influence capital or wealth, reducing the same in the case of payer and increasing in the case of receiver.

Criteria

Three criteria, though not fully satisfactory, can be used to identity whether a transfer is current or capital. First, the amount involved in capital transfers is comparatively large. Second, capital transfers are made less frequently than current transfers which are made comparatively more frequently. Third, capital transfers are often irregular as compared to current transfers which are often regular.

Mixed transfer

The above three criteria are not foolproof. This we have already stated above. Sometimes, it is possible that a transfer may be regarded by one party as capital transfers and as current by the other. For example, suppose a rich man makes a gift of Rs.5,000/- out of his current income to a poor man. The rich man may treat this as a current transfer while the poor man may treat the same as a capital transfer. Let us call such a transfer as a mixed transfer. SNA treats all such transfers as capital transfers. Thus, any transfer which involves an asset for at least one party is treated as a capital transfer.

5.2.3 Kinds of Current Transfers

SNA distinguishes between three kinds of current transfers: (1) Current taxes on income, wealth, etc., (2) Social contributions and benefits, and (3) Other current transfers.

1) **Current taxes on income, wealth, etc.**

Under this category fall the taxes on income of households or profits of corporations and of taxes on wealth that are payable regularly every year. These are receivable by general government and payable by other sectors of the economy.

2) **Social benefits and social contributions**

Social benefits are current transfers receivable by households on account of sickness, unemployment, retirement, housing, education or family circumstances. These are of two kinds: Social insurance benefits and social assistance benefits. Benefits provided through the organized social insurance schemes are termed as social insurance benefits. Social insurance schemes are schemes in which social contributions are paid by employees, or by employers

on behalf of their employees to secure benefits. The schemes may be organized by government or private bodies/institutions.

Social contributions are actual or imputed payments to social insurance schemes made by employers on behalf of their employees or by the employees, self-employed, or non-employed persons on their own behalf. Social contributions are payable by households. Social benefits are receivable by households.

2) **Other current transfers**

This category includes several kinds of transfers serving quite different purposes. Some examples are: net premiums paid for non-life insurance, claims received, transfers between different kinds of government units, from households to households, etc., transfers to non-profit institutions serving households, fines and penalties, payment for lottery tickets, receipt of lottery prizes, payments of compensation on account of injury, etc.

5.2.4 Current Transfers in Cash vs. in Kind

Transfers can be in cash or in kind. A cash transfer consists of payment of currency or transferable deposits by one unit to another without any counterpart. A transfer in kind consists either of transfer of ownership of a good or asset, other than cash, or the provision of a service, a gain without any counterpart.

Transfers in kind are of two types: (1) social transfers in kind and (2) other transfers in kind. Social transfers in kind consist of individual goods and services provided as benefits in kind to individual households by government units, and NPISHs. It includes reimbursements of expenses incurred by households from social security funds like on medical treatment and free services. For this purpose, a distinction is made between "individual" and "collective" consumption expenditure. Individual consumption expenditure is one which is incurred on their behalf. Collective consumption expenditure is for the benefit of community at large. By convention, all final consumption expenditures of the NPISHs are treated as being for the individual. But government consumption expenditure is partly collective and partly individual.

The expenditure by NPISHs and general government to benefit individual consumers is social transfers in kind. The final consumption expenditure incurred by general government for the benefit of community at large is 'other transfers in kind'.

The concept of social transfers in kind is relevant in the context of distinction between 'disposable income' and 'adjusted disposable income'. (Refer to sections 5,3 and 5,4).

Check Your Progress 1

1) Tick the correct alternative.

A) A current transfer influences:

a) income

b) wealth

c) both income and wealth

d) neither income nor wealth

B) A mixed transfer, by convention, is treated as:

a) current transfer

b) capital transfer

c) both current and capital transfers

d) neither current nor capital transfer

C) Tax on profits is a

a) current transfer

b) capital transfer

c) mixed transfer

d) none of the above

2) Distinguish between 'individual' and 'collective' consumption expenditure by government.

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5.3 CONCEPT OF DISPOSABLE INCOME

We first take up the meaning of the term: SNA defines disposable income as the maximum a unit or a sector can afford to spend on consumption goods or services during the accounting period without having to finance the expenditure by reducing its cash, or by disposing of assets or by increasing its liabilities. It is taken as equal to:

GNP accruing to the unit

\+ Current transfers in cash receivable

\- Current transfers in cash payable

The above measure is termed as Gross Disposable Income. By subtracting consumption of fixed capital, we can get a measure called Net Disposable Income.

5.4 CONCEPT OF ADJUSTED DISPOSABLE INCOME

This is relatively a new concept and used for the first time in the 1993 version of SNA. It is defined as the maximum value of final consumption goods and services that a sector can afford to consume in the accounting period without having to reduce its net assets. It is taken as equal to:

Disposable income = income earned

+ social transfers in kind receivable

- social transfers in kind payable

The concept of 'social transfer in kind' has been explained in Section 5.2.3. It is clear that the concept of adjusted disposable income is more comprehensive as compared to the concept of disposable income. The concept is yet to be adopted in actual estimates. As such we confine out attention to the concept of disposable income in the following sections.

5.5 NATIONAL DISPOSABLE INCOME (NDI)

There are two angles of looking at NDI: (1) Sources and (2) Uses

5.5.1 Sources Angle

We have already explained the concept of disposable income (in Section 5.3). Let us apply this concept to the country as a whole. The country here means the residents of economic territory of that country taken together. The concept of NDI when applied to the country can be 'gross' or 'net'. As gross (i.e. GNDI) it means:

GNDI = GNP_{mp}

+ current transfers in cash receivable

- current transfers in cash payable

As net (i.e. Net NDI or NNDI) it means:

NNDI = NNP_{mp}

+ current transfers in cash receivable

- current transfers in cash payable

Remember our unit in the present context is the 'country' consisting of residents of the economic territory of that country. Any transfer from one resident to another does not make any difference to NDI, whether 'gross' or 'net'. A transfer say from one resident A to another resident B only reduces the disposable income of A and raises that of B in an equal amount. This leaves the sum total of disposable incomes of A and B together unchanged before and after the transfer. What affects NDI is current transfers to and from the non-residents. All non-residents taken together are described as the rest of the world (ROW). So, any current transfer made to all the ROW reduces the NDI. Similarly, any current transfer received from ROW and NDI. As such the concept of NDI, say NNDI is described as follows:

NNDI = NNP_{mp}

+ current transfers in cash receivable from ROW

- current transfers in cash payable to ROW

or NNDI = NNP_{mp}

+ net current in cash transfers receivable from ROW

Remember the subscript 'net' in the net current transfers means 'receivable less payable'. So, the value of this 'net' can be positive (+) or negative (-). When positive, it makes NNDI more than NNP_{mp}. When negative, it makes NNDI less than NNP_{mp}. When zero, it makes NNDI equal to NNP_{mp}.

5.5.2 Uses Angle

The above angle of looking at the concept of NDI can be termed as 'sources' angle because we have estimated NDI as the sum of sources of NDI. There is another angle called 'uses' angle. NDI is used for incurring consumption expenditure and saving. As such the sum of consumption expenditure and saving would also equal NDI.

NDI = Residents' consumption expenditure
+ Residents' gross saving

It is gross saving (i.e. including consumption of fixed capital i.e. CFC), it is GNDI. If it is net saving (i.e. excluding CFC), it is NNDI, So,

GNDI = Residents' consumption expenditure
+ Residents' gross saving

and NNDI = Residents' consumption expenditure
+ Residents' net saving

Remember Residents' consumption expenditure is the sum of Private (i.e. household + NPISH) Final Consumption Expenditure and Government Final Consumption Expenditure.

5.5.3 The Two Angles Reconciled

The two angles of looking at NDI are reconciled in the form of an account called national Disposable Income and its Appropriation Account. This is one of the Consolidated Accounts of the Nation recommended in the SNA.

Table 5.1: GNDI and its Appropriation Account

USES	SOURCES
Consumption expenditure ---	GNP at Market Price ---
+ Gross Saving ---	+ **Net** current transfers receivable from ROW ---
Appropriation of GNDI ---	GNDI ---

Table 5.2: NNDI and its Appropriation Account

USES	SOURCES
Consumption expenditure ---	NNP at Market Price ---
+ Net Saving ---	+ **Net** current transfers receivable from ROW ---
Appropriation of NNDI ---	NNDI ---

5.6 SECTORAL DISPOSABLE INCOME

GNDI or NNDI is the sum total of the disposable income of the constituent sectors of the economic territory of a country. The economy for this purpose can be classified into production Units. Households, NPISHs and General Government.

The basic approach for estimating disposable income of each sector is the same, i.e. disposable income equals "share in GNP ± current transfers". But to distinguish it from GNDI or NNDI, we have to make a distinction between domestic sectors and the external sector, i.e., ROW. We have to separate the current transfer transaction between one domestic sector and the other on the one hand, and between a domestic sector and ROW. The reason for this the 'domestic sector to domestic sector' transactions and the 'transaction with the ROW', while the NDI is influenced only by the latter.

Sector's GDI = GNP_{mp} accruing to the sector
+ Net current transfer receivable from other domestic sectors
+ Net current transfer receivable from ROW

The GNDI is merely the sum of GDI of its constituent sectors, i.e.,

GNDI = Σ Sector's GDI = Σ(GNP accruing to the sectors)
+ Σ(Net current transfer receivable from other domestic sectors)
+ net current transfers receivable from ROW

Now, the sum of net current transfers receivable by all the domestic sectors taken together must be zero. Such a transfer leads to a rise in GDI of the receiving sector and fall in the GDI of paying sector by an equal amount, leaving the total GDI of all the sectors taken together unchanged. So,

GNDI = GNP_{mp}
+ Net current transfers receivable from ROW

Similarly, NNDI can be taken as the sum of NNP_{mp} accruing to all sectors and net current transfers receivable from the ROW by all the domestic sectors.

Check Your Progress 2

1) Define disposable income.

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2) How do we compute Gross National Disposable Income from the 'sources' side?

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3) How do we compute Net National Disposable Income from the 'uses' side?

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4) Why should the sum total of net current transfers receivable from domestic sector by all the domestic sectors of an economy must be zero.

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5.7 DISPOSABLE INCOME AGGREGATES OF INDIA

Disposable income aggregates are prepared and published by the Central Statistical Organisation (CSO), a unit of the Ministry of Planning and Programme Implementation, Government of India. The name of the publication in which the estimates are published is National Accounts Statistics (White Paper). This is published annually.

The basic approach towards estimation is explained in sources and methods (1989) also a publication of the CSO.

Outwardly, the Indian estimates of disposable income are confined to NDI and private sectors disposable income only. However, a computation of government disposable income can be made from the data available in the CSO's White Paper.

5.7.1 National Disposable Income in the Indian Estimates

NDI, in the Indian estimates, is computed in the same manner as in the SNA. However, Indian estimates confine only to Net NDI (or NNDI). There is no mention of GNDI probably because of unreliable estimates of consumption of fixed capital. This factor has also prompted SNA to rely more on NNDI than GNDI. From the resources angle, it is defined as :

NNDI = NNP_{mp}

\+ Net current transfers from the ROW

From the 'Uses' angle, it is defined as:

NNDI = final consumption expenditure

\+ net saving

The two angles are reconciled in the following consolidated account of India relating to the year 2003-04

Table 5.3: NNDI AND ITS APPROPRIATION ACCOUNT (2003-04)

(At current prices) (rounded to Rs.billion, i.e. 100 crores)

USES		SOURCES	
Final consumption Expenditure	6,646	NNPmp	8,440
Net Savings	1,432	Net current Transfers from ROW	195
St. discrepancies	557		
Appropriation of NNDI	8,635	NNDI	8,635

Source: CSO National Accounts Statistics (2004)

5.7.2 Personal Disposable Income (PDI)

Private sector comprises of production units, households and non-profit institutions serving households (NPISHs). PDI in India is the sum of disposable income of households and NPISH. It can be computed as:

PDI = GNP accruing to households (including NPISHs)

\+ Net current transfers receivable from other domestic sectors

\+ Current transfers receivable form ROW
(Households here are consumer households).

Let us take each variable on the right hand side one by one. Consumer households are not producers. So, they neither make provision for consumption of fixed capital nor they pay any indirect tax. So, GNP accruing to households means the same as their NNP_{fc}. But, NPISHs may spend on consumption of fixed capital and pay indirect taxes and receive subsidies. The assumption (or convention) in the Indian estimates seems to be that NPISHs neither provide for consumption of fixed capital nor pay any indirect tax or receive any subsidy. This is apparent from the fact that computation of personal income in the Indian estimates is derived from NNP_{fc} and not from GNP_{mp}. Therefore, PDI in the Indian estimates is Net PDI (NPDI).

NPDI = NNP_{fc} accruing to households (inc. NPISHs)

\+ net current transfers receivable from other domestic sectors

\+ net current transfers receivable from ROW

Steps in computation of PDI

The main steps are:

1) **Compute NDP_{fc} accruing to the Private Sector**

Private sector consists of Households (including NPISHs) and Private Production Units. By deducting, NDP_{fc} accruing to government from the NDP_{fc} of the country, we can get NDP_{fc} accruing to the private sector.

Government sector has three parts: General government, Departmental enterprises and Non-departmental enterprises. General government is engaged in administration of the country. It is also called Producers of Government Services (PGS). Departmental enterprises are termed as Departmental

Commercial Undertakings (DCUs) and are owned, controlled and run by public authorities. Non-departmental enterprises are referred to as Non-departmental Commercial Undertakings (NDCUs) and comprise of government companies and statutory corporation.

In the Indian estimates, income accruing to the PGS and DCUs is termed as 'Income from Property and Entrepreneurship (IEP) accruing to the Government Administrative Department (GAD). Income accruing to the NDCUs is termed as savings of non-departmental enterprises. By deducting these two incomes from NDP_{fc}, we can get 'NDP_{fc} accruing to the private sector'.

NDP_{fc} accruing to the private sector = NDP_{fc}
- IEP accruing to GAD
- Savings of non-departmental enterprises

2) **Compute NNP_{fc} accruing to the private sector**

This can be done by adding net factor income received from ROW to NDP_{fc}. Remember that in the Indian estimates the whole of net factor income received from abroad is assumed to be received by the private sector only (refer to section 5.7.1). This puts a limitation on NNP_{fc} accruing to the private sector.

NNP_{fc} accruing to the Private Sector = NDP_{fc} accruing to the private sector
+ net factor income received from abroad

3) **Compute private income by accounting current transfers**

Transactions is an economy take place between private sector, government sector and ROW sector. So, private sector possibly receives current transfers from and pays current transfers to the government and the ROW Sectors.

All current transfers are 'non-factor' incomes and payments. There is another income, interest on national debt, whose status as a transfer income may be questionable but which is unquestionably a non-factor income. Interest on national debt is the interest paid by the general government on loans taken to run the administration, a consumption activity. Those who lend money sacrifice and receive interest in return. So, it is not strictly a transfer income. But at the same time it is also true that this money is not used for production activity and, therefore, does not serve as a factor of production. As such, it is a non-factor income and treated like a current transfer. (Remember that if the interest is paid on the money lent to the government enterprise, it is a factor payment).

Private income can now be computed by adding net current transfers receivable from the general government and the ROW sectors and non-factor interest income received from general government.

Private income = NNP_{fc} accruing to the private sector
+ net current transfers from the government administrative departments
+ net current transfers from the ROW
+ National debt interest

Private income is not strictly disposable income. It takes account of only voluntary current transfers and not legally compulsory current transfers like direct taxes, compulsory fees, fines, etc. (By deducting direct taxes etc. paid by corporations and households, we can obtain a measure of private disposable income. But such a measure doesn't find a place in the Indian estimates).

4) **Compute personal income by deducting income accruing to production units**

In business accounts, the legal entity of a production unit is separate from the legal entity of its owners. Income is generated in a production unit which in turn distributes the same among the owners. The entire income generated may not really be distributed among the owners. A part of this income may be retained in production unit. (In actual terms, it is the decision of the owners to pay themselves the whole of income generated or retain a part in production unit itself). Another part may be paid as profit tax. As such only a part of profits earned by production units may be at the disposal of owners who belong to the household sector.

We find that profit is disposed on (1) profit tax, (2) income distribution among owners and (3) income retained in business. By deducting profit tax and retained income from private income, we get a measure called personal income in the Indian estimates.

Personal income = Private income

- corporate profit tax
- Retained earnings of Private Corporation Sector (net of retained earnings of foreign companies)

The above measure is still not the disposable income of the households (inc. NPISHs) in the strict sense. It does not take into account the involuntary transfers. At the most, it can be described as households' disposable income before tax.

5) **Deduct legally compulsory current transfers from personal income**

This step will finally give us PDI.

NDPI = Personal income

- Direct taxes paid by households
- Miscellaneous receipts of government administrative departments (paid by households)

"Miscellaneous receipts etc.". i.e., compulsory fees, fines, etc. when paid by production units are treated as indirect taxes and when paid by household as direct taxes. In Indian estimates there is data problem in bifurcation of these receipts into direct and indirect taxes. This has led to the assumption of treating all such receipts as if paid by households. This puts a small limitation on PDI data".

The above five steps give us the measure NPDI as understood in national income accounting. As compared to the Personal Income which 'disposable income before tax', PDI is 'disposable income after tax'.

Steps summarised

The steps leading to the derivation of NPDI are summarized in the following Table 5.4. The table is based on the pattern adopted by the CSO. The figures (rounded upto 100 crore = billion of rupee) relate to India for the year 1994-95.

Table 5.4: Computation of Net Personal Disposable Income of India (2004-05) (At current prices)

(Figures rounded upto Billions, i.e., Rs.100 crores)

Given	NDP_{fc}	7637
Step 1	Less: Income from property and entrepreneurship accruing to the government administrative departments Less: Saving of non-departmental enterprises	 118 66
Step 2	= Income accruing to private sector from domestic product. Add: Net factor income from abroad	7453 (-)150
Step 3	= NNP_{fc} accruing to the private sector Add: Interest on public debt Add: Net current transfers from government administrative departments Add: Net current transfers from ROW	7303 450 296 195
Step 4	= PRIVATE INCOME Less: Saving of private corporate sector net of retained earnings of foreign companies Less: Corporation tax	8244 165 138
Step 5	= PERSONAL INCOME Less: Direct taxes paid by households Less: Miscellaneous receipts of government administrative departments	7941 163 80
=	PERSONAL DISPOSABLE INCOME	7698

Source: National Accounts Statistics 2005 (C.S.O.)

5.7.3 Other Sectoral Disposable Income Aggregates

C.S.O. does not explicitly publish disposable income aggregates of government or private units. But these can be conveniently derived from the same variables as are used in computing PDI in India. The basic method is the same. Take, for example, government's disposable income (GDI). To be exact it net GDI (NGDI) because no gross disposable income estimates are made in the Indian estimates due to the unreliable estimates of consumption of fixed capital.

NGDI = NNP_{mp} accruing to government

+ Net current transfers receivable from other domestic sectors

+ Net current transfers receivable from ROW

Let us remind ourselves of certain assumptions in Indian estimates. First, the entire net factor income received from abroad (NFIA) accrues to only private sector. As such NFIA received by government is taken as nil. Second, government does not receive any net current transfers from ROW. So,

NGDI = Income from property and entrepreneurship accruing to the government administrative departments

+ Saving of non-departmental enterprises

+ Net indirect taxes (receivable from production units)

+ Corporate taxes

+ Direct taxes paid by households

+ Miscellaneous receipts of government administrative departments

- Net current transfers to private sector

- National debt interest

The sum of first two items is NDP_{fc} and the sum of first three is NNP_{mp} according to government. The sum of next three is current transfers receivable and the sum of last two is the current transfers payable.

Besides NGDI, we can also take the sum of retained earnings of private production units as the disposable income of the private corporate sector. So,

Net private corporate sector's disposable income (NPCSDI) = Saving of private corporate sector net of retained earnings of foreign companies

Net National Disposable Income (NNDI) can now also be taken as the sum of NPDI, NGDI and NPCSDI.

NNDI = Net personal disposable income

+ Net government's disposable income

+ Net private corporate sector's disposable income

5.7.4 Computation from the Uses Side

Disposable income from the 'uses' side equals consumption expenditure plus savings. Gross disposable income equals consumption expenditure plus gross savings, while net disposable income means consumption expenditure plus net savings. (when net saving = gross savings less consumption of fixed capital).

When computation from the 'uses' and 'sources' sides are compared, the two results must be the same, but in actual estimates they are not the same. It is because of differences in the sources of data for the two sides. This leads to errors in estimation and make the two results unequal. The equality is, however, imposed in presentation of data by introducing the item called '**statistical discrepancy'**.

CSO presents the two measures of NNDI in the form National Disposable Income and Appropriation Account and brings the equality between the two with the help of statistical discrepancy.

Table 5.5: NNDI and Appropriation Account of India (2004-05)

Rounded to Rs.billions (billion = 100 crores)

USES		SOURCES	
Private final consumption Expenditure	1004	NNP_{mp}	8440
Govt. final cons expenditure	5642	Net current transfers	
Net Savings	1432	From ROW	195
Statistical discrepancy	557		
Uses of NNDI	8635	Sources of NNDI	8635

Source: CSO – National Accounts Statistics (2005))

Like NNDI, we can also compute disposable income of private and government sectors from the uses side.

Check Your Progress 3

1) What is the assumption regarding treatment of 'net factor received from abroad' in computation of disposable income in India?

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2) Name the two variables the sum of which equals NDP_{fc} accruing to government sector.

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3) Why is interest on national debt a non-factor income?

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4) What is the assumption regarding the treatment of net-current transfers receivable from the ROW in computation of disposable income in India?

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5.8 LET US SUM UP

The concept of 'transfer' provides the link between national income and disposable income. A transfer is a payment against which no good or service or an asset is provided in return. A transfer which influences current income of both payer and receiver is called a 'current transfer'. A transfer which influences capital or wealth position of both the parties involving transfer of ownership of assets is called a 'capital transfer'. A transfer which is current for one party and capital for another party is called a 'mixed transfer' and by convention treated as a capital transfer.

Current transfers are of three kind: (1) current taxes (2) social benefit and social contributions and (3) others. Out of these, social benefits are receivable by households on account of sickness, unemployment, etc. Social contributions are actual or imputed payments to social insurance schemes made by employers.

Current transfers can be in cash or in kind. A cash transfer is in the form of payment of currency or transferable deposit. A transfer in kind is in the form of transfer of ownership of a good or asset or a service.

Disposable income is the maximum a unit or a sector can afford to spend on consumption goods or services during the accounting period without having to finance its expenditure by reducing its cash, or by disposing of assets or by 'increasing its liabilities'. It equals GNP accruing to a unit + net current transfers in cash receivable.

'Adjusted disposable income' is the maximum value of final consumption goods that a sector can afford to consume without having to reduce its net assets. It equals disposable income plus net social transfers in kind receivable.

From the sources angle, Gross National Disposable Income (GNDI) equals GNP_{mp} + net current transfers receivable from ROW. By subtracting consumption of fixed capital from GNDI, we get Net National Disposable Income (NNDI). From the uses angle, GNDI residents consumption expenditure plus residents gross saving. NNDI equals residents consumption expenditure plus residents net saving.

A sector's disposable income equals GNP_{mp} accruing to the sector plus net current transfers receivable from other domestic sector and ROW.

In India, disposable income aggregates are prepared and published by CSO. Only national disposable income and personal disposable income estimates are published. The computation is based on two assumption necessitated by data problems. First, only private sector receives or pays net factor income from and to ROW. Second, all transfers (whether current or capital) on private account received by private sector are current transfers (and all transfers on government account as capital transfers).

The various steps involved in computation of personal disposable income are summarized in Table 5.4. Al though CSO does not publish disposable income aggregates relating to government and corporate sectors, the same can be derived from this table.

5.9 KEY WORDS

Adjusted disposable income : Disposable income + social transfers in kind.

Capital transfer : A transfer involving ownership of assets in cash or in kind.

Current transfer : A transfer influencing current income of both payer and receiver.

Disposable income : Maximum a unit can afford to spend on consumption goods or services during the accounting period without having to finance its expenditure by reducing its cash, or by disposing of assets or by increasing its liabilities.

Social transfers in kind : Individual goods and services provided as benefits in kind to individual households by government and non-profit institutions serving households.

Transfer : A transaction in which one unit provides a good, service or asset to another unit without receiving from the latter any good, service or asset in return as counterpart.

5.10 SOME USEFUL BOOKS

United Nations, (1993); *System of National Accounts*, Oxford Unversity Press, New York.

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

Central Statistical Organisation, Government of India: (1989); *National Accounts Statistics: Sources and Methods*, New Delhi.

Central Statistical Organisation, Government of India (2005). *National Accounts Statistics 2004-2005*, New Delhi

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

5.11 ANSWERS OR HINTS TO CHECK YOUR PROGRESS EXERCISES

Check Your Progress 1

1) A) a, B) b, C) c

2) The expenditure by general government that benefits individual consumers is individual consumption expenditure. The expenditure that benefits community at large is collective consumption expenditure.

Check Your Progress 2

1) Maximum a unit afford to spend on consumption during an accounting period without having to finance its expenditure by reducing its cash, or by disposing of assets or by increasing its liabilities.

2) GNDI = GNP_{mp} + Net current transfers from ROW

3) NNDI = Residents consumption expenditure

   \+ Net current transfers from ROW

4) It is because such transfers lead only to rise in disposable income of the receiving sector and fall in that of paying sector by an equal amount.

Check Your Progress 3

1) Whole of net factor income received from abroad is assumed to be received by private sector only.

2) i) Income from entrepreneurship and property accruing to the government administrative departments.

   ii) Saving of non-departmental enterprises.

3) Because it is an interest on loan taken to meet consumption expenditure by general government.

4) all transfers, whether current or capital, received by the private sector are treated as 'current transfer' received by the whole of country.

UNIT 6 NATIONAL CAPITAL

Structure

6.0 OBJECTIVES

After reading this unit, you should be able to:

- distinguish between stock variables and flow variables and explain the relation between them;
- explain the concept of balance sheet;
- explain the meaning of national capital;
- explain the problems in measurement of national capital; and
- explain the uses of estimation of national capital.

6.1 INTRODUCTION

The use of economic resources gives rise to the flow of goods and services, and the factor incomes generated in this process is called national income. We have already studied the methods of measurement of national income in Unit 4. The topic of this unit is now measurement of values of economic resources in a country. Such resources comprise of land, subsoil assets, man made capital

and human capital. The population term used for all such resources in national income accounting is national capital. So far, in the practical world, there is not much of a serious attempt to measure national capital on a continuous basis.

Before we study methods of estimating national capital a distinction must be made between capital and wealth. Out of the two wealth is a broader term because there are certain assets which are wealth but not capital. Before we take up what constitutes wealth and which part of wealth is capital let us understand the distinction between the meanings of wealth and capital.

Wealth, in general terms, may be defined to be all the material possessions of a country. A wider definition of wealth would also include human beings in its scope. But since it is difficult to assign values to human resources, the scope of wealth is restricted to non-human resources i.e. to the material possessions. In comparison, capital may be defined as that particular portion of these possessions which is employed to earn profit, or, which is same thing as to produce further goods and services. Thus, all wealth is not capital though all capital is wealth.

Now, what is that non-capital portion of wealth? It is nothing but consumer durable assets. Thus, national wealth includes both capital goods and consumer durable assets. National capital includes only capital goods.

Sometimes a question is raised about the status of dwelling houses. These are no doubt part of wealth, but the question is that should they be included in the category of capital goods or not. There are arguments for and against. We will not go into these arguments. In our last five units, we have followed the treatment suggested by the UN System of National Accounts (SNA). If we go by the SNA, dwelling houses are included in capital stock of the country. In fact there is a distinct industrial sector called ‘services of owner occupied dwellings in the estimates of national income. So consistency in the estimates of national income and national capital requires that dwelling houses are treated as part of national capital. Indian estimates also follow this practice.

6.2 CONCEPTS USED

One way of explaining the difference between national capital and national income is through the distinction between ‘stocks and flows. The concepts of stocks and flows can also be used at the same time to explain the inherent relation and inter-dependence between capital and income.

As far as the measurement of national capital is concerned, the concept of national balance sheet comes most handy. Just like an individual unit’s balance sheet records the assets, liabilities and net worth of that individual, national balance sheet records assets, liabilities and net worth of the nation.

In the next three sections, we will explain he concepts of (1) Stocks, (2) Flows and (3) National balance sheet. More concepts will emerge in the process of explaining these concepts.

6.3 STOCKS AND FLOWS

A variable is treated a stock variable when its value is measured at a point of time. In national income accounting, stocks are a position in, or holding of, assets and liabilities at a point of time.

The crucial aspect of definition of a stock variable is the measurement of its value at 'a point of time'. It is usual practice in business accounts to value their stock position at the end of last day of the financial year, say, on 31st March. The position at the beginning of the first day of the next financial year, say, on 1st April is taken to be the same. All items which find place in the balance sheet are stock variables, like assets, liabilities and net worth. As such the balance sheet itself can be treated as a stock account. Other examples of stock variable are capital wealth, inventories, bank balance etc. When one talks of wealth, he would say that he had so much of wealth on so and so date. It means that his wealth position may have been different before or after that point of time.

A variable is treated a flow variable if its value is measued within a period of time. In national income accounting, flows refer to actions and effects of events that take place within a period of time. Accounting to the United Nations SNA (1993): "Economic flows reflect the creation, transformation, exchange, transfer or extinction of economic value; they involve changes in volume, composition, or value of an institutional unit's assets and liabilities".

The crucial aspect of the definition of 'flows' is measurement of its value 'within a period of time'. The usual practice in business accounts is to take of profits, wages, interest, rent, purchases, sales, payment of taxes, etc. during the accounting period, say, during 1.4.2004 to 31.3.2005 as from variables. As such, the profit and loss account of a business can be treated as flow account because most items recorded in this account are flow variables. Income, saving, consumption expenditure, investment, depreciation, dividends, retained earnings, rent, wages, interest, sales, output, change in inventories, etc. are all flow variables.

SNA distinguishes between two kinds of flows: (1) transactions and (2) other than transactions. All transaction, whether monetary or non-monetary are flows. All examples given above are transaction flows. Flows, other than transaction flows, are changes in the value of assets and liabilities that do not take place in transactions like discoveries, depletion of sub-soil resources, destruction by war, changes in value of assets due to change in price level, etc.

Stocks and flows, in national income accounting, are connected with each other. First, a stock variable is nothing but an accumulated sum of flows. For example, the amount of capital that exists at the beginning of a year is the accumulated sum of investments or capital formations (which are flows) of previous year.

Second, the use of stocks gives rise to flows. For example, use of capital (a stock) leads to flow of output and factor income (all flows). Bigger the stock bigger may be the flows. More the capital employed more may be the amount of output flowing.

Third, stocks are further built up or reduced by the flows. For example, fresh investment during the year (a flow) makes capital (a stock) higher during the beginning of the next year. Consumption of fixed capital (a flow) reduces the amount of capital (a stock) at the end of the year.

In this way national capital (a stock) and national income (a flow) are not only interconnected they are interdependent also. Large national capital means a bigger flow of national income. More the national income more is likely to be saving and investment and in consequence more national capital next period. It may again mean yet bigger flow of national income. Thus, when we study flows then a study of stocks is must. When we measure national income measurement of capital is must. It is in this context we study the measurement of national capital of a country.

6.4 CONCEPT OF BALANCE SHEET

A balance sheet is a statement, drawn up at a particular point in time, of the value of asset owned and the claims against these assets.

The assets are usually classified into two groups: physical (or non-financial) assets and financial assets. Physical assets are in the form of land, sub-soil assets, building, machinery and equipment, inventories, valuables, etc. Financial assets are in the form of currency, deposits, share, bonds, debentures, loans, securities, etc.

Claims against the assets owned by a unit are of two types: (1) Claims of other units, i.e. other than the owners and (2) Claims of the owners of the unit. Claims of non-owners are called 'liabiities'. These comprise of borrowings, bonds issued, securities issued, debentures issued, taxes payable, etc. If, for example, a borrows from B, then B has the claim on the assets of A to the tune of sum borrowed by A. If a corporate firm issues bonds these represent liabilities of the corporate firm but assets of those who buy it. Thus each liability is matched by an equal amount of financial assets in the whole system. Claims of the owners of the unit, in the language of balance sheet are called 'net worth (NW). It is a residual item and equals the excess of value of assets (A) over the liabilities (L). The balance sheet of a unit is thus best summarized as 'A=L+NW. A highly simplified format of a balance sheet of an institutional unit is presented below (Table 6.1). Imaginary figures are used to bring out the relationship more clearly.

Table: 6.1

Balance Sheet of an institutional unit
(As on March 31, 2005)

(Rs. Lacs)

Assets		**Claims**	
Physical assets	70	Liabilities (L)	40
Financial assets	30	New Worth (NW)	60
Total assets (A)	100	Claims on assets	100

The balance sheet thus brings out the capital position of an institutional unit. The above balance sheet states that net worth (or capital), as indicated by net worth, is Rs.60 Lacs. This provides a clue to the estimation of national capital of a country. It is merely the sum of net worths of all the resident institutional

units of a country. The methods of estimation of national capital are explained in detail in the coming sections.

Check Your Progress 1

Tick the correct answer:

1) Which one of the following is a stock variable?
   a) income
   b) investment
   c) capital
   d) change in inventory
2) Which of the following is flow variable?
   a) capital formation
   b) inventory
   c) wealth
   d) loans
3) Which of the following is correct?
   a) only stock variables influence flow variables
   b) only flow variables influence stock variables
   c) both stock and flow variables are influenced by each other.
   d) There is no relation between stocks and flows
4) A balance sheet is a statement which records:
   a) assets only
   b) liabilities only
   c) net worth only
   d) all these three
5) What indicates wealth of an institutional unit?
   a) physical assets
   b) financial assets
   c) excess of financial assets over liabilities
   d) excess of both physical and financial assets over liabilities

6.5 DERIVATION OF NATIONAL BALANCE SHEET

In the last section we explained the format of a balance sheet of an institutional unit. We can derive national balance sheet by summing up the balance sheets of all the resident institutional units of a country. We are not shifting from micro to macro level with the aim of measuring the national capital of a country. Keeping our aim in mind it is necessary to expose the composition of assets and liabilities. In this process we will come across certain relationship between financial assets and liabilities on the one hand, and between physical assets

and net worth on the other, which are true at macro level but not necessarily true at micro level.

6.5.1 Assets

Definition of an asset

By asset we mean economic asset. An economic asset is defined an entity which has two characteristics: (1) over which ownership rights are enforced, and (2) from which economic benefits may be derived by holding it or using it over a period of time. Thus, any asset which does not meet these characteristics is not treated as economic asset.

Categories of assets

Assets can be physical or financial. Physical assets are more popularly termed as non-financial assets. The later term is more comprehensive in that it includes both tangible assets and intangible assets while physical assets may be mistaken to be confined to just tangible assets. In view of this, in national income accounting assets are categorised into non-financial and financial assets.

a) **Non-financial assets (NFA)**

NFA are further categorised into produced and non-produced assets. **Produced assets** are those which come into existence as outputs from production processes. It consists of fixed assets, inventories and valuables.

Fixed assets can be tangible and intangible. Buildings, machinery and equipment, cultivated assets (like livestock, plantations) etc. are examples of tangible fixed assets. Mineral exploration, computer software, original entertainment films, sound recordings, manuscripts, tapes, models, etc. are examples of intangible assets. These assets are treated as economic assets only when acquired for production and not for final consumption. As such consumer durable held by households are not treated as economic assets.

Inventories include materials and supplies, work-in-progress, finished goods, goods for resale i.e. with traders, etc.

Valuables consist of precious metals and stones, antiques and other art objects like painting, sculptures, etc.

Non-produced assets come into existence other than through the process of production. These assets either occur in nature or come into existence by legal or accounting actions. Non-produced assets can be tangible or intangible.

Tangible non-produced assets are natural assets and consist of land, subsoil assets, non-cultivated biological resources and water resources, but only those over which ownership may be established and transferred and from which economic benefits may be derived. As such environmental assets (like open seas, air, etc.) are not treated as economic assets because no ownership rights can be established over these.

Intangible non-produced assets include patented entities, transferable contracts, purchased good will, etc. These come into existence by legal or accounting actions.

b) **Financial assets**

Financial assets are in the form of currency, deposits, securities (bills, bonds, debentures, etc.), loans, shares, trade credit, monetary gold, SDRs, etc.

All these meet general criteria of an economic asset. By monetary gold is meant the gold owned by the monetary authorities as a component of foreign reserve. SDR are Special Drawing Rights are international reserve assets created by the IMF and allocated to its members.

There is another characteristic of financial assets. Each financial asset held by one institutional unit has a counterpart liability on the part of another institutional unit. For example, consider a loan extended by company A to company B. This is a financial asset of company A but liability of company B. Currency held by public is the financial asset of the public and at the some time liability of the Central Bank of the country. As such all financial assets must have counterpart liabilities within the economic territory of the country or outside it. This is an important observation and is used in the measurement of national capital.

Another important aspect of financial assets relevant for estimation of national capital is **classification of these assets into 'domestic' and 'foreign'.** Domestic financial assets represent claims of residents over residents. Foreign financial assets are the claims of resident over non-residents.

6.5.2 Liabilities

Liabilities are simply the counterparts of financial assets. Each financial liability must have a counterpart financial asset in the system. Like assets, liabilities can be domestic or foreign. Domestic liabilities are counterparts of domestic financial assets held by residents. Foreign liabilities are counterparts of domestic financial assets held by non-residents.

6.5.3 Domestic vs. Foreign Financial Assets and Liabilities

Putting our observations about financial assets and liabilities together we can draw two conclusions:

1) Domestic financial assets held by residents **must equal** domestic liabilities of residents.

2) Foreign financial assets held by residents **may not equal** foreign liabilities of residents.

These two conclusions are extremely useful in measurement of national capital of a country.

6.5.4 Net Worth

Net worth of an institutional unit is the difference between the value of all asset-produced, non-produced and all financial liabilities at a particular moment in time. It is a balancing item. It represents the claims of the owners of the unit over the total assets held by the unit and equals the net wealth of unit. Net worth for the total economy is, therefore, the sum of net worth of its constituent sectors and represent the total capital of the economy.

6.5.5 Derivation of National Balance Sheet (NBS)

Given balance sheets of the constituent resident institutional sectors of an economy, we can derive national balance sheet (NBS) by simply combining and netting these balance sheets. When we combine we simply add balance sheets of the constituent sectors. It means that each variable in the NBS will be merely the sum of values of the same variable in the balance sheets of the constituent sectors. While netting we offset liabilities against financial assets. Netting gives such a shape to the NBS that it is possible to read directly the value of national capital.

Suppose there are only two resident institutional sectors A and B in an economy whose balance sheets are given to us (Tables 6.2 and 6.3)

Table 6.2: Sector A's Balance Sheet as on March 31, 2005

(Rs. Crores)

Assets		**Claims**	
Non-financial assets	120	Domestic liabilities	50
Domestic Financial assets	40	Foreign liabilities	20
Foreign financial assets	10	Net Worth	100
Total assets	170	Claims on assets	170

Table 6.3: Sector B's Balance Sheet as on March 31, 2005

(Rs. Crores)

Assets		**Claims**	
Non-financial assets	150	Domestic liabilities	40
Domestic Financial assets	50	Foreign liabilities	5
Foreign financial assets	5	Net Worth	160
Total assets	205	Claims on assets	205

Let us now combine the above balance sheets by combining them to obtain NBS netting.

Table 6.4: National Balance Sheet as on March 31, 2005

(Rs. Crores)

Assets		**Claims**	
Non-financial assets (120+150)	270	Domestic liabilities (50+40)	40
Domestic Financial assets (40+50)	90	Foreign liabilities (20+5)	5
Foreign financial assets (10+5)	15	Net Worth of A	100
		Net Worth of B	160
Total assets	375	Claims on assets	375

Note that in the above NBS the value of domestic financial assets equals domestic liabilities both equal to Rs.90 crores. This equality (but only at total economy's level) is a conceptual truth because each domestic financial asset

must have corresponding domestic liability of the equal amount. The same is not true about foreign financial assets and liabilities.

6.6 NATIONAL CAPITAL

6.6.1 Meaning

A nation's capital consists of all its resources that contribute to output. In the comprehensive sense both 'human and non-human resources are part of national capital. But due to the difficulties of measurement of the values of human resources, the scope of national capital as confined to only non-human resources.

National capital of a country equals the sum of non-financial economic assets and net claim on the rest of the world (ROW). An economic asset is one which is (1) acquired for production (and not for final consumption); (2) over which ownership rights can be enforced and (3) from which economic benefits are derived.

Non-financial assets (NFA) are of two kinds, produced and non-produced. **Produced assets** come into existence as outputs from production process and consist of fixed assets, inventories and valuables**. Non-produced assets** come into existence by legal or accounting actions and include both tangible (land, subsoil assets, water resources, etc.) and intangible (patents entities, transferable contracts, purchased goodwill, assets etc.) (See Section 6.7.1 for detail).

Net claim on ROW equals the excess of foreign financial assets over foreign liabilities. The value is positive when assets exceeds liabilities and negative when assets fall short of liabilities.

National capital can also be defined as the sum of net worth of the resident sectors. Net worth equals value of assets (both non-financial and financial) less value of liabilities. Net worth thus represents net capital of a sector. The sum total of such net worths of all the resident sectors of the economy represent national capital.

6.6.2 Measurement

The two angles of looking at national capital are reconciled in the National Balance Sheet (NBS) when netted. In the process of netting we offset liabilities against financial assets. Refer to Table 6.4 which gives NBS before netting. There are two pairs to be netted, domestic financial assets and liabilities and foreign assets and liabilities. Since by definition domestic financial assets, must equal domestic liabilities the netted domestic financial assets must be nil. As such this netted item can be removed from the netted NBS. But this is not so with foreign financial assets and liabilities. The two need not be equal at national level. As such the netted foreign financial assets is positive or negative depending upon the relative values of assets and liabilities. In our NBS, foreign financial assets equal Rs. (-)10 crores (=15-25). This represents net claims on ROW. The NBS when netted in this way is as follows:

Table 6.5: National Balance Sheet (netted) as on March 31, 2005

(Rs. Crores)

Assets		**Liabilities**	
Non-financial assets	270	Net Worth of Sector A	
Net claim on ROW	(-)10	Net Worth of Sector B	
National Capital	260	Claims on National Capital	

The above NBS (Table 6.5) now records the two angles looking at national capital of the country. The left hand side shows the composition of national capital. The right hand side shows the distribution of national capital among the resident sectors.

6.6.3 Composition of National Capital

SNA (1993) gives the following composition of national capital:

1) **NON-FINANCIAL ASSETS**

a) **Produced Assets**

i) **Fixed Assets**:

1) **Tangible fixed assets**: Dwellings other buildings and structures, machinery and equipments cultivated assets (livestock, orchards etc.

2) Intangible fixed assets: Mineral exploration; computer software; entertainment, literary or artistic originals; new information; specialized knowledge etc.

3) Inventories: Work in Progress: finished goods; goods for resale

4) Valuables: Precious metals and stones; Antiques and other affects like paintings, sculptures etc.

b) **Non-produced assets**

i) Tangible:

1) Land under buildings, structures, cultivation, recreation, surface water.

2) Subsoil Assets: Proven and economically exploitable coal, oil, natural gas, metallic minerals, non-metallic minerals.

3) Water resources

ii) Intangible

1) Patented entities

2) Lease and other transferable contracts

3) Purchased goodwill

2) **NET CLAIMS OVER THE REST OF WORLD**

i) Foreign financial assets

Less ii) Foreign liabilities

6.6.4 Problems in Estimation

In most countries estimates of national capital are not made on continuous basis. There are two major type of problems. First, there is lack of data. Second, there are problems in valuation of assets and liabilities.

1) **Lack of data**

Balance sheet of production unit is the direct source of data. But this source is limited by many factors. First, only organized units (mainly corporate and quasi-corporate) do really prepare balance sheets. The unorganized units (unincorporated) normally do not care to prepare balance sheet. The problem is bigger in developing countries, like India, where the proportion of unorganized unit is very high.

Second, even if balance sheets are available, how should estimators reach these balance sheets. Only corporate sector is legally required to submit balance sheets to the concerned government departments. How to obtain other balance sheets is a problem. There is no alternative but to make some indirect estimates. This may involve high degree of guess work.

2) **Problems of valuation**

There are large number of assets and liabilities in the whole economy. The valuation must be such that it reflects the economic behaviour of the units. Also, the same method, as far as possible, must be used for all units. There are different types of problems in valuation of non-financial and financial assets.

i) **Non-financial assets**

These assets can be produced or non-produced. Normally, there is a choice between two methods of valuation, book-value and current market value. Book value is the cost at which the asset was originally acquired. Out of the two, the current market value is preferred because it forms the basis of decisions by investors, producers, consumers and other economic agents. But balance sheets by convention record only book values. So, even if balance sheets are available, there is the problem of converting book-values into current market values.

There is an additional problem regarding tangible non-produced assets consisting of land, sub-soil assets and water resources. It is difficult to determine the physical dimensions of such resources. Since, such resources are not actively traded in the market, it is also difficult to assign meaningful values of these resources.

ii) **Financial assets**

Valuation of financial assets creates special problems in estimation of national capital. The problem is not much of determining current market value, the real problem is that the accounts of debtors and creditors may record different value of liability and asset . Suppose company A (debtor) issues bonds of

Rs.100 each. The original buyer (the creditor) pays Rs.100 for a bond. But the market value of bond fluctuates with change in the market rate of interest. Suppose after one year, it comes down to Rs.90. In this situation, the company's account would continue to record the value of bond asRs.100 while the creditor would have Rs.90 in its record. This defies our basic assumption that each liability has an equal amount of asset somewhere in the system. This creates problems in netting process. The value of financial assets may not match the value of financial liabilities.

6.6.5 Uses

Estimates of national capital have number of uses:

1) **Indicates the composition of economic resources of a nation**

Data on natural resources is useful for monitoring the availability and exploitation of these resources and for formulating environmental policies. Data on produced assets, i.e. fixed assets, inventories, etc. is useful for analyses of production and productivity.

2) **Useful for assessing distribution of capital**

The data on net worths of different sectors of the economy can be used to assess the equitableness of distribution of wealth among different sectors of the economy.

3) **Useful for assessing economic and financial conditions and behaviour**

Wealth variables often determine consumption and saving functions of households. In turn, they determine the purchasing patterns of households.

4) **Indicates external debtor or creditor position of a country**

Data on foreign financial assets and liabilities measure net claims of resident units over the rest of the world. From this, we can assess the creditworthiness of the country.

Check Your Progress 2

1) What are the two characteristics of an economic asset?

.....

.....

.....

2) Distinguish between produced and non-produced assets.

.....

.....

.....

3) What is the meaning of 'net worth'?

.....

.....

.....

4) Define national capital?

.....

.....

.....

6.7 LET US SUM UP

The concepts of 'stocks' and 'flows' are useful in explaining inter-relationship and inter-dependence between national capital and national income. A stock variable is a variable which is measured at a point of time. Capital, wealth, assets, liabilities are some examples. A flow variable is a variable which is measured within a period of time. Profits, income, investment, sales, output are some examples.

Stocks and flows are inter-related. First, a stock variable is nothing but the accumulated sum of flows. Second, the use of stock gives rise to flows. Third, stocks are further built up or reduced by flows.

Balance sheet is the source of data for estimation of national capital. It is a statement drawn up at a particular point in time, of the values of assets owned and claims against these assets. Claims are in the form of liabilities and net worth. The balance sheet of a unit is best summarized as A = L+NW. The net worth indicates the capital position.

We can obtain national balance sheet by summing up the balance sheets of its constituent sectors. In national balance sheet, assets are classified into non-financial and financial assets. Non-financial assets can be 'produced' and 'non-produced. Produced assets consist of fixed assets, inventories and valuables. Non-produced assets can be 'tangible' and 'intangible' Tangible assets are land, sub-soil assets, water resources, etc. over which ownership may be established and economic benefit derived. Intangible assets are patented entities, transferable contracts, purchased goodwill, etc. and come into existence by legal or accounting actions. Financial assets are in the form of currency, deposits, securities, loans, shares, trade credit, monetary gold, SDR etc. Each financial asset has a counterpart liability. Liabilities are simply the counterparts of financial assets. Net worth is the difference between value of all assets and all liabilities at a particular moment in time. The sum total of net worths of all the resident sectors of an economy is the national capital of the whole economy. By combining the balance sheets of resident sectors, we can obtain national balance sheet (NBS).

A nation's capital consists of all its resources that contribute to output. The estimation of national capital is confined to non-human resources. National capital equals the sum of non-financial economic assets and net claim on the rest of the world (ROW). Net claim on ROW equals the excess of foreign financial assets and foreign liabilities. National capital also equals the sum of net worth of the resident sectors. The two sides of the netted NBS show these two angles of looking at national capital.

The main problems in estimation of national capital are (i) lack of data and (2) problems in valuation of both non-financial and financial assets. The main uses of the estimates of national capital are: (1) indicates the composition of

economic resources; (2) useful for assessing distribution of wealth; (3) useful for assessing economic and financial conditions and behaviour, and (4) indicates external debtor or creditor position of the country.

6.8 KEY WORDS

Flow variable : A variable whose value is measured within a period of time. Economic asset: An entity over which ownership rights are enforced and from which economic benefits may be derived.

Intangible non-produced assets : Assets which come into existence by legal or accounting actions like patented entities, transferable contracts, purchased goodwill, etc.

National capital : All resources that contribute to output.

Net Worth : Difference between value of all assets and all liabilities as a particular moment in time

Non-produced assets : Assets which occur in the nature or come into existence by legal or accounting actions.

Produced assets : Those assets that come into existence as output from production process.

Stock variable : A variable whose value is measured at a point of time.

Tangible non-produced assets : Natural assets consisting of land, sub-soil assets, water resources etc.

6.9 SOME USEFUL BOOKS

United Nations (1993), *System of National Accounts (1993)*, New York, U.N.

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

Hicks, J.R.; (1997), *The Social Framework*, New Delhi, Oxford University Press.

Agarwala, S.K. (1998), *National Income Accounting*, New Delhi, Bookland Publishing Co.

6.10 ANSWERS OR HINTS TO CHECK YOUR PROGRESS EXERCISES

Check Your Progress 1

1) c

2) a

3) c

4) d

5) d

Check Your Progress 2

1) Economic assets are those (a) over which ownership rights are enforced and (b) from which economic benefits may be derived by holding it or using it.

2) Produced assets come into existence as outputs from production process. Non-produced assets either occur in nature or come into existence by legal or accounting actions.

3) Net Worth is the difference between the value of all assets and all liabilities at a particular moment in time. It indicates capital position.

4) A nation's capital consists of all its resources that contribute to output. It is also the sum of net worths of all the resident institutional sectors sum of non-financial economic assets and net claim on the rest of the world. It is of a country.

UNIT 7 EVOLUTION OF NATIONAL INCOME ACCOUNTING WITH SPECIAL REFERENCE TO INDIA

Structure

7.0 OBJECTIVES

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

- describe the evolution of national income accounting in India;
- discuss the national accounting procedure in pre-independence India; and
- critically evaluate the present state of national income accounting in India.

7.1 INTRODUCTION

In many advanced countries of the world, we have information on the growth of national income in the past. A comprehensive indicator of this nature is very useful in tracing the economic history of the nation. Unfortunately information on this topic is not available for India in any reliable form and we cannot say with certainty that, today, our level of per capita income is higher or lower than that in 1900 or in 1850 and by how much. In this respect our knowledge about the period 1850 to 1900 is nearly non-existent. The position is somewhat better in respect of the first half of the 20th century. A fairly large number of estimates, of course, of very uneven quality are available for the period. After independence, time series (annual) estimates of national income and related aggregates are available.

The evolution of national income in general is discussed in section 7.2. Section 7.3 discusses its evolution in India. The discussion on evolution of national income in India is bifurcated between the Pre-Independence period and Post-Independence period, with emphasis on the latter. For a comprehensive review

of the estimates prepared for the pre-independence period one may refer to M. Mukherjee's book National Income of India, Trends and Structures (1969).

7.2 EVOLUTION OF NATIONAL INCOME ACCOUNTING IN INDIA

The idea of national income can be traced back to the 17th century when Sir William Petty of England made the first known estimate in 1665. Gregory King followed Petty in giving a breakdown of national income, as well as aggregate figures for 1688. His estimates included the national income, the national expenditure, and the national saving as well as the distribution of these aggregates among the different social and occupational classes.

In France, Boisguilleberts introduced the concept of measurable national income and prepared the first estimate of national income of his country in the last quarter of seventeenth century. A number of estimates were published during the 18th and the 19th century by different researchers for England, France and some other European countries. England was, however, the acknowledged leader in this field. This tendency of preparing estimates of national income continued for the first two decades of the 20th century. England was, however, the acknowledged leader in this field. This tendency of preparing estimates of national income continued for the first two decades of the 20th century. In **United States** the initial estimates were made only in 1843 by George Tucker. Adam Smith, Karl Marx, Alfred Marshall, A.A. Walras and J.M. Keynes laid the modern theoretical groundwork for national income analysis.

In the inter-war decades of the twenties and thirties, national income estimates were stimulated by the problems of reconstruction and the Great Depression. In 1918, estimates were being prepared for 13 countries, and by 1939 for thirty-three countries. Most of these were private efforts, with aids from non-governmental institutes. Among the pioneering individuals are Simon Kuznets in the U. S., Colin Clark in England and Ragnar Friesch in Norway.

Nine countries began making official estimates, extending them back in time to develop a continuous series. In 1944, national income estimators of England, Canada and the US met in Washington to establish uniform procedures. The result was the first international agreement on the conceptual methods and presentation of national income estimates. During and after World War II, the responsibility for national income estimates became almost universally a government task. Increasingly, these estimates began to be used for fiscal programmes and government planning. By 1957, ninety-two countries were preparing national income estimates. At international level, League of Nations for the first time published in 1939 national income estimates for 26 countries giving the estimates for all or part of the period 1929 to 1938. Estimates for half the countries were compiled as official estimates and for the rest as academic or other private studies.

When the Second World War ended there was an immediate need for comparable measures of national income as a basis for apportioning the expenses of international organisations. To help address this need, a Sub-Committee on National Income Statistics of the League of Nations Committee of Statistical Experts was formed. The Committee submitted its report in 1947. The Report gave the concepts and definitions of national income and related aggregates and the methodology of their estimation based on the experience in

national accounting accumulated in the early post-war years. By 1950 the United Nations Statistical Office was able to assemble estimates from country sources for National Income Statistics, 1938-48 for several years from 41 countries. A standardised System of National Accounts (SNA) was published in 1952 and a revised version in 1953.

As the work relating to national accounting progressed in different developing and developed countries of the World and as there were many improvements and extensions in this field of research; a revised SNA was issued in 1968. This revised SNA is the basis of preparing national accounts of different countries of the world. By the early 1970s, about 120 countries were reporting national accounts statistics to the United Nations for inclusion in the Year Book, and 40 more were added a decade later. SNA of 1968 has again been revised in 1993. The revised SNA has to replace the 1968 SNA over years to come.

7.3 EVOLUTION OF NATIONAL INCOME IN INDIA

7.3.1 Pre-Independence Period

The estimate of National Income in India was, for the first time, prepared by Dada Bhai Naoroji for the year 1867-68. Since then various estimates have been prepared from time to time by different persons. Estimates for seven points of time are available for the second half of the 19th century and 35 point estimates are available for the pre-independence period of the 20th century. In addition, a few time series estimates have been prepared for the first half of the 20th century or a part of the period (See M. Mukherjee, 1969). The following table gives certain broad details about the more important of the estimates prepared by different researchers.

Table 7.1: Estimates of National Income: Before Independence

Author	Territory covered	Year when attempted	Year for which estimated	Per Capita Income (Rs.)
1. Dr. Dada Bhai Naoroji	British India	1876	1868	20
2. Baring and Barbour	"	1882	1882	27
3. Lord Curzon	"	1901	1897-98	30
4. William Digby	"	1902	1899	18
5. F.G.Atkinson	"	1902	1875	27.3
6. F. G. Atkinson	"	1902	1895	35.2
7. Sir B. N. Sarma	"	1921	1911	50
8. Findlay Shirras	"	1922	1921	107
9. Shah and Khambhata	Whole of India	1924	1921	74
10. Wadia and Joshi	British India	1925	1913-14	44.3
11. Vakil and Muranjan	Whole of India	1926	1910-14	58.5
12. V. K. R. V. Rao	British India	1938	1931-32	62

Source: Rao, V.K.R.V., (1940), *The National Income of British India*, 1931-32, Pub: Macmillan and Co. London, p.2.

The estimates prepared by individual researchers related to different time periods, and their method of estimation as well as geographical coverage varied. There were conceptual differences among estimators which made their results divergent. Also the estimates were at current prices, and therefore, were incomparable without adjustment for price changes.

The estimates were severely limited by data availability. Estimates of agricultural production were unreliable. Estimates of industrial production were patchy in the extreme. In spite of these difficulties it is highly creditable for the researchers to prepare the estimates of national income of India.

7.3.2 Post-Independence Period

National Income Committee

Since independence, to meet the requirements for planning and policy, due attention has been given to the development of official estimates of national income and related aggregates. Recognising the need for providing estimates of national income on a regular basis, the Government of India set up 'The National Income Committee' in August 1949 under the Chairmanship of P.C. Mahalanobis with D. R. Gadgil and V.K.R.V. Rao as members.

The Committee was asked to make recommendations regarding the compilation of estimates of national income, the improvement of statistical data on which the estimates were to be based and to suggest measures to promote research in the field of national income.

To assist the Committee a 'National Income Unit (NIU)' was set up. It was for the first time that this Committee provided the estimates of national income for the entire Indian Union. The estimates and details of the methodology adopted were published in the first and final reports of the National Income Committee brought out by the Ministry of Finance in 1951 and 1954, respectively. The Committee recommended preparation of national income estimates on a regular (annual) basis.

Accepting this recommendation, the Government of India transferred the entire establishment of NIU, then working for the Committee, to the Ministry of Finance to take charge of the work on a regular basis. The work of estimation was later transferred to the Central Statistical Organisation (CSO) and a full fledged National Income Division was created which is now designated as National Accounts Division (NAD) in conformity with the expansion of its activity.

The Final Report of the Committee gave the sector-wise estimates of national income for the years 1948-49 to 1950-51. As per the methodology and the pattern of presentation recommended by the NIC, the first official estimates of national income at constant prices were prepared by the CSO with base year 1948-49. These estimates at constant prices along with the corresponding estimates at current prices and the accounts of the public authorities were published in 1956 in the publication 'Estimates of National Income'. This series commonly known as the conventional series was continued to be published till 1966 under the same title.

Revised Series with base 1960-61: Subsequent to the publication of the Final Report of the NIC, there were various studies on the sources of data and

suitability of the methods adopted by the NIC in the preparation of national income estimates. With the gradual improvement in the availability of basic data over the years, a review of methodology of national income estimation and its extension to other fields of macro-economic aggregates was undertaken with a view to update the data base and to shift the base year from 1948-49 to a more recent year. Special efforts in this regard were made for a comprehensive review of all available data both published and unpublished. The first results of these efforts were presented in the **National Income Statistics - Proposals for a Revised Series**, for National Income Estimates 1955-56 to 1959-60 (CSO, 1961). These proposals were sent for comments to experts in the field of national income and to various official and non-official research organisations. These proposals were also discussed at a seminar specially convened for the purpose. In the light of the views expressed by various experts, several follow-up studies were undertaken. The 'proposals' as improved/amended on the basis of the studies along with estimates as per the revised series of national income with 1960-61 as the new base for estimates at constant prices were published in the '**Brochure on the Revised Series of National Produce 1960-61 to 1964-65** (CSO, 1967) replacing the earlier series with base 1948-49.

During this period two other developments took place. First, the name of National Income Unit was changed to National Income Division (NID). Secondly, the Brochure of 1967 used the term 'National Product' in place of the term 'National Income'. The main improvements in the new series related to:

a) agriculture where all-India estimates are obtained by aggregating the state-wise estimates which are based on the fully revised estimates of output of agricultural commodities, revised yield rates of minor crops, livestock products and agricultural bye-products, wider empirical base for data on prices and use of latest data on cost of deductions;

b) large scale manufacturing where the detailed data thrown up by the **Annual Survey of Industries** along with the provisional index of industrial production with 1960 base, have been used;

c) unorganised sectors like unregistered manufacturing, transport other than railways, trade, hotels and restaurants and other services where the national sample survey data supplemented by the results of other available surveys and the 1961 Census of population based work force estimates have been used'

d) construction, where expenditure and commodity flow approach instead of income approach have been adopted;

e) real estate and ownership of dwelling, where the estimates have been prepared on the basis of number of residential houses reported in the 1961 Census; and

f) Public Administration and Defence.

After the Brochure on the estimates of national product in 1967, two other Brochures; one, on the '**Estimates of Savings in India**, 1960-61 to 1965-66' and the other on the **'Estimates of Capital Formation in India** - 1960-61 to

1965-66' were brought out by the CSO in 1969. The estimates of savings in the economy have been split up into three sectors - Public Sector, Private Corporate Sector and Household Sector. The Brochure, on capital formation, gives the estimates of gross and net capital formation in India, both at current and 1960-61 prices separately for (i) Construction, (ii) Machinery and Equipment, and (iii) Changes in stocks. The other classification of the capital formation was into (i) Public Sector split-up into General Administration and Defence, and Public Sector Undertakings and (ii) Private Sector split up into Corporate Sector and Household Sector.

After the introduction of the new series the title of the annual publication was changed to 'Estimates of National Product. A need was feet gradually from time to time to incorporate the estimates of private consumption expenditure, saving, capital formation, factor incomes, consolidated accounts of the nation and detailed accounts of the public sectors. The title of the publication was therefore, again changed to the present title '**National Accounts Statistics** (NAS)' with effect from January 1975 to depict the expanded scope of the publication.

Further to meet the demand of the users a special supplement "National Account Statistics, 1960-61 to 1972-73 - Disaggregated Tables (CSO, 1975)" was brought out. This publication included disaggregated tables on output, input, value added, private consumption expenditure, saving and capital formation. While the publication presented the estimates at current prices for the years 1960-61 to 1972-73, those at constant (1960-61) prices were presented for the entire period of 1950-51 to 1972-73. From the subsequent issue, the NAS 1976, all those tables presented in the special supplement became regular features of the NAS.

Revised Series with base 1970-71: The base year of the revised series was subsequently changed from 1960-61 to 1970-71 (hereafter referred to as 1970-71 series) and the estimates according to 1970-71 series were published in NAS, January 1978. These estimates had the same scope, coverage and methodology as for earlier series included in NAS October, 1976 (latest available for 1960-61 series). These estimates were based on the latest available data from various sources, like population Census, livestock Census, various sample surveys and ad-hoc studies undertaken in the NAD. The detailed methodology of the estimation used in this revised series was published in the special publication known as "**National Accounts Statistics: Sources and Methods**, April 1980".

New Series with Base 1980-81: The period revision of the series continued and CSO released a new series of national accounts aggregates with 1980-81 as base year (hereafter referred to as '1980-81 series') in February 1988. This series has been introduced after a comprehensive review of the data base as well as the methodology employed in the estimation of various aggregates. It also involved a number of revisions arising out of the latest available data. The revisions brought about for the '1980-81 series' are the results of a large number of studies including those for the estimation for consumption of fixed capital, based on the estimates of fixed capital stock prepared by the NAD. The improvements proposed for the '1980-81 series' were considered in depth at the Pune Seminar and Conference of the Indian Association for Research in National Income and Wealth (IARNIW) held in December, 1984 and

November, 1985 respectively. These proposals and the consequent changes were discussed in detail by the Advisory Committee on National Accounts Specially convened for this purpose in April 1986 and June 1987.

For this series, efforts have been made to use as much current data as possible. For instance, the proportions based on the old bench mark surveys have replaced. Further, the results of the latest population Census, livestock Census, All India Debt and Investment Surveys, follow-up surveys of Economic Census (EC), Cost of Cultivation Studies, etc. have been made use of. The EC and its follow-up surveys have been particularly designed to fill he data gap pertaining to unorganised segments of the non-agricultural sectors of the economy.

The estimates of this series were initially brought out for 1980-81 to 1985-86, through a Brochure issued in February, 1988. The usual NAS publication with 1980-81 series was issued in May, 1988 and since then we are having the estimates with 1980-81 as base year. CSO brought out a special publication - **National Accounts Statistics - Sources and Methods**, 1989.' This publication has discussed in details, the improvements and revisions made in the new series, the methodology adopted in preparing the estimates, and the source material utilised for the purpose. The concepts and definition have also been explained.

Revised Series of National Accounts with 1993-94 as Base

The series with base 1980-81 has now (in the year 1999) replaced by the Revised Series with 1993-94 as base. The detailed methodology of the revised series has not yet been published. Broadly, the following revisions have been affected in the series:

i) the estimation of income from unregistered manufacturing and service activities have been made on the basis of new estiamtes of work force based on NSSO Surveys instead of estiamtes derived from population censuses.

ii) Several new products have been included in many a sectors. For example, in the agricultural sector several horticulture and floricultural crops have been added.

iii) Improvement has been affected in the coverage of existing products.

iv) There is methodological improvement in applying a new indicator of constant price estimates for banking and insurance. There is also an improvement in allocation of inputed banking charges to industries and final uses.

v) There is a major change in the use of the data generated from the Annual Survey of Industries (ASI). This change is made possible by the reduction of time large in the availability of data from about 3 years to about 9-10 months.

So far (in 1999) the data in the revised series is available only for the period 1993-94 to 1997-98. CSO has also decided to change the base every five years.

Check Your Progress 1

1) Write a brief note (in 100 words) on the early attempts on estimating the national income in Europe.

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2) i) State very briefly attempts made to estimates the nation income of India before the Independence. What were their limitations?

ii) State five prominent names that brought out the estimates.

3) Complete the following sentence.

i) The Government of India set 'The National Income Committee' in ..... under the chairmanship of .....

ii) The other members of the Committee were .....

4) CSO brought out the first estimates of National Income at constant prices at the prices of the year .....

5) State till now, how many times base year for the estimates of NI have been revised. Give the years for each revision.

7.4 CONTENTS OF THE NATIONAL ACCOUNTS STATISTICS IN INDIA

The National Accounts Statistics (NAS) are prepared by the Central Statistical Organisation (CSO). NAS present the estimates onwards both at current and constant prices is the statistics are divided into 5 parts:

Part I **- 'Macro-Economic Aggregates'** This part presents the summary statements of macro-economic aggregates and their relationship, growth rate, implicit price and quantity deflators, consolidated accounts of the nation covering all principal transactions of the economy and performance of the Public Sector.

Part II **- 'Domestic Product'.** This part presents statements on gross and net domestic product by kind of activity (agriculture, forestry, fishery, mining, manufacturing, etc.) along with their percentage distribution.

Part III - **Consumption, Saving, Capital Formation and Capital Stock**. This part provides the estimates of private final consumption expenditure (PFCE) domestic saving, capital formation and capital stock.

The estimates of saving are presented by type of institution. The estimates of gross and net capital formation are presented by type of assets, by type of institutions and by industry of use . The estimates of net capital stock have been given by type of institution and by industry of use.

Part IV **- 'Public Sector Transactions** . This part deals with the transactions of the Public Sector. Along with details of value added, consumption expenditure, saving and capital formation, this part also presents the economic accounts separately for administrative departments and departmental and non-departmental enterprises. Purpose-wise details of both current and capital

expenditures of administrative departments also presented in this part. Separate presentation of accounts in respect of railways and communication is a special feature .

Part V **- 'Disaggregated Statements**. This part contains disaggregated tables which include the details of gross value of output, input, and value added for each of the sectors. Besides, disaggregated estimates in respect of saving relate to financial assets and liabilities of the household sector. Capital formation by type of assets and by type of institution and external transaction accounts are also presented in this part. This part also contains Factor Incomes and Property Incomes by organised and unorganised sectors and by economic activity (sectors).

This publication also presents at the end a section on 'Notes on Methodology which provides information on the revision in the estimates indicating broadly the changes in the methodology, new source material used, etc., for he benefit of the user.

Check Your Progress 2

1) State the main parts of the present National Accounts Statistics published by CSO.

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2) What information does the 'Notes on Methodology' given at the end of the National Accounts Statistics present?

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7.5 LET US SUM UP

The evaluation of national income can be traced back to the first known estimate of national income by Sir William Petty of England in 1665. A few other estimates were issued by the end of 17th century. A number of estimates were published the 18th century and 19th century by different researchers of England, France and a few other countries. In USA the initial estimators were made only in 1843 by George Tucker. By the end first four decades of 20th century, thirty three countries had started compiling estimates of national income. In 1944, a meeting of national income estimates was held in Washington to established uniform procedures for preparing the estimates. A standardised system of national accounts (SNA) was published in 1952 and a revised version in 1953. SNA was revised in 1968. Most of the countries are at present following SNA 1968. The latest revised SNA is available for 1993.

In India, the first estimate of national income were prepared by Dada Bhai Naoroji for 1867-68. Since then various estimates were prepared from time to time until the task of preparing these estimates was given to the CSO. The first official estimates were given by the National Income Committees. The first estimates by CSO were published in 1956 in the publication 'Estimates of

National Income'. Since then the estimates are being regularly published by the CSO. With the passage of time, new and improved data sources as well as improved methodology has been used for preparing the estimates. The base periods have been changed a number of times. The present base period is 1993-94. Now there is a plan to change it every five years. The scope of the publication has been enlarged by the inclusion of estimates of private consumption expenditure, saving and capital formation and the division of the sector-wise national income into different factors of production as well as between organised and unorganised sectors of the economy. The name of the publication is changed to **National Accounts Statistics**, and in place of 'national income' SCO uses the terminology national product.

7.6 KEY WORDS

Assets : Goods which produce a stream of returns in the future

Macro-economic Aggregates : Indicators that provide an understanding about the state of the overall economy, like inflation, unemployment, national income

Unorganised Sector : Sector which is engaged in industrial production but is outside the factory method of production and where each unit employs few workers.

7.7 SOME USEFUL BOOKS

Sam Rosin; 1963, *National Income: Its Measurement, Determination and Relation to Public Policy*; Hot, Rinchart and Winston Inc., New York,.

M. Mukherjee; 1969, *National Income of India: Trends and Structure*; Statistical Publishing Society, Calcutta,.

D. P. Bhatia; 1996, *National Accounting: Concepts and Estimates*, Khanna Publishers, New Delhi,

Central Statistical Organisation; *1989, National Accounts Statistics: Sources and Methods,*.

7.8 ANSWERS OR HINTS TO CHECK YOUR PROGRESS EXERCISES

Check Your Progress 1

1) See sub-section 7.3.1 and answer.
2) See sub-section 7.3.1 and answer.
3) (i) 1949; P.C. Mahalanobis
   (ii) D.D. Gadgil and V.K.R.V. Rao
4) See sub-section 7.3.2 and answer.
5) See sub-section 7.3.2 and answer

Check Your Progress 2

1) See section 7.4 and answer
2) See section 7.4 and answer

UNIT 8 APPLICATIONS OF NATIONAL INCOME ACCOUNTS

Structure

8.0 OBJECTIVES

After going through the units, you will be able to:

- explain the use of national accounts in measuring standard of living;
- describe the process of comparison of national income across time and space;
- discuss the use of national income accounts for policy purposes and planning; and
- analyse the use of a database of the economy in studying relationships among macro-variables in the economy

8.1 INTRODUCTION

There are several important uses of the estimates of national income and related aggregates. These uses vary from validation of basic data to the complex analytical issues relating to policy formulation. National income estimates not only provide a single figure but also provide supply estimates by broad sectors of the economy. The aggregate as well as sector-wise estimates of national income throw light on the functioning of the economy. Because of the importance of the estimates, CSO in India has been preparing and publishing the estimates since 1956. Over period of time the extent of the coverage has been enlarged, the data base as well as the methodology has improved. In this

unit we discuss some of the important uses of the estimates of national income and its related aggregates like consumption and investment.

8.2 APPLICATIONS

8.2.1 Measure of Standard of Living

The estimates of national income and per capita income (derived by dividing the total national income by the population) give us an average income and standard of living of the people. Economic welfare depends to a considerable degree on the level of national income and its distribution. Therefore, to know about the level of economic welfare it is essential to have estimates of national and per capita income.

Here it may be mentioned that there are certain problems in taking per capita income as the only measure of standard of living or that of development of the economy. The per capita income may be high even when only a few people are very rich and a vast majority of people are poor. The process of economic development is a complex phenomenon and is influenced by many factors. If the income of a vast majority of people are low but free health and educational services are provided, the standard of the people will be better than if no free services are provided. Also the well being of the people depends on the composition of the output. If luxuries are being produced in relatively greater quantities than necessaries, there will be shortage of goods for the poor people.

Nowadays in addition to national income, a number of development indicators are being suggested for evaluating standard of living or development. Growth in national income is possible without development, but for development growth is essential.

8.2.2 Comparison Across Time and Space

By comparing national income over a period of time we can know whether the economy is growing or not. If national income increases over years, it means the economy is growing and if national income is falling, it indicates that the economy is declining.

For having meaningful comparison of national income over time the effect of change in prices has to be removed. If the money value of national income of an economy is increasing by 2% every year and if the prices are also increasing by 2%, then there is no real growth in the economy and it is stagnant. The comparison of the estimate of national income over time can be done only in real terms i.e. if the estimates are prepared at constant prices. Because of this reason, the CSO is preparing the estimates of national income both at current and constant prices.

The incomes of different regions can be compared to study the regional disparities in incomes. Some of the regions may be more developed while some others may be less developed e.g. Punjab is more developed than Assam. The per capita income, along with certain other indicators, gives us an idea of regional disparity. These estimates of different states are a guide in deciding the allocation of central funds to various states.

8.2.3 Sectoral Distribution of Income

The estimates of national income show contributions of different sectors of the economy, such as agriculture, manufacturing, transport, electricity services etc. From the sectoral break downs of national income, one could study the broad sectoral shifts in an economy over time. For example, based on the sectoral estimates it can be said that agriculture is overwhelmingly important for the Indian economy. In fact in the past Indian economy used to be called an agricultural economy. The contribution of gross value added from agriculture decreased from 35.8% in 1980-81 to 22.2% in 2000-2001 (at 1993-94 prices). The contribution from manufacturing industries increased from 13.8% to 17.2% during the same period. The contribution from other sectors also showed an increase over this period. This shows that over period of time there is a shift from agriculture (in 1950-51, the contribution from agriculture was 50.2%) to manufacturing and other sectors. That means more emphasis is being given to infrastructure and industries.

8.2.4 Income Distribution by Factors of Production

National income estimates throw light on the distribution among different categories of income such as wages, profits, rent and interest. The distribution of income into wage and non-wage income is of special importance, since the inequality in the personal distribution of income depends to a great extent on the share of working class (wages) and the share of property owners. From the **size distribution** of income one can have an idea about the number of people who are poor.

8.2.5 International Comparison of National Income

National accounts are used for reporting to international agencies like U.N. Statistical Office. **U. N. Year Book** on **National Accounts** gives national and per capita incomes of more than 120 countries. The national accounts statistics should confirm to standard, internationally accepted concepts, definition and classifications. The resulting data are widely used for international comparisons of the volumes of major aggregates such as GDP or GDP per head, and also for comparisons of structural statistics, such as ratios of investment, taxes, or government expenditures to GDP. Such comparisons are used by economists, journalists and other analysts to evaluate the performance of one economy against that of other similar economies. They can influence popular and political judgements about the relative success of economic programmes in the same way as developments over time within a single economy. Data bases consisting of a set of national accounts for groups of countries can also be used for econometric analysis.

Levels of GDP, alternatively, gross national income (GNI) per head in different countries, are used by international ogranisations to determine eligibility for loans, and or other funds or conditions on which such loans, and or funds are made available and also to determine the share of their contributions to expenditures of various international bodies.

There are certain inherent problems in the international comparison of the estimates of national incomes of different countries, because of different currencies and different set of prices prevailing in these countries. For comparing the values of goods and services produced or consumed per head,

data in national currencies must be converted into a common currency by means of purchasing power parities and not exchange rates. It is well known that, in general, neither market nor fixed exchange rates reflect the relative internal purchasing powers of different currencies. Exchange rate converted data cannot, therefore, be interpreted for measuring the standard of living of different countries.

Check Your Progress 1

1) Briefly describe how national income accounts can be used to measure standard of living.

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2) What measures have to be ensured for a meaningful comparison of national income estimates across time and span?

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8.3 PLANNING AND POLICY PURPOSES

National income estimates also contain the estimates of consumption, saving and capital formation. Information regarding consumption, saving and investment is indispensable for studying the economic growth and for planning. The rate of saving and investment in an economy determines the rate of growth of the economy.

The whole concept of long-term development depends on current level of income and investment obtained from national income statistics. The projections and target setting depends upon the sectoral breakdown of national income.

At a more sophisticated level, extensive use of data on consumption expenditure can be made to study the disparities in the level of living and also the changes over period of time. The estimates of people under poverty line can be obtained from the consumption data.

Economic policy in the short run is formulated on the basis of an assessment of the recent behaviour and the current state of the economy and a view of a better forecast, about likely future developments. Short-term forecasts are made by using econometric models. Over the medium or long term, economic policy has to be formulated in the context of a broad economic strategy which may need to be quantified in terms of a plan. Most of the elements which make up a medium or long term economic plan consist of national account flows, and it may be impossible to draw up such a plan without them. A good macro economic model which accurately reflects the past performance of the economy may be indispensable for planning and forecasting.

For target setting at sector levels the forecasts for the macro aggregates are transformed into sectoral levels by making use of certain other models like consumption model and certain other assumptions like reduction in poverty. Having sector level forecasts of the macro variables the targets of production can be set by making use of an input-output or any other similar disaggregated model.

Economic policy-making and decision-taking take place at all level of government and also within public and private corporations. Large corporations have their own macro economic models tailored to their own requirements, for which they need national accounts data. The investment programmes of these corporations must be based on long-term expectations about future economic developments that require national accounts data.

For budget making and deciding about the taxation policy the government required detailed data regarding production levels of different industries, their demands, etc. By looking at the detailed sector wise estimates, the government can decide about the stimulus to be given to different sectors for growth.

No development plan is possible without national income estimates. These estimates are essential for fixing targets of production and employment. The achievements of the targets laid down in the plans can be known from the changes in national income and its various components.

8.3.1 Data Base of the Economy

National income estimates lay the strong foundations of the data base of the economy. For having reliable estimates of national income, we must have a reliable data base. Over period of time studies and surveys are conducted to improve the data base of the economy.

8.3.2 Monitoring the Movements of Different Economic Flows

National accounts data provide information covering both different types of economic activities and the different sectors of the economy. It is possible to monitor the movements of different economic flows such as production, household consumption, capital formation, wages, profits, etc. (the flows of gods and services being carried out at constant and current prices). Moreover information is provided about certain key balancing items and ratios which can be defined and measured within an accounting frame-work. One such example is the trade balance, and the other is the share of income which is saved or invested by different sectors of the economy or the economy as a whole. National accounts also provide the back ground against which movements of short term indicators, such as monthly indices of industrial production, or of consumer or producer prices, can be interpreted and evaluated.

8.3.3 Causal Relationship between Macro Variables

National accounts are also used for investigating the causal relationship at work within an economy. Such analysis usually takes the form of the estimation of the parameters of functional relationship between different economic variables by applying econometric methods to time series data complied within a national accounting framework. (The relationship between consumption, investment and income) The types of macroeconomic models used for such investigations may vary according to objective of the analysis as well as the stage of development of the economy. Advances in computers have made it possible for the econometric analysis of large macroeconomic models. Many econometric software packages have been developed and the models could be used even by institutions having only limited resources available for this purpose.

Check Your Progress 2

1) How are national income estimates useful for planning and policy purposes?

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2) In what way do national income estimates help in monitoring the movements of different economic flows?

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8.4 LET US SUM UP

A vast amount of applications exist for the estimates of national product and various other aggregates like consumption expenditure, capital formation and saving. The applications range from validity of the data base to the highly technical economic models. Comparison of the economies can be done over time and space. Regional economies in a country can be compared. It gives an idea of the standard of living of the people. International comparison of economies, although having some problems, is of paramount importance. Budget for an economy is dependent on the data provided by the authorities estimating national product. Estimates of national income and other related aggregates are extensively used for planning and policy formulating.

8.5 KEY WORDS

Causal Relationship : A relationship among variables showing which are caused by which

Standard of Living : The basic level of consumption pattern determined by the level of income

8.6 SOME USEFUL BOOKS

United Nations,(1993) *System of National Accounts*

Central Statistics Organisations, Ministry of Statistics & Programme Implementation. Government of India, *National Accounts Statistics* (2005)

Studenski, Paul., *The Income of Nation: Theory and Methodology*

Agarwala S.K., *National Income Accounting*; Bookland Publishinbg Co. Bunglow Road, Delhi.

8.7 ANSWERS OR HINTS TO CHECK YOUR PROGRESS EXERCISES

Check Your Progress 1

1) See sub-section 8.2.1
2) See sub-section 8.2.2

Check Your Progress 2

1) See section 8.3
2) See sub-section 8.3.2

UNIT 9 PORTFOLIO INVESTMENT

Structure

9.0 OBJECTIVES

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

- explain the concept of Capital flows;
- distinguish between direct investment and portfolio investment;
- describe the world scenario of portfolio investmen; and
- bring out the relationship between portfolio investment and national income accounting.

9.1 INTRODUCTION

In a closed economy saving and investments are equal. This means the income generated gets distributed either between the consumption expenditures and investments, or consumption and saving. This automatically results in investment equalising to the savings. But a closed economy is a thing of the past. Now no economy can survive as closed economy. Rather there is an emphasis of opening up the economy to the extent that the domestic economy does not suffer. In other words, so long as it positively affect the growth of the GDP of an economy, the economy is integrated with the world economy.

With the opening up of the economy there is either a deficit or a surplus on the current account. It is rarely that there is an exact balance on the current account. In case of a surplus on the current account there is a deficit on capital account i.e. the country has sent more capital to the partner country or it accumulates the exchange reserves. Here, for the time being, we do not contemplate a

situation of a change in the exchange reserves. Then there is a shift in the capital. The reverse will happen when there is a deficit on the current account i.e. there will be a surplus on the capital account i.e. more capital will be coming in and less capital will go out.

Now when there is an excess of capital inflow i.e. more capital comes in, this could happen in three ways i.e. by way of raising debt, foreign direct investment and foreign portfolio investment.

9.2 MEANING AND DEFINITION OF CAPITAL FLOWS

9.2.1 Meaning of Capital Inflow

It is desired that first we understand the meaning and place of inflow of capital from abroad (i.e. foreign investment in a country) which will help us subsequently to understand the Portfolio Investment by the Foreign Institutional Investors (FII). For this, we start from a very simple example by considering a household. Now in case in a household you want to buy a TV, fridge or another gadget, you can buy it either from your own saving or by borrowing either from a bank, a relative or some financing company. Thus, if buying a household gadget by you is an investment, there are two ways of financing it, either by household own saving or by borrowing from outside.

In the same way, in an economy, total investment in a year, can be financed either by generating domestic saving or borrowing from abroad. In technical term it is called "inflow of capital from abroad". We can also put total investment in a year in an economy as follows:

TCF = DS + ICA

where TCF is Total Capital Formation (or investment), DS is Domestic Saving and ICA is inflow of capital from abroad.

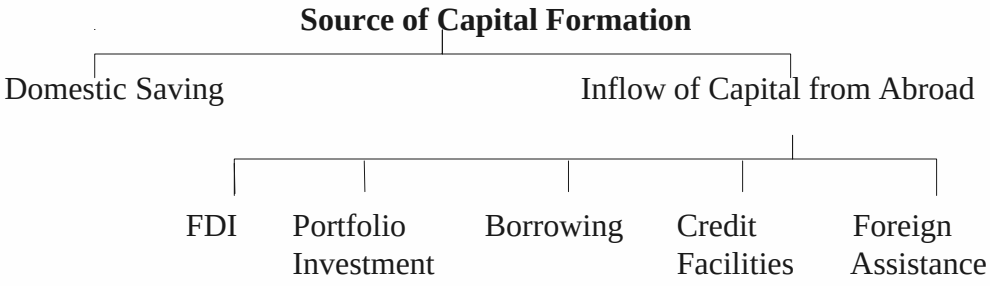
In the present lesson we will not go in details of the domestic savings. Therefore, we split-up inflow of capital from abroad.

9.2.2 Forms of Foreign Capital Flows

Capital flow from abroad or foreign capital may flow in an economy by various ways. Some of the important forms of foreign capital inflows are:

- Foreign Assistance
- Borrowing
  - i) Long-term borrowing
  - ii) Short-term borrowing
  - iii) Trade Credit facilities
- Investments
  - i) Portfolio Investment
  - ii) Foreign Direct Investment
  - iii) GDR

This is depicted in a diagram below:



Of these forms of inflows present lesson is concerned with the Portfolio Investment only.

9.3 FDI VERSUS PORTFOLIO INVESTMENT

Of the two types of investments, direct and portfolio, the former is better than the latter. In the case of FDI at least it brings with it the new technology. The local production and over the period there is a transfer of technology, how slow it may be. On the other hand foreign portfolio investment (FPI) is devoid of this virtue, at least over a short to medium terms of investments. In the free play foreign investor through FPI may acquire the management rights in the local units and exist whenever they like. There is no permanent stake in the case of portfolio holding.

The **capital account** is a record of the inward and outward investment and amortization flows between a country and the rest of the wold. The capital transactions recorded include those that result from the purchase or sale of real or financial assets.

Capital account transactions can be classified in one of two ways. The first way is to classify them as private or public transactions, that is, transactions made by private investors or by the government. The second way is to divide capital account transactions into **direct investment** or **portfolio investment**. Direct investment is a transaction in which the investor has a controlling share or participates in the management of the firm. Portfolio investment, on the other hand, is a transaction in which securities are held purely as a financial investment. It is often difficult to distinguish between direct investment and portfolio investment and, typically, the classification depends on the promotion of the firm held by the investor. The cut-of level of ownership beyond which an investment is classified as direct investment varies across countries but is usually around 10 per cent.

The accounting rule for capital transactions is based on the same logic as that used to record transactions in the current account. The sale of assets to foreigners and borrowing of funds abroad are transactions that are recorded with a positive sign because these transactions result in an inflow of international funds. Thus, a surplus in the capital account implies a decrease in the net holding of foreign assets by domestic residents. Analogously, the purchase of foreign assets is recorded with a negative sign.

Check Your Progress 1

1) Explain very briefly the meaning of capital inflow.

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2) What are the various forms of capital inflow flow abroad?

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3) State very briefly the distinction between the FDI and Portfolio Investment. Which one you would prefer and why?

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9.4 WORLD SCENARIO PORTFOLIO INVESTMENT

With the rapid progress of an economy, after a stage the rate of return on the capital declines. This happens owing to two reasons: (i) a decline in the demand expansion rate and (ii) as the capital base expands the total profits may rise but the rate of increase is likely to decline. This is the case with industrialised economy specially that of the United States and Western European countries. In view of this the capitalist in these countries look at the investment possibilities in those countries where the capital base is low and demand for goods and services is much higher.

The world scenario in respect of the portfolio investment over the past two decades has to be reviewed in this context.

Portfolio investment during the nineties has increased very rapidly all over the World. The progress is much better in the case of developing countries. In developing countries the increase in portfolio investment was from US$ 11 billion in 1992 to US$ 46 billion by 1996, a growth rate of 43 per cent per year.

However, India's share over the period, though has increased but is still lowest compared to Brazil, China, Indonesia, Malaysia and Thailand (Table 1).

Table 1: Portfolio Equity Flows

(US$ million)

Country	**1992**	**1993**	**1994**	**1995**	**1996**
Brazil	1734	5500	5082	4411	3981
China	1194	3818	3915	2807	3466
India	241	1840	4729	1517	4398
Indonesia	119	2452	3672	4873	3099
Malaysia	385	3700	1320	2299	4353
Thailand	4	3117	538	2154	1551
Philippines	333	1445	1407	1961	1333
All Developing Countries (DCs)	11000	45000	33000	32000	46000
Share of India in LDCs (%)	2.19	4.09	14.33	4.74	9.56

Source: *Global Development Finance*, (Vol. I & II). The World Bank.

There is evidence to show that India has managed to occupy a quasi – "top of mind" slot in the preceding years among foreign investors. The spate of newspaper articles and features in prominent newspapers, and articles demonstrate that India has been able to attract media attention. The impact of these developments will take some time to be felt. These include:

- Amendment of Foreign Exchange Regulation Act;
- Reduced list of industries requiring industrial licensing;
- Dilution of MRTP;
- Reduction in number of industries reserved for Public Sector;
- Liberalisation of imports and reduction in tariffs;
- Convertibility of rupee on Current Account;
- Opening up of the capital market to foreign investors.

Additionally, as part its initiatives to promote and protect investments, India became a member of Multilateral Investment Guarantee Agency. Bilateral investment promotion and protection agreements have also been signed with U.K., Russia, Germany, Malaysia, and Denmark. Several others are in the process of being finalised.

Liberalisation policy and procedural framework has in general been accompanied by revising of special policy-cum-incentive packages for key industrial sectors like telcom, hydrocarbons, tourism, drugs and pharmaceuticals, etc.

The subsequent restructured Foreign Investment Promotion Board (FIPB) and streamlining of procedures is another positive endeavour in the direction of augmenting foreign investment. A new Foreign Investment Promotion Council has been constituted to formulate policy guidelines and targets as also devise an approach for enlarging foreign investment into the country. The Council comprises of mainly professionals from the corporate sector.

Foreign Capital can flow into India either as FDI (Foreign Direct Investment) or as foreign investment in Indian securities.

Foreign investment in India securities flows in as:

a) Portfolio investment through purchase and sale of securities in Indian capital markets. The Indian capital market is partially open to investment by Foreign Institutional Investors (FIIs) within the prescribed limits. Disinvestment and dividends declared by FIIs are fully repartriable.

b) Investment in Global Depository Receipts (GDRs) and Euro convertible issued by Indian companies in overseas markets.

Substantial reforms have been undertaken to facilitate foreign portfolio investment in the debt and equity market. The relaxations that have been permitted in FII investment are

1) An FII can hold upto 10% in the equity of any company.

2) FIIs can invest in unlisted companies and in debt securities without prior investment in equity.

3) With a view to increasing the flow of funds to the gifts market, the RBI recently allowed Foreign Institutional Investors, including proprietary funds, to invest in dated Government securities and set up dedicated debt funds.

4) FIIs, Non Resident Indians and overseas corporate bodies can collectively investment upto 30% in a single company

5) FIIs have been given in-principle approval to invest in treasury bills.

6) FIIs have been permitted to take forward covers on their currency exposures on debt instruments.

In general, surges in capital inflows hold the potential for raising investment and growth. The larger the role of structural and fiscal policy changes in attracting the inflows, the greater seems to be the favourable impact on growth. However, the benefits are accompanied by potentially destabilizing effects, including inflationary pressures, appreciating real exchange rates and widening current account deficits. Inefficiencies in the financial system show up as widespread banking defaults and stock market volatility. Most countries initially respond to the inflows by sterilization, which seems to prevent widening of the current account deficit and substantially increases international reserves. Countries that have benefitted most from foreign inflows seem to have tightened fiscal policy as a means of controlling inflation and avoiding a real appreciation, especially in the years immediately after the surge in inflows. However, lack of public support and the need to develop infrastructure make it difficult to sustain fiscal restraint.

Check Your Progress 2

1) What is the need for investment in a developing economy by capitalist from a developed economy?

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2) Why did India's share in world portfolio investment it change between 1992 and 1996.

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3) What steps have been initiated by India to attract Portfolio Investment?

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9.5 FLOW OF FOREIGN PORTFOLIO INVESTMENT

Continued liberalisation in developing countries and the need for portfolio diversification in developed countries will ensure that the long-term outlook for sustained net inflows of private capital remains favourable. As the new investor base of institutional investors and pension funds expands, more of the private capital flows are likely to take the form of portfolio-especially equity flows.

In India, portfolio investment by Foreign Institutional Investors (FIIs) is wholly a post economic reform phenomenon. The comprehensive economic reform programme launched by the Indian government in 1991, encompassing financial sector deregulation as well as trade and industrial policy reform resulted in liberalisation of the financial markets and a substantial easing of restrictions on private capital inflows.

The initial surge of portfolio investment came in 1993-94, when FIIs were allowed to invest in securities in the Indian capital market. In the post-reform

period, FII inflows have increased from $4.3 million in 1993-93 to $2.4 billion in 1996-97, with the share of FII investment in total foreign capital inflow to India rising from 0.2% to 37.16% in the same period.

Table 2

Year	Net Investment (US$ million)	% Change Over the Previous Year
1992-93	4.3	-
1993-94	1634.1	-
1994-95	1528.3	-6.5
1995-96	2035.6	33.2
1996-97	2432.1	19.5
1997-98	1649.4	-32.2

Source: Government of India, Ministry of Finance, **Economic Survey 1997-98**, p. 60.

In 1998-99, the behaviour of share prices in India was affected by the trend in FII investment in other Asian capital markets. The turbulence in Asian financial markets affected overall FII investment in the region. In pursuance of the proposal made in the Union Budget for 1998-99, FII investing via 100 per cent debt route have been permitted to invest in unlisted securities. The procedure for granting such account registration in respect of registered FIIs has also been simplified. In order to facilitate investment by overseas investors, including NRIs, SEBI has created on overseas investment cell.

While FIIs continued to repose their confidence in the Indian securities market and its regulatory framework, their response to investment in the Indian market was affected by the reduction in their exposure to Asian markets.

The net FII investment (equity plus debt) declined by US$ 634 million or by about 6.8 per cent from US$ 9284 million in March 1997 to US$ 8650 million in December, 1998.

9.6 PORTFOLIO INVESTMENTS AND NATIONAL INCOME ACCOUNTING

The economic reform programme that included both fiscal adjustment and reform of the industrial and trade policy framework, played an important role in creating a favourable environment for FII investment. These reforms are briefly outlined here.

The fiscal deficit was brought down from 8.3% of GDP in 1990-91 to around 5.7% by 1992-93. The initial reduction in deficit (in 1991-92) was brought about due to a reduction in cash subsidies on exports and fertilizers and reduction in plan expenditures. But subsequently, the decline was achieved largely through cuts in public investment. In 1993-94, there was a temporary setback as fiscal deficit rose up to 7.4% of GDP due to a combination of lower realisation of receipts and higher expenditure. In 1994-95 and 1995-96 increased revenue

receipts (as a result of tax reform) and PSU disinvestment proceeds helped in the fiscal correction process. A better measure of fiscal consolidation is the primary deficit, which has improved from 4.3% in 1990-91 to 1.1% in 1996-97. The budgetary deficit (as a % of GDP) has also declined continuously in this period.

In the per-reform period, the Indian Financial System was driven by the development motives set for it, and it operated under a policy of controlled interest rates, directed credit to the priority or weaker sectors, excessive Government per-emption of savings and over-regulation of the capital market. Liberalisation of the capital market was initiated in 1991 with the introduction of free pricing of capital issues and the subsequent establishment of the Securities and Exchange Board of India (SEBI) as a capital market regulatory body. The capital market reforms agenda included measures such as the modification of the traditional carry-forward system, introduction of capital adequacy norms for brokers, improving settlement practices and transparency in trading and minimisation of insider trading the price rigging. The computerisation of existing stock exchanges and the creation of the countrywide screen based network of the National stock exchange have further improved the quality increase of trading in the country.

The money market matches short term cash surpluses and deficits of banking and non-banking institutions and the corporate sector through the call money market, intercorporate deposits, commercial paper, certificates of deposits and treasury bills. A wide variety of instruments have appeared in this market and greater access has been provided to non-bank participants. Secondary market liquidity has improved with the introduction of primary dealers and the setting up of the Discount and Finance House of India.

The initiation of bank reforms in 1992 has improved capital adequacy among nationalised banks and resulted in the adoption of prudential accounting norms in line with international standards. Further, the RBI permitted the re-establishment of banks in the private sector in 1992, which has brought in welcome competition with respect to customer service and technological upgradation. Para-banking services are provided by a large network of non-banking finance companies that operate both in the public and the private sector. Deregulation of interest rates has led to greater competition and finer pricing among banks and development finance institutions. In 1992, private sector participation was allowed in the mutual fund industry and by end-1996, there were around 20 private sector funds in the country, many with foreign collaboration.

In order to ensure that the gains from the devaluation of the rupee in 1990-91 were not “dissipated in inflation”, the monetary policy was simultaneously tightened. The main concern of the RBI in the period 1990-91 to 1992-93 was inflation control and this was achieved by hiking key interest rates in the economy, including the bank rate, prime lending rate and the deposit rate. In October 1991, the nominal prime lending rate was as high as 20%. Thus, from 1990-91, when the economic reforms programme was initiated, to 1993-94, when the first surge in foreign inflows took place, interest rates in India were much higher than that in overseas markets. The return on the RBI all shares index also rose in that period, providing attractive investment opportunities in equity. As interest rates rose due to tight monetary policy and administered

increases, the interest rate differential between India and the USA was as high as 12.8% in 1992.

Interest rate differentials between domestic and foreign interest rates would, however, need to be adjusted for expected depreciation appreciation of the Rs./$ exchange rate in order to satisfy the interest rate parity condition across economies. That is, the interest rate differential must be large enough to compensate for the cost of the forward premium on the dollar. This has not generally been the case for India. In the long run, expectations of a weak rupee may erode the attractiveness of investment in India notwithstanding the higher interest rates prevailing here.

In industrial policy reform, the Government has focused on industrial delicensing and dismantling of controls, thus reducing entry barriers for the private sector in areas previously reserved for the public sector. At the same time, in order to make domestic industry globally competitive, customs duties were gradually reduced and export incentives were increased.

Apart from interest rate differential we would attempt to look at the differentials in the returns on equity between India and the US and Europe as well as between India and the East Asian Markets. This would involve looking at return differential as well as the correlations between the returns in these markets with those on Indian stock markets. It is now accepted that emerging markets offer higher returns than developed markets, where market efficiency ensures that any potential profits are immediately wiped out through arbitrage. However, the importance of Indian stocks to international investors is based not so much on the higher returns bet on the low correlation between India's market index and foreign market indices. On the basis of data pertaining to a 17 year period, the average correlation between monthly returns on the S&P 500 index and the NSE-50 index is found to be -0.0198, which is lower than the correlation between OECD countries or other emerging markets and the USA. The low negative correlation implies that investment in Indian markets can be used to hedge investments in the US markets. Further, the high correlation between other indices in south-east Asia and the S&P index suggests that the cycles in the Indian stock market are completely different from those in south-east Asian economies, which further reinforces the significance of the Indian markets in international risk diversification, several new banks to be set up in the private sector. Private banks are expected to bring better customer services and innovative products to the banking sector.

The liberalisation of the capital market was initiated with the repeal of the Capital issues (Control) Act, which gave companies the freedom to price their capital issues in accordance with its fundamental worth and market perception. Simultaneously with the abolition of the office of the Controller of Capital Issues (CCI), the Securities and Exchange Board of India (SEBI) was armed with the statutory powers to regulate and reform the capital market and most primary and secondary market intermediaries were brought within its regulatory framework with the following measures:

- Abolition and subsequent modification of the manipulative and investor unfriendly carry forward or 'badla' system;
- Issuance of guidelines to minimise price rigging and insider trading;

- Improving the quality of disclosures in the prospectus;
- Reducing settlement periods and improving settlement practices;
- Indicating strict pricing norms for preferential issues to promoters;
- Increasing transparency in client-broker relationships by segregating client and broker accounts;
- Introducing capital adequacy norms for brokers; and
- Tightening entry norms for issuers of equity.

Mobilisation of resources in the primary capital market through equity grew phenomenally between 1990-91 and 1994-95, rising from Rs. 39.64 bn to Rs. 360.19 bn. The post CCI equity boom was sustained till 1994-95. In the period 1995-97, the depressed conditions in the equity market have resulted in increased mobilisation of funds through debt issues. The market capitalisation of shares on the Bombay Stock Exchange (which lists about 7000 scrips) has grown from Rs. 1102.79 bn in 1990-91 to Rs. 4710.39 bn in 1995-96.

In 1992, the Over The Counter Exchange of India (OTCEI) was set to promote resource mobilisation and trading in small capital companies. Established on the lines of the NASDAQ system in the USA, the OTCEI requires a minimum post issue capital of Rs. 30 lakh, as against Rs. 10 crore for the BSE. The OTCEI also trades in debt instruments and units of US - 64, which is one of the most popular schemes managed by the UTI.

In 1994, the National Stock Exchange commenced operations as a screen based, order driven trading system with a country wide network of members connected to the central computer in Mumbai through VSATs. By December 1996, the NSE network spanned 66 cities, out of which 49 have not stock exchanges. The transparent trading and widespread reach of the NSE have ensured that its trading volumes have been consistently higher than those of the BSE and market capitalisation has grown to Rs. 4200 bn (January 1997).

In 1994-95, the value of tradable debt outstanding was estimated at Rs. 3000 bn - comprising Rs. 2600 bn of bonds and Rs. 350 bn of money market instruments. In addition, there is an untraded debt market estimated at about Rs. 600 bn, including small savings instruments and company fixed deposits. Government bonds accounted for almost 80% of the outstanding debt in 1994-95. However, the slump in the equity market in the period 1995-97 has resulted in substantial debt issues by corporates both in the public and private sector, bringing down the share of Government debt to about 66% of the outstanding debt in March 1996. The setting up of the NSE marked the establishment of the first formal debt trading system in the country. The OTCEI also trades debt instruments, both of companies that are listed and not listed with it. However, trading in Government securities accounted for about 90% of the turnover of the debt segment of the NSE in 1995-96.

In order to integrate the corporate sector with the global markets, the finance ministry permitted Indian companies to make Euro issues of GDRs and Euro convertible bonds in 1991-92. In the period May 1992 to December 1996, Indian companies raised $6.70 bn through Euro issues out of which $5.43 bn (81%) was through GDRs and the remaining through convertible bonds.

In 1995, the BSE changed from its antiquated open-outcry trading system to the VSE Online Trading System (BOLTS), which facilitates electronic trading in the 6000 odd listed scripts. Seven other exchanges, including Delhi, Madras, Calcutta and Ahmedabad were computerised in 1996, and a few more are expected follow suit in 1997.

Trading systems were improved further with the setting up of the National Securities Depository Ltd. (NSDL) in November 1996 and the NSE commenced trading in dematerialised shares by the end of 1996.

The liberalisation of the economy and measured to encourage the inflow of foreign capital also included reform of the exchange rate regime. During the era of Bretton Woods System of fixed exchange rates, the rupee was pegged to the pound sterling at a fixed parity. A margin of 1 per cent on either side of the parity was allowed within which the RBI committed to buy and sell spot pound sterling against the rupee at fixed buying and selling rates. With the breakdown of the Bretton Woods System in 1971, and the consequent emergence of floating exchange rate system, the rupee was pegged to the US dollar for a short period (from August to December 1971), retaining the pound sterling as the intervention currency. With the realignment of currencies in December 1971, the rupee was delinked from the dollar and relinked to the pound sterling, at a fixed but adjustable parity with a wider margin of 2.25 per cent on either side (giving a band of 4.50 per cent), as was permitted by IMF to all member countries. When the pound sterling was floated freely in June 1972, uncertainties crowded the exchange rates of the rupee by putting server free market pressure and the rupee was to be revalued frequently in response to the continued depreciation of the pound sterling.

On September 25, 1975 the rupee was delinked from the pound sterling and linked to an undisclosed basket of currencies. This arrangement, which continued till February, 1992 retained the pound sterling as the intervention currency and the RBI established the daily rupee-sterling rate. The exchange rate against other currencies were determined on the basis of cross rates with the rupee-sterling rate and the exchange rate of sterling against the concerned currencies, based on the London closing rates. A five per cent margin in either side allowed RBI to make adjustments. The margin transformed the basket linked arrangement into a flexibly managed floating currency, in practice.

The system of basket linked management of exchange rates was withdrawn in March 1992 and the RBI stopped setting the external value of the rupee through the rupee-sterling rate. Partial convertibility of the rupee was introduced in the form of the Liberalised Exchange Rate Management System (LERMS). Under this system all forex receipts on current account transactions were required to be submitted to the Authorised dealers of foreign exchange in full, who in turn would surrender to RBI 40% of their purchases of foreign currencies at the official exchange rate announced by RBI. The balance 60% could be retained for sale in the free market. As the exchange rate aligned itself with market forces, the Rs/$ rate depreciated steadily from Rs/$ 25.83 in March 1992 to Rs/$ 32.65 in February 1993. The LERMS as a system in transition performed well in terms of creating the conditions for transferring an augmented volume of foreign exchange transactions onto the market. Consequently, in March 1993, India moved from the earlier dual exchange rate regime to a single market determined exchange rate system.

As the exchange rate became more market-determined, the foreign exchange markets also became more dynamic. For a long time the only hedging option available to Indian corporates was the foreword cover. The Indian market is illiquid beyond six months and forward contracts are ordinarily available only for a period of six months though there are no restrictions on ADs offering cover for longer periods. In August 1997, the RBI allowed ADs to provide forward covers to foreign institutional investors with respect to their investments in debt. This is expected to provide greater liquidity to the forward market and bring in more foreign investment in debt instruments.

In January 1994, banks allowed to offer cross currency options on a fully covered basis Corporates were allowed to cancel the option only once and they were not permitted to rebook options against the same exposure. However, the corporate could hedge the exposure using the forward market. In the absence of a rupee yield curve, banks are unable to price or offer rupee based currency options. Further, restrictions imposed on cancellation and rebooking and the high cost of upfront premium have ensured that these options have not become popular. Till recently, ADs were allowed to undertake rupee swap transactions subject to RBI approval, which was granted on a case-by-case basis. In the monetary policy announced on 15 April 1997, the RBI allowed corporates to undertake rupee forex swaps through ADs without prior permission from the RBI.

The forward market provides the conditions for the integration of the foreign exchange market with the money market, particularly the call money market. For instance, tight liquidity conditions in the money market and high call money rates may induce a demand for swaps where by banks acquire spot rupees to be swapped for forward dollars. This, in turn, would push the swap premia upwards. The recent abolition of reserve requirements on net interbank liabilities is expected to develop a rupee yield curve and enable better integration of the call money and forward rates.

In addition on the above measures steps are being taken to make the rupee fully convertible in the next few years by achieving capital account convertibility. Capital account convertibility refers to the freedom to convert local financial assets into foreign financial assets and vice versa, at market determined rates of exchange. Therefore, capital account convertibility implies the right to import or export capital without restrictions. As a part of the ongoing process of economic reforms, current account convertibility was established in August 1994. However, controls continued to operate on transfer of capital abroad by resident individuals as well as capital inflows and outflows by banks and institutional entities. In order to lay out the road map to capital account convertibility, a committee was appointed by the Reserve Bank of India under the Chairmanship of Mr. S. S. Tarapore, which submitted its report in May 1997. The Tarapore Committee has recommended that full convertibility of the rupee should be achieved in three phases by 1999-2000, and the process should be subject to the fulfillment of certain pre-conditions. The first phase of the implementation of convertibility commenced from the financial year 1997-98.

9.7 LET US SUM UP

This unit dealt with a topic that was at a slight tangent to the usual topics in national income accounting. Protfolio investment are investments made by

individuals and institutions which are in the form of financial securities. The unit discussed in detail the meaning and definitionof capital flows with special reference to India.

The unit carefully distinguished between portfolio and direct investments, the latter being addition to real capital. The unit discussed the flow of foreign portfolio investment, with special reference to India. The unit discussed the relationship between portfolio investment and national income accounting.

9.8 KEY WORDS

Capital Account : A record of the inward and outward investment and amortization flows between a country and the rest of the world.

Direct Investment : Investment where the investor has a controlling share or participates in the managing of the firm.

9.9 SOME USEFUL BOOKS

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

Dhingra, I.C. (2005), *Indian Economy*, Sultan Chand and Sons, Delhi.

Hicks, J.R., Mukherjee,M, and Chosh, S.K. (1984), *The Framework of the Indian Economy*, Oxford University Press, Delhi.

9.10 ANSWERS OR HINTS TO CHECK YOUR PROGRESS EXERCISES

Check Your Progress 1

1) See subsection 9.2.1

2) See subsection 9.2.2

3) See subsection 9.3

Check Your Progress 2

1) See subsection 9.4

2) See subsection 9.4

3) See subsection 9.4

UNIT 10 CONSUMPTION AND SAVING BEHAVIOUR OF THE ECONOMY

Structure

10.1 OBJECTIVES

You are already familiar with the concepts of consumption and consumption expenditures, and savings. These concepts were introduced in Unit 2. The objective of the present unit is to further explain these concepts. After going through this unit, you will be able to:

- differentiate between the intermediate and final consumption;
- distinguish between household and government consumption expenditures;
- describe consumption behaviour in India over the past years; and
- discuss meaning of saving, types of savings, and saving behaviour in India over the past years.

10.2 INTRODUCTION

Consumption by definition means what has been used up for satisfaction of wants. Some define consumption as destruction of utility of a commodity. Looking from another angle, consumption is that part of income which has been used up by persons, individually or collectively for the purchase of goods and services for satisfaction of wants.

In fact the income of an individual or a household can be split up into (i) consumption expenditure, and (ii) saving. A part of the national income generated is spent on consumption . That part of the income which is not spent on consumption is taken to be saved.

What holds, in splitting the individual income into consumption and saving, with marginal modifications, also holds for splitting the national income into consumption expenditures and savings. This will become more clear as we proceed in the present unit.

10.3 CLASSIFICATION OF GOODS AND SERVICES

Goods and services produced by the producing units are used by different categories of users. The users are households, enterprises and general government. With the households we also club the 'private non-profit institutions serving households (PNPISH)', popularly known as NGOs (Non-Government Organisations) in India. The goods and services used by these groups are classified into three categories : (1) consumer goods and services (2) intermediate goods and services and (3) capital goods.

10.3.1 Consumer Goods and Services

These goods and services purchased by the households and general government. Consumer goods can be further classified into durable or non-durable. Durable consumer goods are those which can be used a gain and again. Some examples of durable goods used by the households (including NGOs) include cars, VCRs, TV sets, refrigerators, washing machines, air-conditioners, etc. durable goods are those which can be used only once. Some examples of such goods consumed by households and general government include food items, soaps, oils, ink, pencils, writing paper, petrol, etc. These goods and services form part of their final consumption expenditure. Durable and non-durable goods are also called durable-use and single use goods respectively.

10.3.2 Intermediate Goods and Services

Goods and Services purchased by production units from other production units during a year and completely used up in production process during the same year.

Intermediate goods and services. This include purchases of all non-durable goods and services by production units like raw materials, electricity, water, expenditure on repairs and maintenance, etc.

10.3.3 Capital Goods

Capital goods include all durable goods acquired by production units for use in production and net addition to the stocks during the year. All durable goods like factory buildings, machines, plants, equipments, roads, dams, bridges, aircraft, trucks, taxis, etc., are the examples of capital goods. Net addition to the stock of raw materials, finished goods and semi-finished goods is also treated as capital goods.

Having classified goods and services into three categories (i) consumption goods and services , (ii) intermediate goods and services and (iii) capital goods, let us explain the term consumption in more detail.

10.4 CONSUMPTION

10.4.1 Meaning

Consumption refers to an activity leading to satisfaction of human 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. Services of an electrician rendered to a household are consumer services while those rendered to a factory are producer services.

10.4.2 Sources of Consumption Expenditure

There are three sources of consumption expenditure in a country.

1) One source is *households* or individuals who acquire goods and services for satisfaction of wants of family members.

2) Another is *Private Non-profit Institutions Serving Households (PNPISH*) 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 etc., neighbourhood associations, trade unions, and so on.

3) 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 an expenditure is on police, courts, military, maintenance of public properties, sanitation, charitable hospitals, schools, colleges, training institutions and many more such items.

4) The sum total of consumption expenditure in the country is taken as the sum of such expenditures incurred by households, private non-profit institutions serving households and general government.

10.4.3 Problems in Estimating Consumption Expenditure

We have pointed out the distribution between single-use and durable use because it creates problems in estimation of consumption expenditure. Single-use goods do not create much of a problem because most of these are used up 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 use 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 how many items like TV set, cars, transistors, books, expensive clothes, etc. These items create problems in estimation of consumption expenditure. To estimate yearly consumption value of a durable consumer, the estimator must have data about quantity, quality, life span, etc. of such goods. Such type of data is not available in practice. As such, the estimators have no option but to treat such goods as entirely used up during the year in which they were purchased. The estimators thus, account for the whole of such expenditure in the year in which the durable use goods were purchased. As such durable use goods are deemed to be consumed in the year of purchase.

Check Your Progress 1

1) Explain what do you mean by intermediate goods.

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2) State whether the following items are intermediate, capital or consumer goods.

Goods	**Type**
1) A Taxi	
2) A personal car	
3) Flour used in the household	
4) Maida used by a baker	
5) Fridge used by a doctor in his clinic	
6) Wheat in a flour mill	
7) Steel used in a factory.	

3) Explain the meaning of a consumer good.

10.5 CATEGORIES OF CONSUMERS

Demand for final consumption comes from the households, PNPISH, and General Government. There are three categories of consumers in an economy:

i) General Government;
ii) Households; and
iii) Private Non-profit Institutions serving house holds .

10.5.1 Government's Final Consumption Expenditure (GFCE)

Meaning

The government incurs expenditure on producing services and provides them free to the people of the country. The government provides services such as defence, law and order, education, public health and other social services. The value of such services provided free to the people constitutes GFCE.

Estimation

It should be noted that the value of final consumption by the government is not equal to the cost of services at which these are provided to the citizens, but it is equal to their cost to the government. Generally speaking, a welfare government does not provide services at their full cost to the citizens. These are sold at a price which is far less than their cost to the government. For example, children get education in government schools by paying a nominal fee. The actual cost may be many times higher than the fee paid. Similarly, government accommodation is available to its employees at nominal rent which is far lower than the market rent.

GFCE is taken as equal to its cost to the government. The cost to the government is taken as equal to :

GFCE = Compensation of employees paid by general government

+ Intermediate Consumption
+ Consumption of fixed capita
+ Indirect Tax
- Sales
- Own account capital formation.

Intermediate consumption of the government includes purchases of non-durable goods and services and net current transfers from abroad. Compensation of employees includes wages and salaries in cash and in kind. The sale of goods and services includes all payments made by individual households to the government at full or the nominal cost.

The intermediate consumption expenditure of the government also includes direct purchase of goods and services made abroad on Current Account. The government has to make purchases non-durable goods and services abroad for its diplomatic staff.

10.5.2 Households' Final Consumption Expenditure (HFCE)

Resident households make purchases both from within the domestic territory of the country and abroad. Therefore,

HFCE = **Net** expenditure on consumption by residents in the domestic market

- direct purchases made abroad

Net expenditure in the above equation means expenditure on new goods less sale of second hand goods.

The goods and services purchased by households for final consumption can be classified into the following categories:

1) **Consumer Durables**

The consumer goods which have a life of more than one year are classified as durable goods. These can be repeatedly used over a long period. A television set is a durable consumer goods. It lasts for a number of years. A fan is a durable good which provides utility over the years to a household.

2) **Consumer Non-durable**

Households also consume non-durable goods such as food, drinks, medicines, fuel, etc. Normally, the goods which have a life of less than one year are treated as non-durables.

3) **Consumer Services**

Final consumption of households includes different kinds of services such as transport, telephone, telegraph, health care, education, recreation at clubs and theatre, etc. There is no time-lag between the production and consumption of a service. It is produced and consumed instantaneously.

10.5.3 Final Consumption Expenditure of Private Non-Profit Institutions Serving Households (FCE-PNPISH)

In the domestic territory of a country certain non-profit institutions also operate to serve the households. These include institutions like charitable trusts, charitable hospitals, social organisations, cultural organisations, trade unions, etc. These institutions do not operate for profit motive, but they are organised to serve households. These non-profit organisations do produce goods and services but do not sell them in the market for profit. These also employ the services of certain factor inputs. The final consumption expenditure of the non-profit organisations is calculated in the same way as that of general government. It is as follows:

FCE - PNPISH = Compensation of employees paid
+ Intermediate Cost
+ Consumption of fixed capital
+ Indirect Taxes
- Sales
- Own account fixed capital formation

Check Your Progress 2

1) Name the three categories of final consumers.

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2) Government final consumption expenditure equals to =

3) Households final consumption expenditures equals to =

4) Draw a distinction between durable consumer goods and non-durable consumer goods. Give examples of both.

5) Explain the meaning of services with the help of a few examples.

10.6 CONSUMPTION EXPENDITURES IN INDIA

In an earlier lesson we have discussed how the national disposable income is estimated. National disposable income (NDI) of a country is calculated as follows :

NDI = NNP_{mp} + Net current transfer from the rest of the world.

10.6.1 Distribution of Income between Consumption and Savings

The consumption and saving of a society are seen only in relation to national disposable income. The consumption behaviour in India has been presented in Table 10.1 in relation to the disposable income of India.

You will find in (Table 10.1) that total consumption expenditure in 1980-81 formed about 87 per cent of the disposable income. Of this private final consumption expenditure was about 77 per cent and GFCE about 10 per cent of disposable income.

The table 10.1 also reveals that over the period consumption expenditures as a percentage of the disposable income has declined, Government's consumption expenditures as a percentage to the disposable income has somewhat increased. PFCE, on the other hand, has come down. As compared to 1980-81, GFCE as a percent of disposable income in 1994-95 increased from 1014% to 12.34%; that of PFCE declined from 76.94% to 70.06%.

Table 10.1: Distribution of National Disposable Income into Consumption Expenditures (at Current Prices)

(Rs. Billions) (1 Billion = 100 crores)

Year	Total Consumption Expenditure			Disposable Saving	Income
	GFCE	PFCE	Total		
1980-81	131 (10.1)	993 (76.9)	1124 (87.0)	167 (13.0)	1291 (100.0)
1990-91	618 (13.1)	3324 (70.4)	3942 (83.5)	778 (16.5)	4720 (100.0)
1991-92	695 (13.1)	3851 (72.4)	4546 (84.4)	777 (14.59)	5323 (100.0)
1992-93	786 (13.1)	4353 (72.7)	5139 (85.8)	848 (14.2)	5987 (100.0)
1993-94	899 (13.0)	4989 (71.9)	5888 (84.9)	1052 (15.1)	6940 (100.0)
1994-95	1004 (12.3)	5698 (70.1)	6702 (82.4)	1432 (17.6)	8134 (100.0)

Source: CSO: National Accounts Statistics, 197, p.16.

Note: 1) GFCE = Government Final Consumption Expenditures.

2) PFCE = Private Final Consumption Expenditures.

3) Figures in brackets are percentages.

4) CSO's discrepancy item is adjusted in PFCE.

10.6.2 Distribution of PFCE

The distribution of households' consumption expenditure in India between the durable goods, non-durable goods and services has been analysed in Table 10.2.

In India, a very high percentage of the consumption expenditure is on non-durable goods and services. These two taken together account for about 97 per cent. The expenditures on durable goods like car, TV, fridge, etc. is very low. It is about 3 per cent of the total expenditure.

However, over the period, the percentage of expenditure on non-durables has declined. This is in line with the classical economic law which states that as the income in the society increases, people tend to spend a lesser percentage on food and clothing. It should be noted here that lower percentage does not necessary imply a decline in the absolute term. A percentage may decline whereas the expenditures in absolute term may be rising.

Table 10.2: Distribution of PFCE

(Rs. Billion) (1 billion = 100 crores)

Year	Durable Goods	Non-durable Goods	Services	Total
1980-81	15 (1.5)	802 (80.7)	176 (17.8)	993 (100.0)
1990-91	79 (2.4)	2568 (77.3)	676 (20.3)	3323 (100.0)
1991-92	83 (2.2)	2797 (77.3)	791 (20.5)	3851 (100.0)
1992-93	100 (2.3)	3348 (76.91)	905 (20.8)	4353 (100.0)
1993-94	113 (2.3)	3854 (77.2)	1022 (20.5)	4989 (100.0)
1994-95	143 (2.5)	4388 (77.0)	1167 (20.5)	5698 (100.0)
1995-96	178 (2.8)	4969 (77.0)	1306 (20.2)	6453 (100.0)

Source: CSO: National Accounts Statistics, 1997, p.16.

Note: 1) GFCE = Government Final Consumption Expenditures.

2) PFCE = Private Final Consumption Expenditures.

3) Figures in brackets are percentages

4) CSO's discrepancy item is adjusted in PFCE.

The percentage of expenditure on the services have increased. The expenditure on services like medical, education, transport, etc. is mostly incurred by the middle class and rich class. A rising percentage on services and also on durable goods may be due to a higher increase in the income of these two classes as compared to the poor class.

We have also looked at the PFCE from a slightly another angle of distribution. We have taken 8 broad commodity groups and distributed the total expenditures amongst these groups of items. These are given in Table 10.3 below:

Table 10.3: Distribution of PFCE by Commodity Groups

(Percentages)

		1980-81	1995-96
1)	Foods	58.8	53.1
2)	Clothing and Footwear	11.2	11.4
3)	Fuels	12.6	8.9
4)	Furniture, etc.	2.8	3.7
5)	Medical	3.0	2.2
6)	Transport & Communications	5.1	12.3
7)	Education	3.0	3.6
8)	Other Services	3.5	4.8
	Total	**100.0**	**100.0**

The results are in line with those obtained for durable, non-durable and services. Here food, clothing, fuel, etc. accounts for 83 per cent. Compared to this furniture, etc. accounts for 2-3 per cent whereas rest falls in the services category.

The pattern of distribution of PFCE in India is quite different from those in the advanced industrialised countries. In these countries, the percentage of total expenditures on durable goods is much higher 8-10 as compared to 2-3 in India. Therefore one may expect that with the economic development in India, the percentage of total expenditures, on durable goods is likely to go up.

Check Your Progress 3

1) In 1995-96 what was the share of durable consumer goods in the total private final consumption expenditure in India ?

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2) As between durable goods, non-durable goods and services, state whose share has increased and whose share has declined in the total private final consumption expenditures between 1980-81 and 1995-96.

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10.7 MEANING OF SAVING

It has been stated in the beginning that in national disposable income is splitted into (i) consumption and (ii) savings. Of the total income of an individual (or a household) that part of income which is not spent on consumption is saving. Thus, income (inclusive of current transfers) is identically equal to consumption plus savings. Thus, if the society spends all of its income on consumption it will save nothing. Saving can be done only by not spending the whole of disposable income on consumption.

Saving = Disposable Income – Consumption Expenditure

Simply speaking, saving is that part of national disposable income which is not spent on consumption. The rate of saving is expressed as a percentage of GDP at market price. This can be measured as follows:

$$\text{Rate of Saving} = \frac{\text{Goss Domestic Saving}}{\text{Gross Domestic Product (at Market Prices)}} \times 100$$

10.8 SECTORAL DISTRIBUTION OF SAVINGS

There are three main sources of domestic savings. These are:

Households Sector : In India, for the purposes of estimating savings household sector includes all consumer households, private non-profit institutions serving households and unincorporated business enterprises.

Private Corporate Sector includes non-financial public and private limited companies and corporate banks and co-operatives.

Public Sector includes central and state governments, local authorities, government statutory corporations (like LIC), departmental enterprises (like railways) and government companies (like Coal India Ltd.).

Of the three sectors of domestic savings, the **household sector** occupies the most important place. In India, it contributes more than 80 per cent of the total savings. The private corporate sector and the public sector occupy the second and third positions respectively. Table 10.4 below gives the percentage contribution of these three sectors in our gross domestic savings (GDS).

Table 10.4: Sources of Gross Domestic Savings (GDS) in India (at current prices)

(In Percentage)

Year	Household	Private Corporate Sector	Public Sector	Total
1950-51	74.3	6.8	18.9	100.0
1960-61	74.4	18.4	12.2	100.0
1970-71	91.0	5.4	3.6	100.0
1980-81	75.9	7.9	16.2	100.0
1990-91	84.0	12.0	4.0	100.0
1996-97	76.8	14.8	7.4	100.0

Data given in the above table indicate that the largest contribution to GDS is made by the household sector. It is important to point out here that a major

share of the household savings comes from the urban households. The percentage contribution of the rural household is relatively lower.

The private corporate sector has contributed relatively a small percentage to gross domestic savings. Its share has ranged from about 7 to 15 per cent during 1950-97. The main reason for this is its small size. However, over the period, the percentage share of this sector has increased.

The public sector contributed about 19 per cent in gross domestic saving in 1950-51. Then by 1970-71 its percentage share declined to 3.6 per cent . During the seventies the share again rose to more than 16 per cent. Subsequently the share again declined. In 1996-97, it was 7.4 per cent.

10.9 CAUSES OF LOW SAVINGS AND MEASURES TO PROMOTE SAVINGS IN INDIA

10.9.1 Causes of Low Savings

The level of savings in India is low. The main causes are :

i) Low-level of per capita income;

ii) Insufficient agencies (i.e. banks, etc.) to mobilise savings;

iii) Increase in unproductive expenditure due to demonstration effect;

iv) Low public sector savings because of poor performance of public sector enterprises;

v) Low private corporate sector saving because of its small size; and

vi) Lack of taxation in agricultural sector.

10.9.2 Measures to Promote Savings

To raise the level of savings in India, the following steps can be taken:

Public Sector's Savings

The following steps can be taken to increase savings of the public sector:

i) ***widen the tax base***: this means the rich and wealthy farmers, who until now are exempted, need to be taxed to raise savings of government.

ii) ***strengthen tax-collecting machinery*** to prevent large-scale tax evasion.

iii) ***Heavier taxation on luxury goods***.

iv) Effective steps need to be taken so as to ***raise the efficiency and productivity of public sector enterprises.*** These enterprises, then would generate surpluses.

Private Corporate Sector Savings:

i) Profits diverted to investment should be given liberal tax concessions.

ii) Curbs on the unproductive business expenses should be imposed.

Household Sector Savings

The household sector in India occupies a significant position as far as savings are concerned. It, thus, becomes necessary to increase propensity to save of the households. The following measures in this direction are suggested:

i) Efforts should be made to mobilise savings particularly in the rural household sector by adopting measures like ***extension of bank branches*** in rural areas.

ii) Appropriate interest rates to encourage savings.

iii) Rate of inflation should be kept under control, because increase in price-level has adverse effect on savings.

iv) Proper propaganda and advertisement should be done for inclucating a habit of thrift among the people.

Check Your Progress 4

1) Explain the meaning of saving.

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2) What were the shares of households, private corporate sector and public sector in gross domestic savings in India during 1996-97.

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3) What are the causes of a low rate of saving in India.

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10.10 FORMS OF SAVINGS

In what forms does one keep his savings? We keep it in the form of currency in our safe. We keep it in the form of deposits with banks companies etc. We buy shares and debentures from our savings, we lend money to the government, buy life insurance policy, contribute to provident funds and so on. All these forms of keeping savings are financial forms.

In what other forms we can keep our savings. We can buy a house, a machine, or any other asset for use in production. We can use our savings for stocking up of goods. All these forms are the physical forms.

CSO has classified the financial savings of the household sector into the following forms:

1) Currency;
2) Net deposits;
3) Shares and debentures;
4) Net claims on government;
5) Life Insurance Funds; and
6) Provident and Pension Funds.

CSO has classified saving in the form of physical assets by households into investment in fixed assets of construction and machinery and equipment and change in stocks.

Broadly thus there are two ways of keeping one's savings: (i) in the form of financial assets and (ii) in the form of physical assets. Out of these financial assets are important in case of private corporate sector and public sector.

10.11 FINANCIAL SAVINGS

Let us now discuss saving in different financial assets:

Currency: With saving in currency, we mean change in the currency held by the public. For instance, if on 31.3.97, the stock of currency with the public were, Rs.40,000 crores and on 31.3.1998 say, Rs.50,000 crores, then saving in the form of currency during 1997-98 comes to Rs.10,000 crores. This amount by the public is taken to be held in the hard cash in the house.

Net Deposits: Like the saving in the form of currency, the net deposits in the banks are also changes in the deposits in the bank. If I had a balance of Rs.10,000 in may saving accounts on 31.3.97 and of Rs.12,000 on 31.3.98, then my saving in net deposits is equal to Rs.2,000 in 1997-98.

Shares and Debentures: A person can save and invest in shares and debentures. Limited companies (private sector or public sector) have their base capital as share capital. These are distributed mostly in the denomination of Rs.10 and in some cases Rs.100. These shares could be purchased or sold in the share market.

Net claims on Government: Then there is a lending by the people to the Government in the form of bonds, etc. As in the other two cases, saving in this form is calculated by taking the total lending to the Government at the end of the current year and subtracting the out-standing at the end of the previous year.

Life Insurance Funds: In India and other economies people also save in the form of contributing money to life insurance schemes. The contribution made by the people towards their life insurance fund is also included in the saving.

Provident Fund: People also save by making contribution to the provident funds. At present there are three types of provident funds in India, ***Contributory Provident Fund*** (CPF) in which employers and employees both contribute on monthly basis. Then, there is General Provident Fund, for public servants, where contribution is made only by the employees. Finally lately, the Indian Government has also set up a Public Provident Fund in which any person can

make contribution any time in a year. This also enjoys some legal protection as in the case of other two provident funds.

Other Small Savings: Besides, the instruments stated above there are other small savings, specially in the Post Office Saving Scheme, like National Saving Scheme (NSS), Vikas Patra, etc.

Check Your Progress 5

1) What are the various Financial Assets in which people put in their savings.

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2) If you hold Rs.1000 at the end of the year, how you will calculate your saving in the form of currency during the year.

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3) Is construction of a residential house a saving or a consumption activity.

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4) Consider that you have Rs.5,000 in your saving account in a bank at the end of the year. How you will calculate your saving in the form of deposits.

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10.12 LET US SUM UP

Capital formation plays a key role in economic development. It enables the country to set up factories, to make use of round about techniques of production. It creates employment opportunities. The capital formation is directly and solely dependent on : (a) volume of saving and (b) mobilisation of saving. There are three main sources of domestic saving in India: (i) The household sector; (ii) the private corporate sector; and (iii) public sector. The share of the household sector in the gross domestic saving has been the highest. Presently it contributes more than 80 per cent of the total savings. Causes of low savings in India are as follows: (i) low per capita income, (ii) lack of banking facilities, (iii) increase in unproductive expenditure, (iv) low savings in public sector.

There have been several measures to promote savings in India: (i) Agricultural taxation; (ii) Heavier taxes on luxury goods; (iii) improvement of public sector enterprises; (iv) Check on unproductive business expenses; (v) expansion of banking facilities ; (vi) attractive interest rates; (vii) check on rising prices; and (vii) publicity of saving schemes.

Capital formation or investment refers to the net addition to the existing stock of physical assets. Saving is that part of national disposable income which is not spent on consumption. Rate of saving is expressed as a percentage of GDP. Household Sector includes all households, unincorporated business enterprises and non-profit-making institutions. Private Corporate Sector is made up of non-government corporate sector and corporate banks and cooperative societies. Public Sector: includes government administration, departmental enterprises, government companies and statutory corporation. Propensity to save is the ratio of saving and income.

10.13 KEY WORDS

Capital Goods : Goods produced for use in future productive processes.

Consumer Durables : Consumer goods which have a life span of more than one year . These can be repeatedly used for over a long period . Examples – TV, Radio, Motor Car, House Building, Fridge etc.

Consumer Non-durable : Goods get destroyed in their first act of consumption. Normally, the goods which have a life of less than one year are treated as non-durable. For example water , milk, fruits, vegetable. *Saving*: That part of income which is not spent on consumption.

Consumption : An activity leading to satisfaction to human wants. All goods and services acquired with the intention of satisfying wants are known as consumer goods and services.

Financial Asset/ Financial Savings : Assets/savings in the form of paper titles like currency notes, deposits in banks, shares and debentures, life insurance premium, Units of UTI etc.

Intermediate Goods : Goods used for further production process. Such goods are purchased by production units from other production units for producing final goods. Examples are- raw materials, electricity, water, repairs and maintenance.

Non-durable Capital Goods : Goods which are used only ones in the process of production . As per example – raw material.

Physical Saving : That part of saving which is done in the form of house construction for residential purposes, plant and machinery, inventory etc. Saving in physical asset necessarily equal to the investment made.

10.14 SOME USEFUL BOOKS

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

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

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

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

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

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

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

10.15 ANSWERS OR HINTS TO CHECK YOUR PROGRESS EXERCISES

Check Your Progress 1

1) *Intermediate goods*: Goods purchased by production unit from other production units during a year and completely used up in production process during the same year.

2) i) Taxi – capital goods

   ii) Personal Case – consumer goods

   iii) Floor used in the household – consumer goods

   iv) Maida used by baker – intermediate goods

   v) Wheat in a Flour Mill – intermediate goods

   vi) Steel used in a factory – intermediate goods

3) *Consumer goods*: goods purchased by the households and general government this can be further classified into durable and non-durable consumer goods.

Check Your Progress 2

1) The three categories of final consumer's are:

   a) consumer durable

   b) consumer non-durable

   c) the final consumption expenditure of private non-profit institution serving households

2) For Government's Final Consumption Expenditure (GFCE) see section 10.5.1

3) See Section 10.5.2

4) Durable consumer's goods are those which can be used again and again. Some e.g. are – cars, VCR, TV sets, Refrigerators, Washing Machines, Air-conditioners, etc. non-durable goods are those which can be used only ones some e.g. are food items, soaps, oils, writing paper, petrol etc.

5) Services are produced and consumed simultaneously some e.g. are transport, telephone, telegraph, health care, education etc.

Check Your Progress 3

1) In 1995-96 the shares of consumer goods in the total private final consumption expenditure was 2.8 per cent.

2) The share of durable goods has increased and non-durable goods has declined services sectors share has increased during the first decade during 1980-81 to 1990-91. However, it is roughly having a constant share of 20.5 per cent during the nineties.

Check Your Progress 4

1) See Section 10.7

2) See Section 10.8, Particularly Table 10.4

3) See Subsection 10.9.1

Check Your Progress 5

1) See Section 10.11

2) If you holed Rs.1000/- at the end of the year, say, 2000 , you will have to see what was the amount at the end of year 1999. The difference between the two will be saving in the form of currency during the year.

3) Construction of residential house is a saving activity.

4) Calculation of saving in the form of deposit will be done on the basis of the amount added to the saving suppose in 1997-98 deposit was Rs. 5000/- and in 1998-99 it was Rs.6000/- thus the addition made to the previous balance will indicate the increasing deposit.

UNIT 11 FLOW OF FUNDS IN THE ECONOMY

Structure

11.0 OBJECTIVES

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

- explain the origin and definition of flow-of-funds accounting system and its relationship with other accounting systems;
- describe the construction and presentation of flow-of-funds system;
- discuss the usefulness and application of flow of funds;
- describe the flow-of-funds Practice in India; and
- state the limitations of flow-of-funds.

11.1 INTRODUCTION

In an economic system, one finds two-way relationship between goods and services and, the money in circulation. Flow of credit and money affects all the goods and services produced. The latter are known as real activities. All those activities in turn affect the flow of credit and money. Real flows are reflected in the system of national accounts. These accounts take into account the measurement of values created in current productive activity in different sectors and their distribution among the factors of production in addition of giving a break-up of final expenditure between consumption, capital formation and exports.

There is no doubt that National Income Accounts is the most frequently used

and discussed method of accounting system. These accounts seek to present the essential facts about nation's economic activity in a schematic manner. Just as Company's accounts relate to its business activity, national accounts relate to different economic activities of a nation. In addition of national accounts, there are three more equally important accounting systems. These systems are: (1) National Balance Sheet; (2) Input-Output analysis; and (3) Flow of funds accounts.

National Income accounts as stated above measure the output, income, expenditure, saving and investment of the economy for a given period of time, normally a year. The Balance of Payment accounts present the transactions of the domestic economy with the rest of the world. In fact, they are also a part of the national income accounts. The National Balance Sheet presents the various assets and liabilities of the economy at sector and national levels for a particular day of the year. That means, it gives the stock position of assets held and the liabilities created to acquire the assets. The input-output analysis depicts the inter-industry transactions during a year. They, thus, indicate the technological relationship between the inputs and outputs of various industries/ commodities.

These accounts, however, do not give full information, as financial flows remain ignored in these accounts. There is thus a need to have a complementary system that could explain the manner in which all the real and financial flows could be represented simultaneously.

The flow of funds system of accounts as a tool of general economic analysis is relatively of recent origin. This system was originally known as "Moneyflows accounting". The Flow of Funds Accounts represents a set of accounts designed to show transactions between different economic units effected through medium of money and credit. Each sector identifies and measures its sources and uses of funds. These accounts help in finding out the various channels through which funds flow to finance and act as a support to the real economic activity. The detailed definition of such an accounting system is given in the following section.

11.2 CONCEPT OF FLOWS OF FUNDS

The flow of funds is a system of social accounting that gives a statement of the "sources-and-uses-of-funds" of the each sector in which the economy is divided. This statement may also be called as the flow-of-funds matrix for the economy as a whole.

These accounts are prepared by dividing the economy into institutionally homogeneous groups, called sectors. For each sector, these accounts show the various transactions effected through the medium of credit and money. Each sector account identifies and measures the main sources and uses of funds. Thus, these accounts give money flows, of all transactions that involve the use of money or credit, with the financial relations between various segments of the economy, and with the relations between financial and non-financial transactions. Broadly speaking, the financial flow accounts reveal borrowing and lending operations of individual sectors from "whom to whom" and "in what manner" bases.

Flow-of-funds account and financial and non-financial flows: The flow of funds can be divided into the following two types:

1) **Financial Flows:** These flows cover all those transactions that relate to borrowing and lending operations resulting in borrowing or debt repayment and accumulation of or decrease in financial assets.

2) **Non-financial Flows:** These flows include all those transactions that relate to current receipts, current payments or current expenditures. These transactions should involve exchange of goods and services for money or near money holdings or unilateral transfers, such as, taxes, gifts, donations, etc, and the real assets formation including fixed assets formation and increase in inventories.

It would be noticed that non-financial transactions relate to the acquisition of goods and services and transfer payments, and financial transactions are concerned with the acquisition of financial assets and contraction of debts. For many analytic purposes, it is considered quite useful to distinguish in the non-financial transactions, the type of goods and services exchanged or the immediate purpose served by them. Similarly in the financial transactions, it is important to note the type of financial instruments used for payment or in exchange for other financial claims.

11.3 ORIGIN OF FLOW-OF-FUNDS SYSTEM OF ACCOUNTS

The origin of flow-of-funds account can be traced back to the year 1944. In that year, Professor Copeland was invited by the National Bureau of Economic Research "to direct an exploratory project to determine what could be done to provide a fuller statistical picture of the money circuit." In that study, he set out a conceptual framework to a detailed accounting framework for money flows.

Encouraged by Professor Copeland's work, the Board of Governors of Federal Reserve System of the United States in 1948 decided to continue with the study of the "flow-of-fund". In 1955, the concepts and methods of this system together with the relevant data and the sources of the material, were laid down in "Flow-of-Funds in the United States, 1939-53". Since 1959, the publication of flow-of-funds has been a regular publication. This practice was followed by a large number of other countries including Canada, Japan, Mexico, Italy, the Netherlands, France, West Germany, Norway, and Yugoslavia. There have been many conceptual and structural changes and refinements in the system of flow-of-funds accounts during the last so many years.

Check Your Progress 1

1) Define flow-of-funds system of accounts.

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2) Why is Flow-of-funds system of accounts is considered as the most comprehensive accounting system?

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3) Differentiate between financial flows and as non-financial flows.

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4) Discuss the origin of flow-of-funds accounts.

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11.4 FLOW-OF-FUNDS SYSTEM OF ACCOUNTS AND OTHER ACCOUNTING SYSTEMS

Flow of funds system of accounts can be differentiated from other systems namely national income accounting system, input-output system and the national balance sheet on the following grounds:

1) The central focus of each accounting system is different. Thus, National income accounting concentrates on: (i) measuring "output"; (ii) the uses in terms of the final purchases in the economy; and (iii) the types of factor income and other payments generated by economic activity.

   Input-output accounting is designed to study the way the technological production functions of various industries affect inter-industry relationships. In this manner, input-output accounting determines the industrial structure of the country.

   The National Balance Sheet shows the assets and liabilities of different sectors of the economy. This is closely related to flow-of-funds account except that it deals with stocks rather than flows. Similarly, National income accounts and input-output analysis deal with the flows during a year.

The scope of flow-of-funds accounting, on the other hand, is much more comprehensive. It sets forth the flow of payments and receipts, not only for goods and services but also for instruments of ownership and debt. It focuses on the sources and uses of funds that are essential for the support of economic activity. For instance, flow-of-funds system of accounts distinctly shows the purchase and sale of existing assets including transactions in land, tangible assets, and second hand goods. They exclude barter; book-keeping transfers of internal nature pertaining to a particular unit; intra-unit transactions and imputed transactions. Flow-of-funds therefore, do not contain any information on the real sector.

On the contrary, national accounts are not concerned with all those transactions linked to the receipt and payments of money or decrease (increase) in the credit (debit). There is no room for imputed incomes in the flow of funds system; but these are recorded and recognized in national accounts.

2) Flow-of-funds account employ different sector breakdown of the economy. The sectoring is designed in terms of both functional and institutional classifications. That reveals the borrowing and lending taking place in the system along with the income payments and purchases of goods and services. The sector classification in national income accounting is too consolidated. The sectoring has to be designed in terms of the functional aspects of economic activity. Therefore, consumers, producers, and government sectors are distinguished in addition of the rest of the world and saving and investment accounts. The classification adopted in input-output accounting highlights individual industries classified by the type of product produced and by the industrial processes used. This shows inputs consumed by each industry and the distribution of output produced by each industry. The sectoring although is much more detailed; it is not suitable for revealing the sources and uses of funds in the system.

3) The flow-of-funds sectoring has a different objective. It lays down a considerable stress on (a) financial institutions, including banking and insurance and (b) on differences in institutional forms of business and government, e.g., corporate vs. non-corporate, and central vs. state and local. The same is not true either about input-output table and national income accounting.

As shown above, different economic accounting systems have different purposes, and therefore, they should not be compared with each other in absolute terms. In fact, all these methods can play an important complementary role. All these accounting systems pertain to the same economy and are inter-linked. They also overlap or coincide for many transactions. They can be employed together as no single system can serve all purposes. However, they can be seen in terms of how efficiently they meet the purposes for which they were designed, and also, how important each of the various uses is in helping to solve the major problems facing the world today.

11.5 CONSTRUCTION AND PRESENTATION OF FLOW OF FUNDS ACCOUNTS

It has been brought out in the above pages that flow of funds system provides a statement of sources-and-uses-of-funds. It, in fact, is a hybrid accounting

system. It combines sector's balance sheets and income statement. The most important points worth remembering while constructing and presenting these accounts are the following:

First, this system requires that the economy be divided into different sectors. The major sectors may be known as financial institutions, non-financial enterprises, Central and State Governments, households and private non-profit institutions. These sectors are further split into different categories.

Secondly, and this is very important, this framework of accounts uses quadruple entry system. That is, every transaction is recorded four times. For instance, suppose households purchase products worth Rs. 50 from some corporate firm, known as non-financial enterprise. There will be the following four entries:

i) Payment of money (Rs. 50) by the household sector;

ii) Acquisition of goods by the household sector worth Rs. 50;

iii) Goods parted away by the corporate firm worth Rs. 50;

iv) Receipt of money (Rs 50) by the corporate firm.

Thirdly, all the transactions represent receipts and payments and can be seen as flows of purchasing power. These can be further divided into financial and non-financial flows and also as sources and uses. Thus, money received can be treated as source, whereas its parting away with may termed as payment or use. From this a general rule may be deduced. That is, use would indicate acquisition of an asset or reducing a liability, whereas source would indicate disposing of an asset or incurring of a liability.

Fourthly, flow of funds accounts can be constructed in many ways, i.e., from a household account, balance sheet, and even from a balance of payment account.

Example I – Constructing flow of funds account from the transactions of an individual salary earner

One of the easiest methods is to understand the construction of flow of funds accounts is with the help of an account of an individual salary earner household. This is clear from the following hypothetical example:

Table 1: Transactions of an individual salary earner

Uses of funds		**Sources of funds**	
Consumption expenditure	183	Wages & Salary	153
Taxes	15	Transfers (Cur)	15
Rents paid	38	Consumers credit	30
Interest on loans	23	Interest on bank deposits	76
Construction of house	611	Rents from old property	8
Provident fund	15	Insurance claims	76
Payment. of insu. Premiums	15	Loans from office	458
Repayments of old debts	61	Loans from fin inst	153
Currency and deposits	38	Other loans	30
Total	999	Total	999

It may be noticed that double entry system is used to maintain the account book of a salary earner. The receipts are shown both as wages as well as currency and deposit. The consumption of Rs. 183 constitutes of cash purchases of

Rs. 152 and purchases from consumer's credit of Rs.30. The amount of Rs.38 shown as currency and deposits is the amount that represents the final outcome after all pluses and minuses have been added together. Data given above contains items of current and capital nature involving movement of goods and services and transfer payments or acquisition of financial assets and contracting debts.

The information given above can be translated into national accounts as well as flow of funds for the household sector in the following manner:

Table 2: National Accounts Showing Incomes and Outlays of an Individual Salary Earner

Outgoing		**Incoming**	
Consumption	183	Wages & Salary	153
Property income		Property income	
(i) Rent paid	38	(i) Interest on bank deposits	76
(ii) Interest on loans	23	(ii) Rents from old property	8
Taxes	15	Insurance claims	76
Insurance premium	15	Transfers (Current)	15
Saving	54		
Total	328	Total	328

It is also clear from the above data that sources of funds are equal to uses of funds in the following manner:

Sources of funds = Gross saving + increase in external financial liabilities

= Uses of funds

= Gross domestic capital formation + net financial investment abroad for the economy as a whole

Table 3: Capital Finance Accounts of an Individual Salary Earner

Outgoing		**Incoming**	
Gross capital formation	611	Savings	54
Net lending	-557	Capital consumption	
		Capital Transfers (net)	
Total	54	Total	54
Provident fund		Consumers' credit	30
Reduction of old debts		Loans from Government	458
Currency & deposits		Loans from Financial Institutions	153
		Other loans	30
		Net lending	557
Total			114
		Total	
Net acquisition of financial assets		Net incurrence of liabilities & net lending	

Table 4: Flow of Funds Accounts of the Individual Salary Earner

Items	Sources	Uses
Non-financial		
Wages & Salaries	153	-
Rents	8	38
Interest	76	23
Dividends	-	-
Net withdrawal by proprietors	-	-
Insurance claims and premiums	76	15
Grants and donations	15	-
Taxes and tax refunds	-	15
Capital acquisitions	-	611
Purchases and sales of other goods & servs	-	183
Total	328	885
Financial		
Currency & deposits	-	38
Cent & State Govt Obligations	458	-
Mortgages	-	-
Corporate fin securities & loans	153	-
Provident funds	-	15
Other debts	30	61
Trade Credits	30	-
Total	671	114
Grand Total	999	999

On the above pattern, flow of funds accounts for all the households can be prepared. This exercise can be repeated for all the other sectors of the economy. Once we take the entire economy, income equals expenditure, and saving equals domestic capital formation plus net increase in foreign assets.

Method II – Constructing flow of funds with the help of a balance sheet

The other common method to construct flow of funds account is to make use of the balance sheet. The different steps are given below:

Step 1: Let us have a generalised balance sheet for any sector. It would appear something like the following:

Table 5: General Balance Sheet

Assets	Liabilities and Net Worth
A.Financial assets 1. Money 2. Near Monies 3. Others B. Real Assets	C. Liabilities A. Short Term B. Long Term D. Net worth
Total assets (A+B)	Total liabilities (C+D)

Thus D = (A +B) – C

A balance sheet similar to the above (Table 1) can be drawn up for each sector.

However, there will be one important difference as regards the characteristic items that would appear under each heading. Each real asset appears only on one balance sheet, that is of its owner. On the contrary, each liability by its very nature as a debt must necessarily imply the existence of a liability of equal amount on some other balance sheet (s). Similarly, each financial asset must necessarily imply the existence of a liability of equal amount on some other balance sheet. Thus liabilities and assets in one sector may not be equal but for the entire economy they would be equal.

For the purpose of constructing flow of funds account, this balance sheet can be rearranged as follows:

Table 6: Rearranging the above Statement

Assets	**Liabilities & Net Worth**
1. Real Assets 2. Financial Assets 3. Money	4. Net Worth 5. Liabilities
Total Assets (1+2+3)	Total Liabilities (4+5)

Step 2: A balance sheet shows "stocks" as of moment in time rather than "flows" over a period of time. But data can be converted from stock to flow form by taking into account the changes in two balance sheets over the last two years.

In case we take into account financial assets and liabilities (ignoring real assets and net worth for the moment), we would get financial sources-and-uses-of-funds statement of a sector. It need not balance, since it is derived from partial rather than complete balance sheet. A financial use of funds for a sector (households, business firms, governments, and financial institutions) is to increase in its holdings of financial assets (lending) or to build up their stock of money (hoarding).

Step 3: Non-financial sources and uses are equally important and have to be considered. It is because a sector would also like to rely on those sources of funds. These sources may arise from current or capital account transactions. Changes in real assets and in net worth are non-financial transactions on capital account. Accordingly, the above balance sheet can be rearranged to take into account financial and non-financial uses and sources.

Table 7: Uses and Sources of Funds Shown in a Balance Sheet

Uses	**Sources**
Δ Real Assets (Investment) Δ Financial Assets (Lending) Δ Money (Hoarding)	Δ Net Worth (Saving) Δ Liabilities (Borrowing)
Total	Total

The symbol Δ denotes " changes in ".

The statement mentioned above (Table 7) is very useful. It shows that a deficit sector with investment greater than saving must dishoard, borrow or sell financial asset in an amount equal to its deficit. And, on the contrary, a surplus sector with saving exceeding investment must repay debt, hoard or lend an amount equal to its surplus.

Step 4: The statement discussed above is, however, incomplete. It does not take into explicit account of current transactions. That implies it ignores current

receipts as a source of funds or current expenditures as a use or income statement. Incorporating current transactions, we get the following statement.

Table 8: Uses and Sources of Funds Shown in a Balance Sheet

Uses	Sources
Non-Financial Uses Current Expenditures Saving (Δ Net Worth) - - - - - - - - - - Δ Real Assets (Investment) Δ FA (Lending) Δ Money (Hoarding)	Non-Financial Sources Current Receipts - - - - - - - - - - Δ Net Worth (Saving) Δ Liabilities (Borrowing)
Total	Total

Δ=Changes in;

The excess of current receipts over current expenditures is generally termed as saving when it applies to the household sector; it is budget surplus in the case of government sector and retained earnings for business sector. As use of funds on current account, saving take the form of non-spending of accumulation or retention. As such, it becomes available as a source of funds for capital account and represents an addition to net worth.

Step 5: The above statement can be presented in the flow of funds matrix for a specified time period. It would appear as follows:

Table 9: Flow of Funds Matrix –Three Sector Economy

	Sec-A		Sec-B		Sec-C		All Sec	
	U	S	U	S	U	S	U	S
Saving (ΔNW)								
Investmt (ΔRA)								
Lending (ΔFA)								
Hoarding (ΔM)								
Borrowing (ΔL)								

Notes: NW = Net Worth; RA = Real Assets; FA = Financial Assets; M = Money; L = Liabilities.

This Statement is the most widely used form of sources and uses of funds statement. Since the income statement must balance and the changes in the balance sheet must balance, the summation of all the sources must equal the summation of all the uses of funds. The current receipts and current payments appear under Current Account, whereas the real assets formation and its financing appear under Capital Account.

The complete matrix of the flow of funds forms an interlocking self-contained system. It shows the balanced sources and uses-of-funds statements for each sector, the interrelations among the sectors and the aggregate totals of savings, investment, lending, hoarding, and borrowing for the economy as a whole.

11.6 APPLICATION OF FLOW-OF-FUNDS

Flow-of-funds accounting system is a comprehensive method. It furnishes information about sources and uses of funds accounts presented in the form of one large cross tabulation for all sectors. In these accounts, financial claims are ordered; users and suppliers of credit are identified; and owners of money

in circulation and government debt and financial flows are integrated with the savings and investments of each major sector of the economy. This information and data are useful to the policy makers, economists and social scientists in indicating, as argued by Professor Copeland, "how our economy works". The specific uses are clear from the following points:

1) The analysis and examination of sector-wise flows and their interaction with the other individual sectors would help in identifying the problems relating to liquidity and its repercussions for the economy. For instance, when the economy is passing through the inflationary or deflationary phases, the flow of funds accounts would help in locating the sectors in which expansionary or contractionary pressures are building up.

2) The flow of funds accounts give an idea of all the real world changes in quantified terms that are related to economic institutions, the legal framework and the other institutional aspects. It is because money and credit flows are strongly influenced by the institutional, legal and other such arrangements of the economic system.

3) The study of the process in which transaction flows expand and contract would highlight the problems relating to economic fluctuations. For instance, the analysis of the structure of assets and liabilities of the different sectors will throw light upon the determinants of the changing behaviour overtime.

4) The flow-of-funds provides detailed sector-wise data on many financial and non-financial aspects. This information plays helps in analysing the changing pattern of liquidity in the different sectors of the economy. On this basis, indicators of financial development can be prepared. This information can be of great use for monetary analysis and capital market studies.

5) The sources and uses of funds of each sector portray the deficit or the surplus of each sector. Such accounts, for instance, would point out what kind of financial assets surplus sectors bought and what kinds of liability deficit sectors had incurred. These accounts will enable the government to design policies to channelise surplus funds for financing economic development.

6) Flow-of-funds accounts are useful in the field of financial planning and in indicating how the each sector is being financed. Sector-wise estimates of investment and saving give a good idea of the resources required to be mobilised for planning investment. Given this background, one can work out the probable effects of contemplated changes in economic policies.

7) Long term information on flow of funds helps in estimating the behaviouristic pattern of inter-sectoral disposition of funds and saving / investment variables. This system strives to link financial transactions and the financial structure of the economy with non-financial transactions and the productive structure of the economy. The accounting system, thus, explains the routes of financing the investment and also the interaction between economic activity and financial activity portraying simultaneously, the funds transacted between different economic units.

Check Your Progress 2

1) Differentiate among the different system of accounts.

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2) How are flow of funds accounts constructed and presented?

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3) What are the important uses and application of the flow of funds accounts?

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11.7 FLOW OF FUNDS ACCOUNTING PRACTICE IN INDIA

In 1955, Shri Deshmukh, the then Finance Minister, made a suggestion to construct flow-of-funds accounts. Some tentative arrangements were made in the year 1956 under the joint auspices of the Central Statistical Organisation (CSO) and the Reserve Bank of India (RBI). Consequently, an attempt was made in 1957 to build up the accounts for banking and corporate sectors for the First Plan Period.

In 1959, Prof. H.W. Arndt of the National University of Australia visited India at the invitation of the Indian Statistical Institute and he prepared a memorandum on "Financial Flows of Indian Economy, 1951/52-1957/8". The economy was divided into four broad sectors, viz., government, banks, rest of the world, and residual. The analysis was confined to borrowing and lending only. The main object of the accounts was to show as to how and in what forms domestic savings had become available to government for financing its expenditure.

Later on, the work of Prof. Arndt, was broadened by the "Working Group" constituted for the purpose. The "Working Group" had representatives from Central Statistical Organisation, the RBI, the Ministry of Finance and the Indian Statistical Institute. The Report of the Working Group gave a very

comprehensive account of Flow-of-Funds system of accounts. The Report had four sections. While presenting flow of funds accounts, the economy was divided into six sectors and 20 sub-sectors. Financial and non-financial transactions had ten categories. The Report gave the consolidated flow of funds accounts for the whole economy for the year 1957-58, in addition of the sectoral statements of sources and uses of funds separately both for financial and non-financial flows.

The RBI since then continued to improve methodology of constructing flow-of-funds system of accounts. These have also been published regularly. Following Bank's institutional classification, the Indian economy is divided into 6 broad sectors. They are: (1) banking (2) other financial institutions, (3) government, (4) private corporate business, (5) rest of the world and (6) households (residual). Each of these sectors is further divided into sub-sectors. Dis-aggregation of the sectors depends upon the availability of data of different institutions. The household sector includes individuals, households or consumers, non-corporate non-farm business, farm business, private non-profit organisations and all other units not covered in other institutional sectors. Flow of fund accounts, also require classification of the transactions into economically meaningful groups. These transactions are classified both instrument-wise as well as sector-wise. Their detailed accounts are given in Table 10 and Table 12.

These tables show the following points:

1) Total claims are issued by the financial and non-financial sectors. The former includes banking and other financial institutions and the latter includes private corporate business, government, rest of the world and the households.

2) The proportionate share of all the financial institutions (in uses) is about 26 per cent as compared to 74 per cent share of the non-financial sectors. The increased share of the non-financial sectors would indicate that secondary issues are considered more important as compared to the primary issues. A rising share of the financial institutions over the period would generally indicate the increasing financial intermediation in the economy.

3) Among the non-financial sectors, the leading sectors are the Government followed by private corporate sector and the household sector.

4) The most important instruments (as uses) in the Indian economy are loans and advances followed by currency and deposits, investments and provident funds. Within investments, the leading instrument is central and State governments followed by corporate securities.

5) The resource gap defined as the saving-investment gap adjusted for capital transfers can be worked out by taking the difference between sources and uses. These gaps are found both in sector-wise as well as instrument-wise financial flows. This is found very high in the case of Central and State Government securities. In case, investment of a sector is in excess of savings generated by it, this implies that this sector borrows directly from other sectors by issuing claims on them which are held by sectors having surplus resources as also through borrowings from the financial intermediaries.

11.8 LIMITATIONS OF FLOW-OF-FUNDS ACCOUNTS

i) **Problem of Sectorisation:** The most important problem in the construction of flow of funds accounts is the division of economy into homogenous and meaningful sectors. A sector represents a group of transactions that have common characteristics capable of being distinguished for the purpose of analysis.

Sectorization of the economy is a difficult area because there are too many conceptual as well as statistical problems. Two most important conceptual problems relate to, one, Sectorisation and two, definition of each sector.

The criteria for identifying and delimiting the economic units which are to be brought together be, (i) Sectors should include all the activities of any economic unit; (ii) each sector be limited to units which show generally similar reactions to change in their assets and liabilities. The second conceptual problem relates to, whether the definition of each sector should be made on an institutional basis or on a functional basis. While defining a sector, one has to consider (a) the activity-financial or real (b) the functional homogeneity, (c) the institutional homogeneity and (d) data availability. One may observe that there quite often, appear a clash between institutional and functional classification of sectors. However, the sectoral classification should depend upon the institutional set up of the economy and also keeping in view the purpose for which the accounts are utilised.

ii) **Presentation of accounts either on gross or net basis**. Financial flow accounts can be presented both on gross or net basis. Generally speaking, the gross transactions are preferable to net transactions for analytical purposes and also because the latter may conceal significant deviations in behaviour. However, the presentation of accounts on a gross basis depends on the availability of data and the form in which they are available for each sector.

iii) **Consolidation of accounts**: The accounts of each institution or sub-sector have to be consolidated as transactions in each sector are presented 'from whom-to-whom' basis and sector-wise classification is presented under each instrument. In consolidating the accounts, intra sub-sector transactions are eliminated. This however, depends on the adequate availability of data.

iv) **Valuation of transactions:** Transactions are recorded at the price at which they are sold or purchased. However, the same price may or may not be reported by the seller and the purchaser because the value reported in their books of accounts may be book value of face value or current market prices

v) **Selection of Accounting Period**: The accounting period set for the flow of funds accounts is April-March. The period is also the same in the case of national income accounts. However, the accounting period is not common for all the institutions or sub-sectors of the Indian economy. These sectors include cooperative banks and societies (July-June); insurance companies (January-December) and financial corporations (July-

June). All these accounting periods have to be approximated for April to March for the purpose of flow of funds accounts.

vi) **Discrepancies**: In principle, the flow of funds account constitutes an inter-locking and balancing set of accounts. Total sources of funds become equal to total uses of funds for each sector. However, at the economy level, discrepancies between total financial sources of funds and total financial uses of funds arise due to many factors. These include factors like timing, valuation, coverage, classification and such statistical inadequacies relating to error in basis data or omission of pertinent transaction or transactors.

Check Your Progress 3

1) Write a brief note on the historical background of the first flow of funds account in India.

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2) Name the different sectors in which Indian economy is divided for the purpose of "sources and uses of funds" statement?

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3) Discuss the limitations of flow-of-funds accounts.

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11.9 LET US SUM UP

National Income accounts measure the output, income, expenditure, saving and investment of the economy for a given period of time. The Balance of Payment accounts present the transactions of the domestic economy with the rest of the world. These accounts, however, do not give full information, as financial flows remain ignored in these accounts The Flow of Funds Accounts represents a set of accounts designed to show transactions between different economic units effected through medium of money and credit. The flow of funds, thus, is a system of social accounting that gives a statement of the "sources-and-uses-of-funds" of the each sector in which the economy is divided.

Flow of funds accounts covers both financial and non-financial transactions. Financial transactions are concerned with the acquisition of financial assets and contraction of debts. Non-financial transactions, on the other hand, relate to the acquisition of goods and services and transfer payments.

The origin of flow-of-funds account is attributed to the work of Professor Copeland in 1944. This system is different from other systems. These systems can be seen in terms of, the central focus of these accounts, the sector-wise breakdown of the economy, and the objectives underlying the construction of different types of accounts..

The information and data provided in flow of funds serve a useful purpose. The important users include policy makers, economists and social scientists. As argued by Professor Copeland, flow of funds, indicate "how our economy works". For instance, flow of funds accounts facilitate the nature of the interrelationships of the financial and non-financial variables, their functioning and its implications for the economy. This information can be used for better monetary planning and also for future projections.

In India, the first time attempt was made 1956 under the joint auspices of the Central Statistical Organisation (CSO) and the Reserve Bank of India (RBI). As a result, in 1957, the accounts for banking and corporate sectors for the First Plan Period were constructed. The most important problems encountered while constructing the flow of funds accounts relate to, the division of economy into homogenous and meaningful sectors, presentation of accounts either on gross or net basis, consolidation of accounts and deficiencies arising from differences in reporting, timing, valuation, as well as estimation procedures.

11.10 KEY WORDS

Flow-of-funds : The flow of funds, thus, is a system of social accounting that gives a statement of the "sources-and-uses-of-funds" of the each sector in which the economy is divided.

Financial Flows : Financial transactions are concerned with the acquisition of financial assets and contraction of debts.

Input-Output Accounts : Input-output accounting is designed to study the way the technological production functions of various industries affect inter-industry relationships. In this manner, input-output accounting determines the industrial structure of the country.

Non-financial Flows : Non-financial transactions relate to the acquisition of goods and services and transfer payments.

Sector : A sector represents a group of transactions that have common characteristics capable of being distinguished for the purpose of analysis.

"Sources" and "uses" of funds : These terms are used in flow of funds particularly in order to differentiate between receipts and payments, or "incoming" and "outgoing". The use of "sources" and" funds" is preferred because payments generally convey the meaning of spending as well as lending and do not include the increases in money held. Similarly, "receipts" or "incomings" do not cover the funds available for investment or uses out of the depletion of money held in hand or in a bank.

Stock and flow variables : Stock variables are measures at a particular point of time whereas flow variables are measured over time. For instance, balance sheet represents a stock situation whereas profit and loss account represents flow situation. Similarly, capital is a stock variable whereas investment is a flow variable.

11.11 SOME USEFUL BOOKS

Central Statistical Organisation (1963) (CSO), Government of India: Report of the Working Group on Flow of Funds, New Delhi.

Roy Choudhuri, Uma Datta (1995) National Income Accounting, Macmillan, New Delhi.

11.12 ANSWERS OR HINTS TO CHECK YOUR PROGRESS EXERCISES

Check Your Progress 1

1) See secion 11.2
2) See secion 11.2
3) See secion 11.2
4) See secion 11.3

Check Your Progress 2

1) See secion 11.4
2) See secion 11.5
3) See secion 11.6

Check Your Progress 3

1) See secion 11.7
2) See secion 11.7
3) See secion 11.8

UNIT 12 INVESTMENT

Structure

12.0 OBJECTIVES

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

- explain the concept of investment in an economy;
- examine the sources of financing the investment;

- describe the estimates of investment are arrived at by the CSO and the rate of capital formation in India;
- analyse the way investment helps in raising the production of goods and services; and
- describe various issues related to investment at the macro-economic level.

12.1 INTRODUCTION

Investment is a flow concept. It is also known as capital formation. Investment is a part of the national product which has not been consumed. The national income may be either consumed or saved. Normally, a part of the national product is consumed during the year and the remaining part is saved. Thus, we have Y = C + S this is the income side.

On the expenditure side we have E C + I. National income and expenditure are identically equal. We get, C + S C + I. Thus, investment S = I is saving. This, however, is an accounting identity. In national accounting all savings are taken to have been "invested" once they have taken place. But, not all expected savings are realised as investment. This is simply because savers are not themselves always the investors and some forms of saving may, in fact, amount to withdrawal of resources from production. The equilibrium relationship between saving and investment is different from the accounting identity. This circular of income goes on moving continuously with no disruption . Saving comes back to the economy in the form of investment.

12.2 MEANING AND IMPORTANCE OF CAPITAL FORMATION

12.2.1 Capital Formation – Meaning

In economics the two terms, investment and capital formation are used interchangeably and both these terms carry exactly the same meaning, i.e. an increase in the capital stock of an economy during a given year. The only difference in the two being that the term investment is more popular in economic analysis, whereas the term capital formation is preferred to be used by the national accountants.

By capital formation (or investment), we mean the addition to the country's physical stock of capital during a period. It signifies that part of national product which is not consumed but used for increasing productive capacity in a country. It includes setting up of new factories, construction of rails, roads, bridges, dams, buildings, creation of new machinery and equipment, adding to stocks, etc. In short, the process of creation or formation of real capital in various forms is known as 'capital formation' or 'investment'.

To sum up, capital formation in national income accounting is defined as = the surplus of production over consumption in an accounting year.

12.2.2 Capital Formation vs. Capital

It is important to note here a conceptual difference between capital and investment. Capital means all capital goods in existence at a particular point of time while investment signifies only addition to capital during a given period.

Capital is a stock while capital formation is a flow. Let us take an illustration. Suppose capital stock of a country, was worth Rs.1000 crores on 1 April, 2000. Further, suppose that on 31 March, 2001 it was Rs.1200 crores. It means that Rs.200 worth of addition is made to the capital stock during the year. This addition to the capital stock is called 'capital formation'.

Capital formation during a year = capital at the end of the year - capital at the beginning of the year

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 goods during a year is investment. This is t rue about both a production unit and about the country as a whole.

12.2.3 Importance of Capital Formation

Capital formation plays a key role in economic growth of a country. Its importance can be judged from the following facts:

i) it opens up the possibilities of large scale production. Large scale production units which require huge investment can be established in the country.

ii) It enables the country to make use of modern techniques of production. In this process of helps in making scientific inventions and technological advances.

iii) It provides the necessary tools and equipments for production.

iv) It creates employment opportunities. New factories, irrigation projects, construction work certainly add to the existing opportunities of employment.

v) It may also lead to industrialisation.

12.3 CLASSIFICATION OF CAPITAL FORMATION

Capital formation is classified into two categories:

a) Gross fixed capital formation (GFCF)

b) Increase in stocks

Gross Fixed Capital Formation in India's further classified into the following:

1) Construction:

   i) building construction;

   ii) other construction ; and

   iii) land improvement and development of plantation and orchard.

2) Machinery and equipment

3) Additions to all kinds of live stocks, i.e., breeding stocks, drought animals, dairy cattle and other live-stock.

4) 'Increase in stocks' consists of increase in the stocks of

   i) materials and supplies;

   ii) work in progress (i.e., semi-manufactured goods);

   iii) finished goods;

   iv) stocks of strategic materials and other important commodities (like food-grains) held by the government; and

   v) young livestock.

In India, the share of gross fixed capital formation is far more as compared to that of increase in stocks. Not only that, it has improved over the years. In fact, this is a healthy development. The share of machinery and equipment in the GFCF has increased from 23.3 per cent in 1950-51 to 51.8 per cent in 1990-91. During the same period, the share of construction has fallen from 61.2 per cent to 40.2 per cent. This shows that the demand for machinery and equipment has been rising faster. Machine-building industry has made considerable progress in the country, but at the same time we have been importing machinery and equipment increasingly to meet their rising demand.

12.4 WAYS OF ACQUIRING CAPITAL GOODS

12.4.1 Introduction

Capital formation during a year consists of acquiring durable capital goods and net addition to stocks of materials, goods, etc. Acquiring of durable capital goods is called gross domestic fixed capital formation (GDFCF). The acquired durable capital goods, (i.e. GDFCF) is the sum of (1) new assets, and (2) the net purchases of second and physical assets from abroad in an accounting year.

12.4.2 Ways of Acquiring New Durable Assets

New Assets can be acquired in three ways:

a) by purchasing from the domestic market.

b) own account production, i.e. production by the producing units for their own use.

c) by importing from abroad.

12.4.3 Types of New Assets

The types of new assets in India are classified into the following:

a) Buildings. These include both residential buildings as well as non-residential or commercial premises like godowns, warehouses, factory buildings etc.

b) Roads and Bridges. It includes the construction of roads and bridges.

c) Other Construction Activity. This includes minor irrigation, telephone and telegraph, drainage, parking areas, etc.

d) Transport Equipments. These include locomotives, carriages, rail-lines, buses, trucks, aeroplanes, etc.

e) Machinery, Plants and other equipments. These include tools, machinery, equipment, etc., used by agricultural, industrial and service sectors of the economy.

12.4.4 Net Purchases of Second Hand Physical Assets from Abroad

Purchases of old assets (second hand assets) also form part of fixed capital formation. Producing units dispose of their outmoded and obsolete physical assets and acquire new ones to keep pace with the changing technology. These secondhand assets are purchased by less resourceful enterprises.

It should, however, be remembered that sale and purchase of physical assets within the domestic territory do not affect the overall capital formation in the country. Such a sale and purchase leads to only change in the ownership of assets. It does not make any net addition to the assets. For example, if the government disposes of the old military vehicles to the corporate sector, it will bring a fall in capital formation in the government sector, but raise capital formation in the private corporate sector. In other words, the value of gross domestic capital formation remains unaffected.

However, the sale and purchase of secondhand physical assets to and from abroad does affect gross domestic capital formation. In case, the purchase of secondhand assets from abroad is more than their sales to abroad, the net purchases of assets will be positive. As a result, the value of gross domestic capital formation will increase.

12.4.5 Change in Stocks (Inventories)

Gross fixed capital formation is also influenced by the changes in stocks. Changes in stocks in India are classified into the following:

1) Change in the stock of raw materials, semi-finished and finished goods held by households, corporate and non-corporate enterprises.

2) Stock of strategic materials, food grains, etc., held by the government.

3) Livestock raised for slaughter by enterprises.

The value of change in stock is obtained by sub-tracing the value of opening stock from the value of closing stock.

Change in Stock = Closing Stock – Opening Stock

Opening stock refers to the total quantity of goods that are available with a producing unit in the form of raw materials, semi-finished and finished goods in the beginning of an accounting year. Closing stock, on the other hand, refers to the quantity of raw materials, semi-finished and finished goods available with a producing unit at the end of an accounting year. Change in stock is the difference between the closing stock and the opening stock.

Opening stock refers to the total quantity of goods that are available with a producing unit in the form of raw materials, semi-finished and finished goods in the beginning of an accounting year. Closing stock, on the other hand, refers to the quantity of raw materials, semi-finished and finished goods available with a producing unit at the end of an accounting year. Change in stock is the difference between the closing stock and the opening stock.

Check Your Progress 1

1) Define the term investment.

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2) Distinguish between capital and investment.

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3) What is the importance of investment in an economy?

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4) What are the main components of the investment?

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12.5 GROSS VS. NET INVESTMENT

12.5.1 Net Domestic Capital Formation

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, is is gross investment. It is called gross because the consumption of fixed capital or

depreciation during the year has not been deducted from the addition of new capital. By deducting consumption of fixed capital from gross investment we get a measure of net investment. Thus, gross investment is a measure of gross addition to capital while net investment is a measure of net addition to the capital during a year.

Gross domestic capital formation (GDCF) is not a true indicator of the production potential and economic growth. For that we will have to acquaint ourselves with the concept of net domestic capital formation (NDCF). It is calculated as follows:

NDCF = GDCF – Consumption of fixed capital

12.5.2 Depreciation, Obsolescence and Capital Loss

In the process of production machinery and other capital equipments are made use of. In this process, the capital equipment undergoes wear and tear. The useful life of the capital equipment gets reduced. This wear and tear of capital equipment is know as depreciation, or consumption of fixed capital.

The useful life of the capital equipment may also get reduced due to economic, technical or external changes. For example, with the introduction of electronic typewriters and word processors, manual typewriters have become obsolete. This is know as obsolescence of capital equipment. If such an obsolescence is foreseen in advance and is taken care of while calculating depreciation, it is called consumption of fixed capital.

The capital equipment may also lose its utility due to unknown or external factors like natural calamities such as floods, earthquakes, storms, etc. Such losses to capital equipment are know as capital losses. Unforeseen obsolescence is also treated as capital loss.

In order to keep the production process going smoothly it is essential that the old and obsolete physical assets are replaced by new ones. This will not only keep the physical assets intact, but also help in the acquisition and use of new assets which may be technically far more superior and productive. Provision made for replacing the old assets by new fixed assets is known as depreciation provision or replacement cost of fixed assets.

Consumption of fixed capital is nothing but replacement cost of existing fixed capital. Making depreciation provision keeps the value of existing capital intact.

There are two sources of financing gross capital formation: Gross domestic saving and net capital inflow from abroad. Gross domestic saving is made up of (i) provision of depreciation funds and (ii) net domestic saving. On saving we have discussed in details in unit –10.

Net capital inflow from abroad includes –(i) net capital transfer from abroad and (ii) Net borrowings from abroad. By ‘net’ here we mean inflow minus outflow from an economy.

For the sake of convenience and simplicity, only two broad sources of finance, viz., gross domestic saving and net capital inflow are considered here. The data relating to these two sources in percentage terms in the Indian economy is given in Table 12.1.

The financing of capital formation is mainly by saving generated in the domestic economy. These estimates of domestic saving have been discussed in Chapter-10.

However, domestic saving, specially in a developing economy, is not always sufficient to finance the total development plan requirements of the economy. Therefore, domestic savings are supplemented by the inflow of capital from abroad. Thus, total capital formation in an economy equals to domestic saving plus net inflow of capital from abroad.

Table 12.1: Financing of Gross Domestic Capital Formation in India

(In Percentage)

Five Year Plans	Gross Domestic Saving	Net Capital Inflow from Abroad
I	96.5	3.3
II	81.0	19.0
III	85.5	14.5
IV	95.6	4.4
V	102.4	-2.4
VI	93.6	6.7
VII	89.4	10.6

Table 12.1 reveals that the relative contributions of gross domestic saving and net inflow of funds have been different over different five year plans. Upto the second five year plan, the country'' dependence on the outside world for financing its gross capital formation increased. But, after Second Five Year Plan, there was a continuous decline in dependence on this source. The fifth plan was, in fact, a different plan. During this period, gross domestic savings were higher than the amount required to finance GDCF by 2.4 per cent. In other words, there was a net outflow of funds from India to the rest of the world. Thereafter, share of gross domestic savings again declined. Our dependence on foreign funds again has grown during sixth and seventh plan periods.

With the recent changes in our economic policy, efforts are being made to remove all possible restrictions on the inflow of foreign capital. A favourable environment is being created to attract direct foreign investment. The new policy will, therefore, raise the share of foreign investment in the coming years.

Check Your Progress 2

1) Differentiate between gross capital formation and net capital formation.

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2) What are the various sources of financing the capital formation.

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3) What do you understand by the term 'Net inflow of capital from abroad' (NCA).

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12.6 ESTIMATES OF INVESTMENT IN INDIA

12.6.1 Introduction

Investment at he macro level can be measured in two alternative ways:

i) As an excess of production over consumption: In other words, the part of country's production which is not acquired for consumption is investment, i.e. Investment = Production – Consumption.

ii) 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 exist at the beginning of the year. Investment is the net addition made to this during the year.

For illustration, suppose capital stock at the beginning of the year i.e. 1.4.96 is Rs.1000 crores. Suppose at the end of the year i.e. on 31.3.1997 capital stock is Rs.1100 crores. This addition of Rs.100 crores of capital assets during the year is investment.

Investment = Capital stock at the end of the year – Capital stock at the beginning of the year

= 1100 – 1000

= Rs.100 crores.

In India estimates of investment are prepared by the Central Statistical Organisation (CSO) . CSO prepares estimates of capital formation in three forms : (i) by type of institution, (ii) by type of asset, and (iii) by industry of use.

12.6.2 Investment by Type of Institution

By type of institution, the Indian economy is divided into (i) Public Sector; (ii) Private Corporate Sector; and (iii) Household Sector.

In practice, CSO prepares estimates for the total economy by using commodity flow method. Having obtained the total estimates, the estimates for the Public Sector and the Private Corporate Sector, are prepared separately. These are deducted from the estimate of the whole economy to obtains the estimates for the household sector. Thus, the estimates are first made for the economy, for the Public Sector and for the Private Corporate Sector. The estimate for the Household Sector is the residual.

12.6.3 Investment by Type of Assets

In the method of estimates of capital formation by type of assets, CSO uses

commodity flow method. The commodity flow method as used by the CSO is described briefly as follows.

Gross Capital formation = Production of Capital goods at ex-factory prices
+ Excise duty paid on such goods
- Addition to Stocks
+ Imports
- Exports
+ Trade and transport margin

Types of fixed assets : CSO classifies fixed assets into construction and machinery and equipment, Construction for military purposes, Defence equipment, durable goods in the hands of the households and increase in the stocks of defence materials are excluded from the scope of capital formation. However, capital outlays of defence enterprises on ordnance and clothing factories are included.

Construction: Construction covers all new construction, alternations and repairs of buildings, highways, streets, bridges, airports, rail-lines, communication systems, improvements on agricultural land, dams, etc.

Machinery and Equipment: This covers all types of machinery used in agriculture, power generating, manufacturing, etc. and also transport equipment, furniture and furnishings. Addition in livestock in respect of breeding stock, drought animals, dairy cattles and other animals raised for wool clippings are also covered. Additions to livestock other than these are accounted for under change in stocks.

Changes in Stocks : Changes in stocks consist of materials and supplies, work-in-progress and finished products and goods in the possession of producers and dealers. Stocks of strategic materials, grains and other commodities of special importance to the nation in the possession of government are also included in the estimates of change in stocks.

12.6.4 Investment by Industry of Use

As stated earlier, CSO also prepares estimates of capital formation by industry of use.

For the Agricultural sector, estimates are separately separately for the public sector, Private Corporate Sector and Household Sector.

The Manufacturing sector is bifurcated into registered and unregistered. For registered manufacturing, the estimates are using the ASI data. In the case of unregistered sector, estimates are first prepared for the base year. These estimates are then updated with the help of index number of gross value added by this sector.

In the construction sector estimates for the public sector are made by using budgetary data. For the private corporate sector the estimates are prepared by the RBI . In the case of Household Sector, estimates are first prepared for some base year and for subsequent years estimates are obtained by using output ratios.

In the case of Transport, estimates for railways are obtained by using data in the Railway Budget. The remaining part of the transport is divided into organised sector like Air Transport, State Road Transport, etc. and Unorganised part. For organised part data are available whereas for the uporganised part the estimates are for some base year are prepared first and then updated by using suitable indicators.

For communication, Banking and Public Administration and Defence as the relevant data are available from various sources, the same are compiled and estimates of capital formation obtained.

For the rest of the sectors, as data are not available in the desired form, the estimates for bench marc years are prepared by using Survey data. These estimates are updated by using suitable indicators like output ratios, etc.

12.7 PUBLIC SECTOR VERSUS PRIVATE SECTOR INVESTMENT IN INDIA

12.7.1 Distribution of Investment

As we know, the public sector has been assigned an important role in Indian planning. As a result of it, almost equal share of investment has taken place in the Public Sector. This is clear from the following Table 12.2.

Table 12.2: Capital Formation by Public and Private Sector in India

Plan	Public Sector	Private Sector	Total
I (1951-56)	46.4	53.6	100.0
II(1956.61)	54.6	45.4	100.0
III(1961-66)	60.6	39.4	100.0
IV(1969-74)	60.3	39.7	100.0
V(1974-79)	43.3	56.7	100.0
VI(1980-85)	47.8	52.2	100.0
VII(1985-90)	45.7	54.3	100.0
VIII(1992-97)	32.1	67.9	100.0

12.7.2 Trends in the Distribution

The share of Public Sector Investment to total investment has continuously been increasing upto fourth plan. It declined during the Fifth Five Year Plan. It accounted for only about 43.0 per cent of the total investment in the fifth plan as against 60 per cent during third and fourth plans. There was no change in this during sixth and seventh plans. But a major change of the trend was seen in eighth plan. This plan was weighed in favour of the private sector. As result of it, the share of private sector in the total investment has increased sharply. During the eighth plan, the private sector investment was 67.9 per cent of the total investment while that of public sector was only 32.1 per cent.

12.8 INVESTMENT AND GROWTH IN AN ECONOMY

12.8.1 Introduction

Let us now study the relationship between investment and growth, i.e., how it is essential for the growth of an economy that investment not only takes places but it is made at an increasing rate.

12.8.2 Some Concepts

However, before presenting the relationship between investment and growth, a few terms have to be understood clearly. By dividing the total capital stock in an economy by the total output (income) in a year we get the capital output ratio. $\frac{K}{Y}$ Let this be denoted by . Similarly, if we divide investment by Y (i.e. increment in the capital stocks) by increase in the output, we get increment capital-output ratio (ICOR). This is denoted by Δ K/ Δ Y.

Another term is the rate of investment. This equals to the total investment in a year divided by the total output (or income) in that year. Finally, we have the concept of rate of growth of output which is denoted by Δ Y/ Y. Given these parameters, we proceed as follows.

12.8.3 Relation between Rate of Investment and Rate of Growth

Now, productivity of capital in an economy equals the output per unit of capital employed. This is denoted by Y/K. This is the reciprocal of the capital-output ratio K/Y. Therefore, if capital-output ratio (COR) and ICOR are equal, the productivity of capital and investment will also be equal. Therefore, if we multiply rate of investment

(Δ K/Y) by the productivity per unit of investment $\frac{\Delta Y}{\Delta K}$.

$$\frac{\Delta K}{Y} \times \frac{\Delta Y}{\Delta K} = \frac{\Delta Y}{Y} = g$$

Thus, it will be seen that in this case, 'g' i.e. growth rate in output depends directly on the rate of investment in an economy.

Not only that, investment should increase at the same rate at which the income is increasing. Only then $\Delta K/Y$ will remain stable. In case $\Delta K(= I)$ is increasing at a lower rate than Y, the ratio will decline and consequently the growth rate also. The vis-a-versa also holds.

Therefore, in the above conditions one can say that investment is very crucial for the growth rate in the economy.

Check Your Progress 3

1) Who prepares estimates of investment in India?

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2) State the types of estimates of investment prepared in India.

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3) What has been the share of investment in the Public Sector in India during the eighth Plans?

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4) State briefly the relationship between investment and growth in an economy.

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12.9 LET US SUM UP

1) Capital formation plays a key role in economic development. It enables the country to set up factories, to make use of round about techniques of production. It creates employment opportunities.

2) The process of capital formation is directly and solely dependent on (a) Volume of saving and (b) mobilisation of saving.

3) Capital formation is made up of :

   a) Gross Fixed Capital Formation (GFCF) (b) increase in stocks.

4) GFCF = Construction + Machinery and equipment + Live stock.

5) Increase in stock = Raw materials, semi-finished goods and finished goods + stocks of strategic materials held by the government + young livestock

6) Of the two main components of GFCF, the share of machinery and equipment is higher than that of construction in India.

7) In the eighth plan the private sector accounted for 67.9 per cent of the total investment as against only 32.1 per cent by the public sector.

8) There are three main sources of financing gross capital formation in an economy. These are : (I) consumption of fixed capital ; (ii) Net Domestic Saving; and (iii) Net inflow of funds from the rest of the world.

9) Major finance for capital formation comes form domestic savings.

12.10 KEY WORDS

Capital Formation : Net addition to the existing stock of physical assets.

Rate of Capital Formation : It is the ratio of the gross capital formation to the gross domestic product at market prices.

Incremental Capital-Output Ratio : The ratio of gross capital formation and the related increase in GDP.

Saving : that part of national income which is not spent on consumption.

Rate of saving : Ratio of gross saving to GDP.

Household Sector : It includes all households, unincorporated business enterprises and private non-profit-making institutions serving households.

Private Corporate Sector : It is made up of private corporate sector and corporate banks and societies.

Public Sector : It includes government administration, departmental enterprises, government companies and statutory corporations.

Net Borrowings from the Rest of the World : It refers to the excess of net incurrence of liabilities over the net acquisition of financial assets.

Propensity to Save : The ratio of saving and income is termed as propensity to consume.

12.11 SOME USEFUL BOOKS

Bhatia, D.P. (1992) *Capital and Productivity*, Khama Publishers, New Delhi, Chapters 2, 3 and 7.

Bhatia, D.P. (1996) *National Accounts – Concepts and Estimates*, Khama Publishers, New Delhi, Chapters 1,13 and 14.

CSO (1989) *National Accounts Statistics – Sources and Methods*, New Delhi.

CSO (2005) *National Accounts Statistics*, New Delhi.

Government of India, Ministry of Finance, Economic Division, *Economic Survey*, (various years).

Junankar, P.N. *Investment: Theories and Evidence*, Macmillan, London.

12.12 ANSWERS OR HINTS TO CHECK YOUR PROGRESS EXERCISES

Check Your Progress 1

1) Investment means an increase in Capital stock of an economy during a given year it signifies that part of national product which is not consumed

but used for increasing productive capacity in a country. It includes setting up of new factories, construction of rails, roads, bridges, dams, buildings, creation of new machinery and equipment, adding to stocks, etc. In short, the process of creation of formation of real capital in various forms is know as 'capital formation' or 'investment'.

2) Capital means all capital goods in existence at a particular point of time while investment signifies only addition to capital during a given period. Capital is a stock while capital formation is a flow.

3) The importance of investment in an economy can be explained as under:

   a) It leads to round about process of production as it uses division of labour which leads of specialisation.

   b) Helps large scale production

   c) Makes it possible to use modern techniques of production. It also in making technological progress.

   d) Creates employment of opportunities

   e) Leads to industrialiation

4) Components of investment are:

   a) Gross fixed capital formation and

      i) New Assets

      ii) Roads,

      iii) Bridges,

      iv) Buildings

      v) Construction activities

      vi) Transport

      vii) Equipment

      viii) Machinery, plant

   b) Increase in stocks

      i) change in the stocks of finished and semi-finished goods and raw materials with the firms

      ii) change in the stock of strategic materials and foodgrains with the government

      iii) change in the livestock raised for slaughter by enterprises.

Check Your Progress 2

1) Addition of new capital goods during the year is gross investment. It is called gross because consumption of fixed capital or depreciation during the year has not been deducting from the addition of new capital by deducting consumption of fixed capital (depreciation or wear and tear) we get next investment. Thus, gross investment is a measure of gross addition to capital while net investment is a measure of net addition to the capital during a year.

i) Gross investment is not a t rue indicator of production potential and economic growth. However, net investment is the true indicator of Economic growth.

ii) ***Depreciation***: In the process of production capital equipment under goes wear and tear . The useful life of the capital equipment gets reduced.

iii) ***Obsolescence:*** Due to economic, technical or external changes useful life of capital equipments get reduced.

iv) ***Capital Loss***: When capital equipment lose its utility due to unknown or external factors like natural calamities such as flood, earth quakes, cyclone etc, unforeseen obsolescence is also treated as capital loss.

2) There are three sources of financing the capital formation:

i) domestic saving and

ii) Net Capital transfer from abroad and

iii) Net borrowing from abroad

3) Net inflow of capital from abroad (NCA) means inflow of capital from abroad minus outflow from an economy.

Check Your Progress 3

1) In India estimates of investment are prepared by the central statistical organisation (CSO) .

2) Estimates in three forms (a) by type of institutions (b) by type of asset, and (iii) by industry of use.

3) During the eight five year plan (1992-97) the share of public sector investment in total investment was 32.1 per cent.

4) Growth rate in output depends directly on the rate of investment in and economy investment is very important for increasing the growth rate of economy.

UNIT 13 CLASSIFICATION OF ECONOMIC TRANSACTIONS AND TRANSACTORS

Structure

13.0 OBJECTIVES

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

- describe the relationship between transactors and transactions;
- discuss the role and purpose of classification of economic activities and transactors; and
- explain the classification of total output from the viewpoint of producers, users and income receivers.

13.1 INTRODUCTION

In any macro economic system, three basic 'flows' are found very crucial. These relate to "products", "final expenditures" or "disposition of total product", and "incomes" generated. These flows are the result of the multitude of transactions, which take place through purchases and sales of goods and services. These also include purchase and sale of factor services like labour and capital.

All those who perform these economic transactions are known as transactors. They are closely related to each other and can be further disaggregated. This requires an elaborate classification of the transactors operating in the economy. What is the nature of the basic linkages between the main flows of transactions and the transactors is discussed on the following sections.

13.2 PURPOSE OF CLASSIFYING THE TRANSACTIONS AND TRANSACTORS

The classification of the economic transactions and transactors can be useful in many ways. Some of important uses of such a classification are discussed below:

First, disaggregated figures as compared to aggregated figures give a better analytical understanding of the economy. For instance, if the national output falls, aggregate data do not tell us which units of production are responsible for the fall in output.

Second, the disaggregated analysis can help better in formulating economic policies required for increasing national output and managing the macro economy.

Third, the classified accounts, in general, help in the preparation of activity accounts through the use of the principle of double entry accounting system. As a result, the different types of inter-relationships emerging out of the process of disaggregation through classification can help in understanding the basic structure of the modern economic system.

Given the important merits, it is useful to classify the economic transactions and transactors into broad classes. This can be done from the point of view of total supply of output, the final uses or the disposition of total output, and also from the perspective of income receivers. We first take up the total supply of goods and services, domestic production, and producers.

Check Your Progress 1

1) Draw a distinction between a transactor and a transaction.

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2) What are the advantages of classifying the transactions and transactors into groups?

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13.3 CLASSIFICATION OF ECONOMIC TRANSACTIONS RELATING TO TOTAL SUPPLY OF GOODS AND SERVICES AND PRODUCERS

Broadly speaking, there are two groups of transactors, domestic and foreign. They undertake different types of economic activities. Domestic transactors include consumers, producers and the government. They also engage in

transactions with foreign transactors. All such foreign transactors are treated as a separate sector, known as 'rest of the world' sector. These sectors contribute towards total supply of goods and services in a given period of time. This implies total output comes from two sources: domestic production (supplied by the resident producers), and imports (supplied by the rest of the world). Both sources are discussed in detail on the following pages:

a) **Output emerging from domestic producers and production:** Goods and services are constantly flowing out of the innumerable units of production. These producing units can be classified into the following categories:

b) **Industries:** Industries are establishments whose activities are intended to be self-sustaining, whether through production for the market or for own use. These industries constitute all the establishments who produce goods and services for sale in the market. The prices would be fixed in a manner that the cost of production is covered along with a profit margin.

The outputs of industries are termed as commodities. The value of output would consist of: value of intermediate consumption (non-durable goods and services that are used of in the process of production), compensation of employees, cost of capital used, consumption of fixed capital, indirect taxes paid by the producers less of subsidies.

Industries include the following categories:

i) All the public sector enterprises including departmental enterprises (like railways, posts and telegraphs, government, forestry etc.) and non-departmental enterprises (like public sector corporate units);

ii) Private corporate sector enterprises (both financial and non-financial);

iii) Private unincorporated enterprises;

iv) Own account activity of households and private non-profit bodies, such as, farm produce (including forestry, fishing, hunting, mining etc.) for self consumption; and

v) Own account construction of dwellings meant for own use.

As per the International Standard Industrial Classification (ISIC) of all economic activity (1968), the major divisions of industries are as follows:

a) Agriculture, hunting, forestry and fishing

b) Mining and quarrying

c) Manufacturing

d) Electricity, gas and water

e) Construction

f) Wholesale and retail trade and restaurants and hotels

g) Transport, storage and communications

h) Financing, insurance, real estate and business services and

i) Communities social and personal services.

2) **Producers of Government Service (PGS):** This sector consists of all departments, establishments and bodies of the government, including Central and State Governments, and local bodies. Their activities may be classified into the following:

   i) Production of collective services: Collective services of the government include wide range of activities, which can be classified into the following categories:

      a) General public services including general administration, external affairs, public order and safety and general research; (b) Defence; (c) Education; (d) Health; (e) Social security and welfare services; (f) Housing; (g) Community and social services; (h) Economic services like railway transport, post and telegraph and telephone services etc.; (i) Other services, such as public debt transactions; transfers of general character to other governments services in the periods of national disasters; Others not classified elsewhere.

   ii) Production of commodities: In some countries, the government itself produces commodities. However, the scale of such services varies significantly. Many governments own and control arm and ammunition factories, building and road construction, telecommunication, rail and air services etc. Since these activities of the government administrative departments are meant for sale to the public at some price, they are termed as "commodities".

3) **Producers of Private Non-profit Services to Households (PPNSH):** This sector consists of voluntary organisations or associations of individuals, who have organised themselves to carry on some specific activities to serve the interests of the households. These agencies may comprise trade unions; churches; charitable institutions; religious and spiritual organisations; research, development and scientific institutions; recreational centres; professional organisations, schools, hospitals, etc. They may be incorporated or unincorporated.

   These producers generally provide services to households on non-profit or below the cost to the household. Their production is not termed as 'commodities'. However, in some cases, PPNSH may also produce goods and services for sale in the market at a price, which would cover the cost of production. These goods may include books, periodicals, pamphlets etc. which is essential for sick and disabled persons.

4) **Producers of other Domestic Services to Households (DSH):** These services include services provided by domestic servants; maidservants; gardeners, driving schools etc. Since there is no evaluation of their costs, their services are not treated as commodities. These are considered other goods and services and the values of the output is considered to consist of compensation of employees.

   a) **Output emerging out of the Transactions with the rest of the world (imports):** Like domestic production, imports can be classified into: (i) Commodities and; (ii) Other goods and services. Imports of "other goods and services" include two types of services.

b) Direct purchases abroad by resident households. This would include such purchases as made by tourists, travelling businessmen and government officials, crews, border and seasonal workers and diplomatic and military personnel stationed abroad. Their purchases include goods purchased in the rest of the world on the spot or brought into the country of residence and of services including local transportation.

   It should be made clear that in case of resident households, all purchases made abroad irrespective of the nature of goods or services purchased become part of the inputs of "other goods and services".

c) Direct purchases abroad by government agencies on current account. These include purchases for the government's extra-territorial bodies, such as embassies, consulates etc. The direct purchases made by government on capital account (durable capital goods) form part of imports of commodities.

All other expenditures on imports of goods and services (other than direct purchases abroad made by the resident households and producers of government services of the given country) are accounted for in the imports of "commodities". They include imports of merchandise as well as other services like transportation, insurance, handling and other services. Imports of all the commodities are evaluated at c.i.f. value, i.e. cost of goods plus insurance and freight charges.

On the basis of above discussions, total supply of goods and services can be classified into "commodities" and "other goods and services".

Commodities constitute (i) gross domestic outputs contributed by industries, producers of government services and producers of private non-profit services to households and, (ii) imports. The imports include, imports of merchandise c.i.f., transport and communication services by non-resident carriers, insurance services, direct purchases abroad on capital account, Miscellaneous commodities (like repair charges, management and consultation fees, advertising fees, gifts in kind, etc.), and adjustments of merchandise imports to change of ownership basis.

Other goods and services constitute (i) gross domestic output produced by PGS, PPNSH, and DSH and (ii) imports comprising direct purchases abroad by resident households and by producers of government services.

It may be mentioned that one has to take out the value of inputs (intermediate consumption) for all the producers of goods and services produced and made available in the economy out of the total output to work out the value added.

Disposition of total supply: intermediate consumption and final uses

Intermediate Consumption

a) **Intermediate Consumption by Non-Financial Industrial Establishments**: Intermediate consumption covers non-durable goods and services used up in production, including repair and maintenance, research and development and exploration cost. It also includes indirect outlays on financing capital formation, such as flotation costs for loans and transfer

costs involved in the purchase and sale of intangible assets and financial claims.

Intermediate consumption is, as for as possible, valued at purchasers' values at the moment of use. That is, it takes into account cost incurred on the goods and services to the point of delivery to the consuming establishment.

The non-financial industries themselves use a significant part of the total supply of goods and services as intermediate consumption. This refers to non-durable goods and services, which are used up in the process of production. Non-durable goods may have an expected lifetime of use of less than a year.

In case of **industries**, the intermediate consumption would consist of commodities either produced by domestic industries, or obtained from imports. All expenditures on such goods and services incurred by industrial units, which are meant to be provided to employees with an intention to provide them benefits should be treated as compensation of employees. They should not be considered as expenditure on intermediate consumption. But expenditures incurred on travelling, entertainment and on other such items meant for the promotion of business should be treated as intermediate consumption.

Expenditures on minor repairs and maintenance of fixed assets, which are not supposed to lengthen the life of a fixed asset, should be treated as intermediate consumption. Expenses on major repairs expected to lengthen the life of the fixed assets are treated as expenditure on fixed capital formation.

Commodities consumed in research, development and exploratory activities of industries, by convention, form part of intermediate consumption because producer is not sure of some concrete benefits that would emerge out of such activities. A similar approach is followed in respect of expenditure on advertising market research, and public relation activities.

b) **Intermediate Consumption By Financial Establishment:** Financial establishments include: (i) banks and other intermediaries and (ii) those entities handling insurance and pension funds. Banks and other financial intermediaries earn incomes in two ways:

First, they charge to certain services to their customers, such as, collection charges in respect of cheques, discounting charges in respect of bank drafts etc.

Second, they earn from the difference between the interest receipts on loans and advances given by them and the interest payments made by them on the deposits of their customers.

With a view to attracting deposits they render many banking services to their customers free of cost. It, therefore, becomes necessary to impute service charges. The imputed value of service charges is taken as a difference between the interest receipt and the interest paid by the banks. Thus, the total value of their output is taken as the sum of the exact service charges received by them and imputed value of service charges. Their

intermediate consumption is represented by their current expenditure exclusive of factor payments. The gross value of outputs of banks and other financial intermediates becomes intermediate consumption of non-financial industrial establishments.

In the case of insurance (casualty), intermediate consumption amounts to current expenditure exclusive of factor payments. The value of output is taken as the difference between the premiums received and the claims paid. For life insurance, the service charges is considered equal to the excess of premiums received over the sums of claims paid and the net addition to actuarial reserves.

In the case of pension funds, service charge is taken as equal to the administrative expenses of these funds.

c) **Intermediate consumption in respect of PGS, PPNSH and DSH:** The intermediate consumption of PGS and PPNSH consists the following four items. One, purchases of goods and services on current account less sales of similar second-hand goods and scraps and wastes. Two, value of goods in kind received as transfers or gifts from foreign governments, except those received for distribution to households without renovation or alteration. Three, durable goods acquired primarily for military purposes. Four, goods and services paid for by the government but furnished by private suppliers to individuals, provided that the individuals have no choice of supplier.

Governments also make purchases of strategic materials and goods of special importance to the nation. Such purchases are treated as capital formation in the form of addition to stocks and not as intermediate consumption. All purchases for military purposes by the PGS are treated as intermediate consumption even if they are like these of durable fixed assets. This is because PGS do not use them for production of goods and services for sale on the market. However, family dwellings for military personnel, defence office buildings etc. should not be treated as intermediate consumption but as fixed capital formation. Construction of schools, hospitals, airfields, or roads for use by the armed forces are treated as intermediate consumption, though these facilities might be put to civilian use at times also.

The intermediate consumption of PGS would consist of both ‘Commodities’ and ‘Other goods and services’. ‘Commodities are obtained from industries, from imports and also from PPNSH. “Other goods and services” in case of PGS comprise direct purchases abroad by government on current account. Intermediate consumption of PPNSH may consist of “Commodities” purchases from industries from imports, and from PGS.

In case of DSH, there is no intermediate consumption of “commodities”. In this case, there is no difference in the value of total output, product and net output.

Given the information on the goods and services and intermediate consumption, Gross Domestic Product can be worked out in two ways:

i) Gross value of outputs (measured at producers prices) emerging from industries, PGS, PPNSH and DSH, minus the value of intermediate consumption at purchasers prices plus indirect taxes less of subsidies.

ii) Gross value of output measured at approximate basic value plus indirect taxes net of subsidies at the aggregated domestic level minus intermediate consumption measured at purchaser prices.

Check Your Progress 2

1) Name the different transactors involved in total supply of goods and services.

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2) Who are the key domestic producers in an economy from the viewpoint of national income accounts?

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3) Describe the important economic activities included in industries as a producing sector.

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13.4 CLASSIFICATION OF TRANSACTIONS RELATING TO USES OF FINAL OUTPUT

After having discussed the sources of the total supply of and the suppliers of commodities and other goods and services, it may be important to discuss the uses and the users of the total supply of goods and services.

Final users: These would include: (1) consumers of the domestic economy comprising government bodies, resident households, and private non profit bodies; (2) producers of domestic economy comprising industries, producers of government services and producers of private non profit services to households; (3) residents of the given country.

Use of final goods and services: It is also known as disposition of final output. This can be looked at both as gross domestic product and, as total supply of final goods and services. The uses of gross domestic product are: (1) Final

consumption expenditure; (2) gross capital formation constituting fixed assets and addition to the stocks; (3) net exports (exports minus imports). The details of these uses are given below:

Final consumption expenditure: The domestic final consumption is made up of the actual consumption expenditure of resident households, government bodies and Private non-profit institutions serving households. It is measured at purchasers prices.

The expenditure on final consumption of the households includes their outlays on non-durable and durable goods and services (like medical care, education, entertainment etc.) measured at purchasers prices reduced by net sales of second-hand goods and of scraps and wastes. Such expenditure also includes agriculture goods produced for self-consumption, imputed gross rent of owner-occupied dwellings, and payments made as wages and salaries by an employer, such as food, shelter or clothing and other fringe benefits. The employers' expenditures on employees in respect of recreational, educational, and medical services has to be excluded from the final consumption of the households.

Final Consumption of Government (PGS) and Private Non-Profit Bodies (PPNSH): PGS and PPNSH produce a variety of goods and services. Their consumption expenditure is measured as the total services they produce for their own use and is valued at cost.

Government final consumption expenditure is equal to the service produced by general government for its own use. Since these services are not sold, they are valued in the gross domestic product at their cost to the government.

The expenditure of private non-profit institutions serving households includes purchases and the value of transfers of goods and services received in kind, compensation of employees, consumption of fixed capital, and indirect taxes paid by these institutions, less their sales of goods and services.

Gross domestic capital formation (GDCF): GDCF is the sum of the gross domestic fixed capital formation (GDFCF) and increases in stocks with the producers within the domestic territory of the country. GDFCF include purchases and own-account production of new producers durable goods, reduced by net sales to the rest of world of similar second-hand and scrapped goods. Fixed assets are durable goods whose lifetime of use is at least one year. GFCF out of domestic production inside the country would include the outlays on the following items. These are: additions to the stocks of fixed assets; on major repairs maintenance and alterations which are expected to extend the life of the assets; on improvement of land, reclamation, extension of timber tracts, mines, plantations, orchards, and similar agricultural holdings and, on breeding stocks, draught animals; dairy coffee etc.

Exports of goods and services: Exports are valued f.o.b. (free on board), whereas imports are valued c.i.f.(cost, insurance, and freight). In other words, f.o.b. values of exports include costs (like export duties, loading charges etc.), of transporting the goods up to the customs frontier of the exporting country. C.i.f. values of imports would mean import values include all charges like cost, insurance, and freight, which are to be met by exporters up to the customs frontier of the importing country.

Check Your Progress 3

1) How total supply of goods and services or gross domestic product is disposed off in an economy?

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2) Discuss the term intermediate consumption. What would be included in the intermediate consumption for producers of government services and private non-profit services to households?

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3) Write brief notes on (i) private final consumption expenditure and (ii) gross capital formation, as final uses of gross output.

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13.5 CLASSIFICATION OF TRANSACTIONS RELATING TO THE FLOW OF INCOME AND ITS DISPOSITION

It is evident from the above pages that resident producers can be classified as industries, government, private non-profit services, and domestic service providers. Similarly, gross supply of goods and services comprises domestic production and imports, which can be further classified into commodities and other goods and services.

In addition, there can be a third way of looking at the output, that is, output as a flow of income. This flow can be seen as a flow passing between producers and the suppliers of factors of production. Accordingly, gross incomes measured at market prices originating in the production process is the sum of incomes received in the domestic economy. It would consist of Compensation of

employees, operating surplus and withdrawals from entrepreneurial incomes, consumption of fixed capital, and excess of indirect taxes over subsidies. These are discussed in detail below:

1) **Compensation of employees**: In national accounting, employees are the recipients of the income termed as compensation of employees. Employees include persons engaged in the activities of incorporated enterprises, government services (including members of the armed forces) private non-profit institutions and incorporated business properties of incorporated enterprises. Unpaid family members are excluded from the scope of employees.

   Compensation of employees includes: (a) wages and salaries in cash as well as in kind; (b) employers contributions to social security schemes; (c) employers' contribution to private pension, family allowances, contribution to health and other casualty insurance, life insurance etc.

2) **Operating surplus and withdrawals from entrepreneurial incomes**: Operating surplus is an income component and, it originates only in the case of industries. Other producers of the economy like PGS and PPNSH, do not have any operating surplus.

   Operating surplus at factor cost is estimated as producers value of outputs of industries minus values of intermediate consumption (measured at purchaser's prices) minus compensation of employees. Including indirect taxes and duties, one would get operating surplus at market prices.

3) **Consumption of fixed capital:** Consumption of fixed capital represents loss of fixed capital due to its use in the production processes. It is a measure of that part of gross product, which is set aside in every accounting year as an allowance for normal wear and tear, foreseen obsolescence and probable accidental damage to fixed capital not made good by repair.

   Damages due to abnormal natural calamities, unforeseen obsolescence, and depletion of natural resources etc. are to be considered as capital losses and would not form part of capital consumption. These would appear as changes in the balance sheet.

   Consumption of fixed capital is attributable to all the fixed assets of industries, PGS and PPNSH. However, on practical grounds, consumption of fixed capital is not provided for certain fixed assets of the PGS like roads, dams, backwaters or similar construction assets. Data in respect of these are not easily available. Therefore, in case of such government assets, it is assumed that normal repairs and maintenance expenditures are able to keep government repairs capital in fact.

4) **Indirect taxes:** These taxes are defined as taxes chargeable to the cost of production or sale of goods and services. They include: (a) import and export duties, (b) excise, sales, entertainment and turnover taxes, (c) real state, and land taxes, (d) levies on value added the employment of labour, (e) motor-vehicle, driving test, license, airport and passport fees, and (f) the operating surplus of government fiscal monopolies.

13.6 CLASSIFICATION OF INCOME RECEIVERS

It has been noticed above that receiving sectors are the domestic economic agents, who supply their factor services. Income receiving sectors are classified on institutional basis. The important reasons for undertaking such a classification is to take care of multiple production activities of one corporate unit. Institutional sectoring, therefore, helps in accounting for all the financial flows of the system. They can be classified in the following manner:

1) Non-financial enterprises – corporate and quasi corporate: It comprises public sector enterprises, non-financial corporate enterprises like corporations and joint stock companies, all large unincorporated public and private enterprises etc.

2) Financial institutions including central bank, public and private banks, insurance companies and all other entities engaged in financial transactions.

3) General government including central, state and local level governments.

4) Private non profit institutions serving households: These include all those institutions, which furnish services relating to education, health, culture, recreation, and other social and community services.

5) Household including private non-financial unincorporated enterprises: This category comprises all those households who are employees, or involved in agricultural and non-agricultural activities, or partnership firms not included in the category of non financial enterprises (item 1).

Check Your Progress 4

1) Explain how transactions are classified to indicate output as flow of income.

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2) List out the income receiving domestic economic sectors.

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3) Explain how total supply of goods and services or gross domestic product is disposed off in an economy.

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4) Discuss the term intermediate consumption. What would be included in the intermediate consumption for producers of government services and private non-profit services to households?

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13.7 LET US SUM UP

The total supply of goods and services comprises total outputs plus imports. In the production process, the suppliers of goods and services are: industries; producers of government services (PGS); producers of private non-profit services to households (PPNSH); and producers of domestic services (DSH); and the rest of the world sector. The first four are the domestic suppliers whereas the last sector deals with the imports and exports of goods and services of the given country. It is known as the rest of the world.

On the basis of above discussions, total supply of goods and services can be classified into "commodities" and "other goods and services.

When we deduct from the total supply (i.e. output) the goods and services going as intermediate consumption, the remaining part of the output is available for final uses. Intermediate consumption includes those goods and services, which are used by the producers of goods and services, as their inputs. Intermediate consumption is required for production of goods and services by industries, PGS, and PPNSH.

The total supply of goods and services is made available to the country for final uses. The final users are industries, resident households, government and private non-profit bodies. The final uses are consumption by residents, gross domestic capital formation, and exports.

It may be stated that final uses are made on the basis of incomes earned by the resident economic agents for the supply of their factor shares. The receivers of such incomes are classified as non-financial enterprises – corporate and quasi-corporate; financial institutions; general government; private non-profit institutions servicing households, and households including private non-financial incorporated enterprises.

13.8 KEY WORDS

Compensation of Employees : This can be used both as a domestic as well as national concept. As a domestic concept, it refers to the compensation of employees paid by resident producers. This includes payments to non-resident employees working in the country but excludes payments to resident employees temporarily working abroad. As a national concept, compensation received by residents households from domestic producers and that received from the rest of world are gathered together.

Gross Capital Formation : It is the sum of the increase in stocks and gross fixed capital formation.

Gross output of Goods and Services : It covers both the value of goods and services produced for sale, and the value of goods and services produced for own use.

Intermediate Consumption : It covers non-durable goods and services used up in production, including repair and maintenance, research and development and exploration costs.

Operating Surplus : It is defined as the excess of value added over the sum of compensation of employees, consumption of fixed capital, and net indirect taxes.

Private Final Consumption Expenditure : It is the sum of final consumption expenditure of households and that of private non-profit institutions serving households.

Value Added of Industries : Value added of industries at producers prices is equal to the gross output of the industries at producers prices less the value of their intermediate consumption at purchasers prices.

13.9 SOME USEFUL BOOKS

Beckman, Wilfred, 1980. *An Introduction to National Income Analysis*, Wiedenfeld and Nicolson: London (Chapters 5)

Lal. Ram N, (1985) *The System of National Accounts and Material Balances*, Allied Publishers Pvt Ltd, Delhi.

National Accounts Statistics – Sources and Methods, April 1989, Central Statistical Organisation (CSO), Government of India.

National Accounts Statistics, 1998, Central Statistical Organisation (CSO), Government of India

United Nations, 1995. *National Accounts Statistics – Main Aggregates and Detailed Tables*. Part II and I, New York.

13.10 ANSWERS OR HINTS TO CHECK YOUR PROGRESS EXERCISES

Check Your Progress 1

1) See section 13.2

2) See section 13.2

Check Your Progress 2

1) See section 13.3

2) See section 13.3

3) See section 13.3

Check Your Progress 3

1) See section 13.4

2) See section 13.4

3) See section 13.4

Check Your Progress 4

1) See section 13.5

2) See section 13.6

3) See section 13.5

4) See section 13.6

UNIT 14 SYSTEM OF NATIONAL INCOME ACCOUNTS: THE BASIC STRUCTURE

Structure

14. 0 OBJECTIVES

After going through the unit, you shall be able to:

- describe the emergence of the system of national income accounts;
- explain system of national income accounts and its relationship with circular flow of income and double entry book keeping system;
- discuss the classification of economic activities and transactors;
- list the types of national income accounts; and
- discuss the interrelationship among the different types of accounts.

14.1 INTRODUCTION

The system of national accounts (SNA) provides a comprehensive and detailed framework for the systematic and integrated arrangement of transaction flows in an economy. The different transactions may relate to macro-economic aggregates, such as national income, output, investment, consumption, saving etc. The multitude of transactions actual or imputed are recorded in different groups or classes. These are classified in terms of kind of activity (known as "kind-of-activity" classification) and as institutional sectors.

The system of national income accounts brings together an articulated and coherent system data relating to national income and other related macro economic variables. This includes data on production and goods and services and outlay and capital and finance accounts for institutional sectors and sub-sectors.

Data as classified and integrated into different national income accounts and the arrangement of transactions are regarded important for understanding how an economic system functions. This helps in facilitating interrelationships and interactions not only among the variables but also among the different sectors of the economy.

These relationships and interactions can be better understood if accounts are clearly presented, carefully classed and analytically consolidated. In this context, one has to appreciate the concept of circular flow of income and, the principle of 'double entry system of accounts'. Before these issues are discussed, it may be worthwhile to briefly focus on the evolution of the system of national income accounting.

14.2 HISTORICAL BACKGROUND OF NATIONAL INCOME ACCOUNTING

The work on system of national income accounts actually began only after the Second World War. The measurement of national income in the perspective of international comparisons was taken as the goal of national income accounts. Therefore, in 1947, a serious effort was made. A sub-committee on National Income Statistics of the League of Nations recommended a set of nine tables to present national income statistics to be followed by nations.

In 1953, Statistical Commission of the United Nations published another report- "A system of National Accounts and Supporting Tables". This report, for the first time, presented a set of six accounts based on an underlying structure of production, appropriation, capital reconciliation and external transactions for four basic sectors of the economy of a country.

There was an unprecedented amount of work done in the field of national income statistics in the next fifteen years. A revised system of National Accounts in the form of United Nations report entitled "A System of National Accounts (SNA)" in 1968 was presented. This report provided a comprehensive framework for systematic and integrated recording of the transaction flows in an economy. The 1968 'SNA' presented a set of 20 accounts broken of down into three classes: (1) consolidated accounts of the Nation; (2) accounts related to production, consumption, expenditure and capital formation accounts; and (3) income and outlay and capital finance accounts.

This system was again revised in 1993. In that year a very detailed and comprehensive report on national accounting system was published on the System of the National Accounts (SNA). All the major international institutions engaged in the field of economic statistics participated in the preparation of these accounts. The new system of accounts was likely to be fully implemented by the year 1999. Some merits of the revised system are discussed below:

First, this report provided additional information at many levels, which was found useful in better understanding of the economy.

Second, it gives information for economy's productive assets and the wealth of its inhabitants at particular points of time.

Third, it includes external accounts displaying the links between domestic economy and the rest of the world.

Fourth, it provided more harmonised system of accounts, which is related to other statistical systems (like balance of payment statistics, input-output statistics, national balance sheets; employment statistics, population statistics etc.

Fifth, the revised accounting system on the whole gives many new analytical and policy concerns of countries and international organisations.

Sixth, this system introduces certain amount of flexibility into the old system. For instance, it permits more flexible use of classifications of transactors, transactions and assets with the availability of data and other country specific circumstances while retaining the central conceptual framework.

It is important to note that the new accounting system (1993) requires massive data collection and thorough revisions and refinements in the existing flows of statistical information.

Check Your Progress 1

Note: i) Space is given below each question for your answer.

ii) Check your answer(s) with those given at the end of the unit.

1) What is the meaning of the system of national accounts? Explain briefly.

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2) Discuss the emergence of system of national income accounts.

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3) Describe the merits of the revised system of national accounts.

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14.3 SYSTEM OF NATIONAL INCOME ACCOUNTS FOR A SIMPLE ECONOMY

The basic rationale behind national income accounting can perhaps best be made clear by taking a simple economy. Such an economy may be defined as an economic system, in which, there is no government, no foreign trade and no saving and investment.

Given a simple economy as described above, there would be two broad classes of transactions (purchase by producers of factor services from consumers and, expenditures undertaken by consumers on goods produced by producers), and two broad categories of transactors (producers and consumers). Producers will involve the hiring of factors of production and the supply of output. The second class of transactions involves consumers, who supply services, which are known as 'factor services'. They also will be buying output with the factor incomes received against rendering the factor services to producers. These transactions can be shown in the simple accounts in the following manner:

Production account	
Payments(Rs.)	Receipts(Rs.)
Wages and the like = 100	Sales to consumers = 100

Consumption Account	
Payments	Receipts
Consump. expenditures = 100	Wages and the like = 100

The above system of transactions and the interaction between producers and consumers can be seen as an important production process. This has the following features:

1) Producers are the main key players to the production process. They organise production and coordinate different inputs required for production.

2) The production of final goods and services is a continuous process. And it takes place in the economy all the time.

3) The production process is such that shows exchange as well as interdependence between producers and consumers. Producers require the services of other factors of production. These are known as "factor services". The Supply of these factor services is used to produce goods and services. The flow of factor services and that of goods and services are known as 'real flows'.

   The suppliers of factor services have to be compensated. The compensation may take the forms of wages and salaries, rent, interest, dividends and retained profit of the producers. These represent "income flows".

4) Income flows as generated in the above step (i.e., step 3) are used for the purchase of final goods and services by consumers or purchase of capital goods by the producers.

14.4 NATIONAL INCOME ACCOUNTS AND THEIR RELATIONSHIP WITH CIRCULAR FLOW OF INCOME

As explained in the above section, the process of generating real and final flows keeps on going continuously. It not only gets closely related to the system of national income accounting, but it becomes the core of national income accounting system. However, the emphasis remains more on real flows.

In the production process of generating two main flows – final product and final income, output or produce is equal to income. Total output is considered as the total supply of goods and services. From the value of total supply of goods and services, if one deducts the value all intermediate goods used by all the production units, one is left with the total value of product. Thus, product is equal to income and, the same is equal to total value of output minus total value of intermediate consumption.

14.5 SYSTEM OF NATIONAL INCOME ACCOUNTS AND THE NATURE OF 'DOUBLE ENTRY ACCOUNTING' SYSTEM

National income accounts and double entry accounting systems are closely related to each other. This can better be understood through the following steps:

i) Any transaction requires two transactors, the one who pays and the one who receives. Two transactors may turn out to be the same. For instance, imputed rental value used in the case of a self-occupied home represents the same transactor.

ii) Each transactor has to have an earmarked account to record his receipts on credit side and his payments on the debit side.

iii) Credit item for one becomes debit item for the other. It is because receipt of one transactor is a payment by the other.

iv) Both aspects, thus, of each transaction appear simultaneously in double entry accounting system, once as a receipt as one account and again as a payment on another account.

v) The double entry accounting system is not exactly receipts or payments. It is because the transactions recorded on credit and debit sides are the right to receive and the liability to pay rather than being actual receipts and payments.

vi) All the accounts in double entry system are made to balance. That is, there remains equality between two sides of every account. The discrepancy between credits and debit sides has to be resolved the same way an individual preserves balance between his incomes and expenditure. When an individual receives more than what he spends, he will have saved. By adding the savings of this account to the debit side, two sides are balanced. Similarly, if there is an excess of debit over credits, an item

representing borrowing could be added to the credit side in order to maintain equality of the two sides of an account.

Check Your Progress 2

1) Define the production process. Bring out its essential features.

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2) What is circular flow of income? Discuss its relationship with the system of accounts?

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3) Write a note on double entry accounting system.

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14.6 CLASSIFICATION OF ECONOMIC TRANSACTORS AND TRANSACTIONS AND THEIR IMPORTANCE

There are three basic economic activities, which are closely related to each other. These are production, consumption and capital formation. Production activity relates to the creation of income by production units, and also to the distribution of income among factor owners. Consumption activity deals with disposal of income on consumption and saving. Accumulation activity involves capital formation, borrowing, lending etc. Thus, the main economic activities undertaken by transactors can be categorized into the following five activities: (i) creation of income; (ii) distribution of income; (iii) disposal of income; (iv) capital formation and (v) borrowing and lending.

Broadly speaking, there are two groups of transactors, domestic and foreign, who undertake different economic activities. Domestic transactors include consumers, producers and the government. They also engage in transactions with foreign transactors and all such foreign transactors are treated as a separate sector. It is called 'rest of the world' sector.

System of Accounts and their Construction

Accounts can be constructed in many ways. One way is to construct an account on the basis of major forms of economic activity. This is known as 'functional classification' of accounts, since they are based on a classification of transactions according to function.

The other way of constructing the accounts is through 'sectoring' the economy. Here, the sectors could usefully refer to different geographic regions of a country, separate branches of industry, or the various institutional divisions of our society. Since sectoring on functional lines does not divide up economic activity into accounts identifiable with particular individuals or agencies, both the sectoral and functional aspects are kept in mind while constructing the accounts. This is clear from the following example:

Let us take the example of a worker or a farmer. A worker ordinarily engages in a multiplicity of transactions. He works for wages or profits, buys consumer goods, saves, invests, and so forth. Thus, the transactions of a worker fall in different accounts. But it is a very good idea, if people and organisations responsible for the transactions are divided into sectors.

It is in this background, accounts have to be made more meaningful. And this can be done if accounts are constructed in such a manner that gives both functional as well as institutional details.

14.7 DIFFERENT TYPES OF ECONOMIC ACCOUNTS

Generally speaking, there are three important classes of accounts that can be set up for any transaction. These are the following:

1) Production account: It is also known as operating account. It deals with the receipts and payments associated with the productive activities of a transactor.
2) Appropriation account: It indicates all the current receipts and payments including those, which may not even, arise out of productive activities. Transfer payments is one such example.
3) Capital accounts: This account shows transactions of a capital nature that affect transactor's balance sheet of assets and liabilities.

It may be mentioned that classification of the economy into different sectors and the classification of accounts into different kinds of accounts are two different questions. In this chapter, we shall show that only one account for each of the sectors of the economy. However, as shown below, it is not essential to use the same kind of the account for each sector. For instance, production account is used for the productive sector, whereas appropriation account is used both for household and government sector. Rest of the world sector, which uses all embracing consolidated account showing capital and current transactions. Similarly, capital account corresponds to the economy as a whole and not to any sector.

Thus, all the transactions of a sector get included in one or more of these groups of activities. These transactions can be of current and capital nature. Accounts relating to creation, distribution and disposal of income are known as current transactions, whereas those transactions relating to capital formation, borrowing and lending are termed as capital transactions.

In all, there is a "five-account system" that provide the "nucleus of an interlocking social accounting framework that shows how the different major categories of final output enter into the transactions of the rest of the economy.

These accounts are:

1) Production account;
2) Capital account;
3) Household account;
4) Government account;
5) Rest of the world account.

Format of the Accounts

The format of the above mentioned is discussed below:

1. Production Account

Debit	**Credit**
1 National income 1.1 Wages 1.2 Distributed profits 1.3 Undistributed profits 1.4 Direct taxes paid by firms 2 Depreciation 3 Net indirect taxes ---------- Gross National Product at market prices	1 Private consumption 2 Public consumption 3 Gross domestic capital formation 4 Exports 5 Minus Imports ---------- Expenditure on gross national product at market prices

2. Capital Account

Debits	**Credits**
1 Gross domestic capital formation 2 Net investment overseas Total investment	1 Savings by households 2 Savings by government 3 Savings by firms Total savings

3. Household Account (or income and outlay account)

Debits	**Credits**
1 Private consumption 2 Direct taxes on households 3 Savings by households Expenditure and savings of households	1 Wages and distributed profits 2 Transfer payments from government income of households

4. Government Account	
Debits	**Credits**
1 Public consumption 2 Transfer payments 3 Savings by government Total current expenditure and savings of government	1 Net indirect taxes 2 Direct taxes by firms 3 Direct taxes by households Total current revenue of government

5. Rest of the World Account	
Debits	**Credits**
Exports less imports	Net investment abroad

The "five-account system" discussed above shows that the social accounting framework is a "nucleus of an interlocking system". It shows the following features:

First, all the transactions entering into one account have their origin somewhere else. Production account on its credit side records private consumption, which is debited to household account; Public consumption, which is debited to government account; gross domestic capital formation which is debited to capital account; and exports less imports is debited into rest of world account.

Second, the production account simply shows the value of what the productive sector finally produces and what are the claims on this product. One can also find out the relationship between national income (or net national product at factor cost)and GNP at market prices.

Third, the capital account shows that savings and investments are always equal. In other words, as described by Beckerman, it would imply ". . . all output that was non-consumption must be equal to that part of income that was not spent on consumption".

Fourth, household account is a consolidated appropriation account which shows all its current receipts and payments. Transfer payments in the case of household sector from the government appear on the credit side. These include old-age pensions, grants to students, sickness or unemployment benefits, and the like.

Fifth, the government account like the account for the household sector is a consolidated appropriation account. It shows all the current receipts and payments.

Sixth, the rest of the world account is little confusing. There are two explanations:

i) Rest of the world account is not the account of a sector as is the case with household account or government account or capital account. It is simply a consolidated account and refers to all the other economies taken together.

ii) There can be many sub-categories of transaction, which are ignored. One such example is of current transfers, both between persons and governments, which enter the balance of payments but do not necessarily enter the production account. The nature of many entries would be the same on both sides, though the amount shown will be quite different.

In such a situation, an excess of exports over imports is one way by which the given country may add to its stock of wealth, namely by carrying out net investment overseas. Conversely, it is by borrowing from the given country the rest of the world is able to buy more from the given country than it sells. This implies that if there is trade deficit on foreign trade on the debit side of the rest of the world, it must show on its credit side the corresponding borrowing from the given country. This would mean that the rest of the world would show, on the credit side, the net investment abroad by the given country.

14.8 INTEGRATING THE ACCOUNTS

All the above mentioned accounts can be integrated together with the help of a set of simple equations. This is shown as below:

i) Production account:

$$Y_h + T_f + T_i + S_f = C_h + C_g + GDCF + X - M$$

ii) Capital account:

$$GDCF + (X - M) = S_h + S_g + S_f$$

iii) Household account:

$$C_h + S_h + T_h = Y_h + TP_h$$

iv) Government account:

$$C_g + TP_g + S_g = T_i + T_f + T_h$$

v) Rest of world account:

$$X - M = (X - M)$$

The different symbols are defined as under:

Y_h = Wages and distributed profits

T_f = Direct taxes paid by firms

T_i = Net indirect taxes less subsidies

T_h = Direct taxes paid by households

C_h = Private consumption

C_g = Public consumption

TP_g = Transfer payments from government

S_g = Savings by government

S_f = Depreciation and undistributed profits

S_h = Savings by households

GDCF = Gross domestic capital formation

X = Exports

M = Imports

Check Your Progress 3

1) What are the different accounts? Bring out the different transactions entered in different types of accounts.

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2) Name the transactions, which are found common in production and capital accounts, and also in household and government accounts.

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3) What is the value of GNP if household income(wages and distributed profits) = Rs.800, direct taxes paid by firms = 120 and Firm's saving (depreciation and undistributed profits) = Rs.80.

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14.9 LET US SUM UP

National income accounting is a systematic way of arranging the multitude of transactions. This arrangement helps in understanding how an economic system functions. However, this requires that accounts are clearly presented, carefully classed and analytically consolidated.

The system of national income accounts can be better understood if one is familiar with concepts like the circular flow of income, the 'double entry system of accounts' and, the issues relating to the presentation, classification and consolidation of accounts.

The historical background of National Income accounts shows that the work on national income accounts actually began only after the Second World War

particularly in 1947. Since then, there was an unprecedented amount of work done in the field of national income statistics. A revised system of National Accounts in the form of United Nations report entitled "A System of National Accounts (SNA)" in 1968 was presented. This system continued to dominate till 1993. In that year a very detailed and comprehensive report on national accounting system was published on the System of the National Accounts (SNA). This continues to be in use since then.

Broadly speaking, there are three important classes of accounts that can be set up for any transaction. These are Production account, capital account and appropriation account.

It, however, is not essential to use the same kind of the account for each sector. For instance, production account is used for the productive sector, whereas appropriation account is used both for household and government sector. Rest of the world sector, which uses all embracing consolidated account showing capital and current transactions. Similarly, capital account corresponds to the economy as a whole and not to any sector.

In all, there is a "five-account system" that provide the "nucleus of an interlocking social accounting framework that shows how the different major categories of final output enter into the transactions of the rest of the economy. These accounts are:(1) Production account;(2) Capital account; (3) Household account; (4) Government account; and (5) Rest of the world account. These accounts are inter linked to each other as the same transaction appears in different accounts. This is true for gross domestic capital formation, which appears both in production account as well as capital account. Similarly transfer payments and direct taxes on households appear in household account as well as in government account. There are many other examples.

14.10 KEY WORDS

Account: This represents variety of transactions that take place in the economy in different groups, that are considered important.

Appropriation account: It indicates all the current receipts and payments including those even which may not arise out of productive activities. Transfer payments is one such example.

Capital accounts: This account shows transactions of capital nature that affect transactor's balance sheet of assets and liabilities.

Circular flow of income: This refers to the flow of expenditures on output and factor services passing between domestic firms and domestic households simultaneously taking place in the production process.

Double entry accounting: It refers to a system in which each transaction appears, once as a receipt in one account and again as a payment in another account.

Government account: It is defined as a consolidated appropriation account, which shows all current receipts and payments to the government sector.

Gross fixed capital formation: This refers to all the outlays undertaken on fixed assets (like construction, plant machinery and equipment) by the private and public sectors.

Household account: It deals with the receipts of incomes by private individuals and their expenditures of these incomes on private consumption.

National income accounting: It is simply a systematic way of classifying the different economic activities that take place in the economy in different classes.

Production account: It is also known as operating account. It deals with the receipts and payments associated with the productive activities of a transactor.

Rest of the world account: It is simply a consolidated account for all the other economies taken together, with which the given country trades.

Transaction: It generally refers to an economic activity during a particular period of time.

Transactors: This term refers to all those who carry out the different transactions.

14.11 SOME USEFUL BOOKS

Beckerman, Wilfred., (1980), *An Introduction to National Income Analysis*, Wiedenfeld and Nicolson: London (Chapters 5)

Dornbusch, Rudiger, Stanley Fisher and Richard Startz, (1999), *Macro Economics*. McGraw- Hill International Editions,: Boston. Chapter 1)

Hicks, J.R., M.Mukherjee, and S.K.Ghosh, 1984, *The Framework of the Indian Economy – An Introduction to Economics*, OUP: Delhi.

National Accounts Statistics – Sources and Methods, April 1989, Central Statistical Organisation (CSO), Government of India.

Central Statistical Organisation (CSO) 1998, *National Accounts Statistics.*

Samuelson, P.A. and W.A. Northaus (1998), *Economics*, McGraw- Hill Book Company: New York.

14.12 ANSWERS OR HINTS TO CHECK YOUR PROGRESS EXERCISES

Check Your Progress 1

1) See section 14.2

2) See section 14.2

3) See section 14.2

Check Your Progress 2

1) See section 14.3

2) See section 14.4

3) See section 14.5

Check Your Progress 3

1) See section 14.7

2) See section 14.7

3) Rs. 1000

UNIT 15 CONSOLIDATED ACCOUNTS OF A NATION: THE BASIC STRUCTURE

Structure

15.0 OBJECTIVES

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

- discuss the meaning and importance of consolidated accounts of the nation;
- list the types of consolidated accounts and describe their presentation;
- describe disaggregation of consolidated accounts; and
- present an overview of the consolidated accounts of India.

15.1 INTRODUCTION

The consolidation of accounts, in simple words, would mean integrating and combining the accounts of all the sectors of the economy. Since the focus of these accounts is larger, the consolidated accounts of a nation give a summarized view of the economic transactions, which take place in an economy. More specifically, they depict an aggregated picture of the income, product, expenditures and other such macro economic variables.

The analysis of consolidated accounts, therefore, would give a comprehensive picture of the macro-economic behaviour of the country. In the process of this analysis, one gets a fair idea about the economic conditions and the strategic inter-connections between various facets of the economy.

15.2 TYPES OF CONSOLIDATED ACCOUNTS OF THE NATION

There are four consolidated accounts of the nation. These are as under:

Account 1: Gross Domestic Product and Expenditure Account

Account 3: National Disposable Income and its Appropriation

Account 5: Capital Finance Account

Account 6: External Transactions Accounts

In consolidated accounts, the sector accounts are put together. For instance, there are five different accounts for each sector (as per SNA system), taking the nation as a whole. These sector accounts are consolidated into – Production, Consumption Expenditure and the Capital Formation accounts. These three are further aggregated and consolidated into a single account named as Gross Domestic Product and Expenditure Account. Income and Outlay accounts of sectors have been consolidated into National Disposable Income and its Appropriation Account. Capital Finance Accounts of sectors are consolidated into Capital Finance Accounts of the nation. External transaction account records external transactions of the nation. This account serves two purposes:

First, it records all the economic activities dealing with foreign transactions of an economy. Second, it makes the national accounting system completely compatible and articulated as it fulfills the requirement of double entry book keeping. In this way, all transactions, domestic or foreign are recorded twice in the system.

15.3 PRESENTATION OF CONSOLIDATED ACCOUNT OF THE NATION

The accounts, in general, can be presented in many ways. One important way is the conventional system, in which debits are taken on one side and credits on the other. The second important way is presentation of accounts through equations showing different types of accounts. The third different method is with the help of a flow diagram. It is also known as diagrammatic representation. This method is often considered economical as one arrow can be used to represent credit and debit at the same time.

The fourth method is known as “matrix” approach. In this method, all the transactions taking place between different sectors or accounts are shown in a set of rows and columns. Rows represent credits and columns represent debit. Since, as it has already been shown, a credit by one sector is a debit for another, any transaction will appear in one tranactor’s row and in another transactor’ column. Thus, a simple matrix can be constructed to represent the different transactions taking place in an economy.

The main advantage of this presentation is that the two aspects of transactions are recorded by a single entry and can be observed more quickly. It is space saving and more analytical.

It may be mentioned that matrix approach can further be extended to construct a similar matrix for inter-industry flows. That implies, transactions, which

take place between different industries can also be shown through rows and columns. Such a matrix is termed as an input-output table.

In this chapter, we stick to the conventional approach of representing the accounts as other approaches are beyond the scope of this chapter.

15.4 THE BASIC FORMAT OF CONSOLIDATED ACCOUNTS

The format of consolidated accounts of the nation is discussed below in Table 1.

Table 1: Consolidated Accounts of the Nation

Debit or Outgoings(Rs.)		Credit or Incomings(Rs.)	
1 Compens of employees(=15)	596.	6.Government final consumption expenditure (=12)	165
2.Operating Surplus (=17)	216	7.Private final consumption expenditure (=13)	659
3. Conspn of fixed capital(=27)	74	8.Increase in stocks(=22)	23
4. Indirect taxes (=19)	137	9.Gross fixed capital formation (=23)	161
5. Less Subsidies (=20)	23	10.Exports of goods and services (=32)	196
		11.Less imports of goods and services (=36)	204
Gross domestic product at market price	1000	Expenditure on gross domestic product at market price	1000

Account 3. National Disposable Income and Its Appropriation

Outgoings		Incomings	
12.Govt final consp exp (=6)	165	15. Compen of employees from domestic activities (=1)	596
13. Pvt final consp exp (=7)	659	16. Compensation of employees from ROW (=33-37)	0
14. Saving (=26)	106	17. Operating surplus (=2)	216
		18. Property & entrepreneurial income from ROW, net (=34-38)	19
		19. Indirect taxes (=4)	137
		20. Less Subsidies (=5)	23
		21. Other current transfers from ROW, net (=35-39)	-15
Appropriation of disposable income	930	Disposable Income	930

Account 5. Capital Finance

Outgoings		Incomings	
22. Increase in Stocks (=8)	23	26. Savings (=14)	106
23. Gross fixed cap forma (=9)	161	27. Consp of fixed capital (=3)	74
24. Purchases of intangible assets from ROW, net (=44)		28. Capital transfers from ROW, net (=42)	0
25. Net lending to ROW (=30)	-4		
Gross accumulation	180	Financing gross accumulation	180
29. Net acquisition of financial assets (=45)	67	30. Net lending to the rest of the world (=25)	-4
		31. Net incurrence of liabilities (=43)	71
Net acquisition of financial assets	67	Net incurrence of liabilities and net lending to the rest of the world	67

Account 6. External Transactions

Payable		Receivable	
Current transactions			
32. Exports of goods and services (=10)	196	36. Imports of goods and services (=11)	204
33. Compen of employees from ROW (=16+37)	8	37. Compen of employees to ROW (=33-16)	8
34. Property & entrepreneurial income from ROW (=18+38)	39	38. Property & entrepreneurial income to ROW (=34-18)	20
35. Other current transfers from the rest of the world (=21+39)	15	39. Other current transfers to ROW (=35-21)	30
		40. Surplus of the nation on current transactions (=41)	- 4
Current receipts	258	Disposable of current receipts	258
Capital Transactions			
41. Surplus of the nation on current transactions (=40)	-4	44. Purchases of intangible assets from ROW, Net (=24)	0
42. Cap trf from ROW,net (=28)	0	45. Net acquisition of foreign financial liabilities (=29)	67
43. Net incurrence of foreign liabilities (=31)	71		
Receipts	67	Disbursements	67

In the above format showing consolidated accounts, each transaction in the beginning has been assigned a serial number. The same transaction has also been assigned a figure in the bracket at the end. This indicates that the given entry is repeated on the reverse side in some other account. For example, "1(=15)" indicates that the entry 1 in account 1 has its reverse entry with serial number 15, which is found in Account 3.

It may be also be noticed that in account 6, some entries relating to the 'Rest of the World', like 16, 18, and 21 have been entered on net basis in Account 3. However, their reverse entries are entered on gross basis in Account 6. For example, in Account 3, entry 16, i.e. compensation of employees from the rest of the world is taken on a net basis (i.e. receipt less payment). Its reverse entry in Account 6 is in two parts - entry 33 as a receipt and entry 37 as a payment. Entry 14 i.e. saving in Account 3 is 'net saving' not gross saving. Net saving plus consumption of fixed capital adds up to gross saving.

A careful review of the above mentioned accounts indicate the following:

1) **Gross Domestic Product and Expenditure Account** is based on "domestic" concept of product and its composition. First three items represent gross payments made for the purchases of factor services. This amounts to GDP at factor cost. By considering item 4 and 5, we get GDP at market prices.

   On the credit side, item 6, i.e., government final consumption expenditure is estimated as the sum total of government expenditure on intermediate consumption, compensation of employees, consumption of fixed capital, and indirect taxes minus commodity and non commodity sales. It is known as services produced by the producers of government services for own use. Item 7 is final consumption expenditure of resident households on the domestic market plus direct purchases abroad by resident households plus services produced by producers of non-profit services for own use. The next two items (8 and 9), i.e., increase in stocks and gross fixed capital formation represent gross domestic capital formation.

   This account basically shows the allocation of factor incomes (items 1-5) on the one hand, and demand for final products generated by the domestic sources [which includes consumers (Items 6+7), and investors (Items 8+9)] and foreign source (Item 10 and 11) on the other.

   This account holds a special significance as it helps in estimating GDP at market prices through expenditure as well as income methods. The credit side gives final expenditure method, and the debit side gives income-distribution method to estimate GDP at market prices.

2) **National Disposable Income and its Appropriation Account**: This gives national aggregates, such as, sources of net national disposable income and its allocation between consumption and saving. On the credit side, items 15 and 17 put together represent NDP at factor cost. This together with item 16 and 18 would give the value of net national income at factor cost. The sum of items 15 to 20 equals NNP at market prices. If all the items 15 to 21 are taken, one would get Net National Disposable income. This includes NNP at market prices and Net current transfers from the rest of the world.

   On the debit side, Items 12 and 13 record consumption expenditure of residents. Item 14 records 'saving'. It is 'net saving' as distinguished from

gross saving which equals 'net saving + provision for depreciation'. Adding all together, one will get Net National Disposable Income.

3) **Capital Finance Account**: This account depicts the sources of gross domestic capital formation (also known as domestic formation of gross physical assets) and the forms in which the capital accumulation takes place in the economy.

   The account, as shown above, has two parts. The account shows the real flows above the dotted lines and financial flows below the dotted line. The financial flows constitute both the financial assets and liabilities, including transactions in gold, currency, deposits, bills, bonds, equities, loans, trade credits etc.

   On the debit side of this account, Item 22 and 23 taken together shows gross domestic capital formation. Adding items 24 and 25, i.e., investment in intangible assets and formation of financial assets by resident economic agents respectively, one gets capital accumulation by resident economic agents. Intangible assets are those assets, which are not matched by liabilities. Patents, copyrights and trademarks, leases in respect of land and exclusive rights to exploit mineral deposits etc. are some good examples. The debit side is basically the "use" side of the capital accumulation.

   The credit side of the account portrays "sources" of financing capital formation. It enlists items 26 to 31. Items 26 and 27 together represent gross savings out of current income. The other source is the capital transfers from the rest of the world.

4) **External Transactions Accounts:** It explains all the external transactions of resident economic agents. While recording transactions with the rest of the world, all the transactions of the first three consolidated accounts are considered. It is because exports by a country to the rest of world are incomings of that country, but it is an outgoing item for the rest of the world. The same way, imports are outgoings of the given country, but they are incomings for the rest of world. Thus, each external transaction indicated in the previous accounts has got its counterpart in this account. The system is fully articulated and balanced.

   This account has two parts current and capital transactions. The different entries recorded in both these accounts show that the reverse entries of external transactions of the first three consolidated accounts. The entries showing different transactions have already been discussed on the above pages.

Check Your Progress 1

1) What are the different types of consolidated accounts?

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2) How are the consolidated accounts of a nation presented?

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3) What is Capital Finance Account?

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15.5 DISAGGREGATION OF CONSOLIDATED ACCOUNTS OF THE NATION

The macro level transactions discussed in the consolidated accounts can further be disaggregated as per the classification of transactions. Here, two points are worth noting. One, the classification of different transactions has to be done on some basis, may be, in the form of institutional sectors. These sectors may be named as households, private non-profit institutions, corporate and quasi-corporate enterprises, financial institutions, general government and non-financial enterprises. Two, there will be an overlapping between the different transactions.

Disaggregation, thus, requires a simultaneous disaggregation of different related accounts. For instance, if gross domestic product account has to be disaggregated, it would require an analysis of the production accounts of the producers' accounts. These would include, industries, producers' of government services and private non-profit services to households, and domestic services to households. Simultaneously, there is need to undertake an analysis of income and outlay and capital finance accounts of various institutional sectors discussed above. The detailed study of disaggregated consolidated accounts is beyond the scope of this chapter.

15.6 CONSOLIDATED ACCOUNTS OF INDIA

It has already been brought out on the above pages that consolidated accounts are required to a comprehensive picture of the macro-economic behaviour of the country and also for sound policy making purposes.

In the case of India, consolidated accounts are prepared by Central Statistical Organisation, Ministry of Planning and Programme implementation, Government of India. The formats in which these accounts are presented are given below to acquaint the student with the Indian practice. The figures are hypothetical

Account 1: Gross Domestic Product and Expenditure (approximately rounded) (at current prices) [2003-04; Rs. '000'crores]		
1.1	Net domestic product at factor cost	2267
1.2	Consumption of fixed capital	254
1.3	Indirect taxes	323
1.4	Less subsidies	83
1.5	**Gross domestic product**	**2761**
1.6	Government final consumption expenditure	312
1.7	Private final consumption expenditure	1762
1.8	Gross fixed capital formation	627
1.9	Changes in stocks	8
1.10	Exports of goods and services	408
1.11	Less imports of goods and services	444
1.12	Discrepancies	86
1.13	**Expenditure on gross domestic product**	**2761**

Account 3: National Disposable Income and its Appropriation (at current prices)

[2003-04; Rs. '000 crores]

3.1	Govt final consumption expenditure	312
3.2	Private final consumption expenditure	1762
3.3	Saving	523
3.4	Statistical discrepancy	0.5
3.5	**Appropriation of national disposable income**	**2598**
3.6	Net domestic product at factor cost	2267
3.7	Compensation of employees from the rest of world	(-)3
3.8	Property & entrepreneurial income from the rest of world, net	(-)11
3.9	Indirect taxes	323
3.10	Less subsidies	83
3.11	Other current transfers from the rest of world	105
3.12	Disposable income	**2598**

Account 5: Capital Finance (at current prices)

[2003-04; Rs. '000'crores]

5.1	Gross domestic capital formation	304
5.1.1	Gross domestic fixed capital formation	272
5.1.2	Change in stocks	33
5.1.3	Errors and omissions	(-)1
5.2	Purchase of intangible assets n.e.c. from rest of the world	(-)20
5.3	Net lending to the rest of world	**284**
5.4	**Gross accumulation**	
		171
5.5	Domestic saving	112
5.6	Consumption of fixed capital	1
5.7	Capital transfers from rest of world, net	**284**
5.8	**Finance of gross accumulation**	

Account 6: External Transactions (approximately rounded) (at current prices)

[2003-04; Rs. '000 crores

Current transactions		
6.1	Exports of goods andservices	408
6.2	Compensation of employees from the rest of world	0.7
6.3	Property & entrepreneurial income from the rest of world	15
6.4	Other current transfers from the rest of world	106
6.5	Adjustment of merchandise exports to the change of ownership basis	3
6.6	**Current receipts**	**533**
6.7	Imports of goods and services	433
6.8	Compensation of employees from the rest of world	4
6.9	Property & entrepreneurial income from the rest of world	26
6.10	Other current transfers from the rest of world	1.6
6.11	Adjustment of merchandise imports to the change of ownership basis	9
6.12	Surplus of the nation on current transactions	50
6.13	**Disposal of current receipts**	**533**
Capital transactions		
6.14	Surplus of the nation on current transactions	50
6.15	Capital transfers from the rest of world	2.6
6.16	Net incurrence of foreign liabilities	84
6.17	**Receipts**	**136**
6.18	Purchase of intangible assets	
6.19	Net acquisition of foreign financial assets	136
6.20	**Disbursements**	**136**

Check Your Progress 2

1) What is the meaning of consolidated accounts of the nation? Explain with the help of Indian case.

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2) How are the consolidated accounts disaggregated?

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15.7 LET US SUM UP

The consolidation of accounts refers to combining the accounts of all the sectors of the economy. They depict an aggregated picture of the income, product, expenditures and other such macro economic.

There are four consolidated accounts of the nation. These are as under: Account 1: Gross Domestic Product and Expenditure Account; Account 3: National Disposable Income and its Appropriation; Account 5: Capital Finance Account; Account 6: External Transactions Accounts.

The accounts, in general, can be presented in many ways. The most important methods used for presenting the accounts are known as the conventional system, the equation method, the diagrammatic method, and the matrix approach. However, the most usual approach towards presenting the accounts is showing the accounts in the balance statement. India follows almost the established international procedures in presenting its consolidated accounts.

15.8 KEY WORDS

Capital Finance Account: This account depicts the sources of gross domestic capital formation (also known as domestic formation of gross physical assets) and the forms in which the capital accumulation takes place in the economy.

Consolidated accounts of the nation: These accounts give an integrated and combined view of all the sectors of the economy.

External Transactions Accounts: It explains all the external transactions of resident economic agents. While recording transactions with the rest of the world, all the transactions of the first three consolidated accounts are considered in this account.

Gross Domestic Product and Expenditure Account: This concept is based on "domestic" concept of product and its composition. This account basically shows the allocation of factor incomes on the one hand, and demand for final products generated by the domestic sources like consumers and investors and, foreign source on the other. This account helps in estimating GDP at market prices through expenditure as well as income methods

Matrix: It refers to a square array of ordered set of numbers $\{a_1, a_2, \ldots, a_n\}$ from a field F.

National Disposable Income and its Appropriation Account: This account relates to the sources of net national disposable income and its allocation between consumption and saving.

15.9 SOME USEFUL BOOKS

Beckerman, Wilfred., (1980), *An Introduction to National Income Analysis*, Wiedenfeld and Nicolson: London (Chapters 5)

Hicks, J.R., M.Mukherjee, and S.K.Ghosh, (1984), *The Framework of the Indian Economy- An Introduction to Economics*, OUP, Delhi.

Lal. Ram N, 1985. *The System of National Accounts and Material Balances*, Allied Publishers Pvt Ltd, Delhi.

Central Statistical Organisation (CSO), *National Accounts Statistics*, (2005).

Samuelson, P.A. and W.A. Northaus, (1998), *Economics*, McGraw- Hill Book Company: New York. (Chapter 6)

United Nations, 1995. *National Accounts Statistics – Main Aggregates and Detailed Tables*. Part II and I.

15.10 ANSWERS OR HINTS TO CHECK YOUR PROGRESS EXERCISES

Check Your Progress 1

1) See section 15.2

2) See section 15.3

3) See section 15.4

Check Your Progress 2

1) See section 15.6

2) See section 15.5

UNIT 16 METHODOLOGY OF NATIONAL INCOME STATISTICS

Structure

16.0 OBJECTIVES

After going through this Unit, you shall be able to:

- list the three sectors of the economy;

- describe how national income estimates are computed in various sectors of the economy;
- discuss the consumption of fixed capital and net factor income flows from abroad.

16.1 INTRODUCTION

National income may be defined as the sum total of factor incomes accruing to the residents of a country during a year. Alternatively it can also be defined as the value of final products produced within the economic territory of the country reduced by the amount of net on direct, taxes and consumption of fixed capital and increased by net factor income received from abroad. For the purpose of estimation of national income the economy is divided into a number of sector. GDP of a country is equal to the sum of gross value added from all sectors of economy. GDP can be estimated by any one of the following three methods:

i) production approach,

ii) income approach, and

iii) expenditure approach

In this unit, we primarily discuss the case of India and use it as illustration to highlight the methods followed in preparing national income statistics.

Central Statistical Organization (CSO) prepares the annual estimates of National Income for India and publishes them in National Accounts Statistics. This publication also gives the estimates of consumption expenditure, saving, capital formation and capital stock. Also given in the publication are the accounts of the public sector and the consolidated accounts of the nation. For estimation of GDP the CSO divides the whole economy into Nine broad sectors.

Different approaches are followed for different sectors of the economy. For first three sectors production approach is followed. In this approach, the gross value added is obtained by subtracting the sum total of the values of intermediate consumption inputs consumed by the sector from the total value of output of all the items contained in the sector. Strictly speaking, the estimates of value of output of all the items contained in the sector. Strictly speaking, the estimates of value of output and value of intermediate consumption should be prepared separately for each item and Gross Value Added (GVA) for all items under the sector. This, however, is not feasible because of data limitations.

For the construction sector a combination of expenditure and commodity flow approach is followed. In this approach, final expenditure on products is estimated. In the income approach factor incomes originating in the sector are estimated. For the organised segments of these sectors, current data on factor payments are available from the budget documents/annual reports of enterprises. But for the unorganised segments, GVA is estimated as a product of value added per worker multiplied by the corresponding work force. The estimates of the work force are prepared, for detailed industrial classification for the base year separately for rural and urban areas.

For getting Net Value Added (NVA) for a sector the consumption of fixed capital is subtracted from the GVA for the sector. The estimates are worked out at current as well as at constant (1993-94) prices. The estimates at constant

prices are worked out from the current prices either by using the bas year prices for valuing the inputs as well as the outputs or by deflating the GVA at current prices by using price index numbers.

For some sector/sub-sectors the estimates are first prepared at constant prices and then converted into current prices by making use of price index numbers. The method of estimating sector-wise value added is explained below:

Industrial Classification of Indian Economy

1) Agriculture, Forestry and Fishing
   - 1.1 Agriculture
   - 1.2 Forestry and Logging
   - 1.3 Fishing
2) Mining and Quarrying
3) Manufacturing
   - 3.1 Registered
   - 3.2 Unregistered
4) Electricity, Gas and Water Supply
5) Construction
6) Trade, Hotels and Restaurants
   - 6.1 Trade
   - 6.2 Hotels and Restaurants
7) Transport, Storage and Communications
   - 7.1 Railways
   - 7.2 Transport by other means
   - 7.3 Storage
   - 7.4 Communications
8) Financing, Insurance, Real Estate and Business Services
   - 8.1 Banking and Insurance
   - 8.2 Real Estate, Ownership of Dwellings and Business Services
9) Community, Social and Personnel Services
   - 9.1 Public Administration and Defence
   - 9.2 Other Services

16.2 AGRICULTURE, FORESTRY AND LOGGING AND FISHING

16.2.1 Agriculture

Let us begin with the agricultural sector, and leave the discussion of forestry and logging, and fishing in the subsequent sub-sections. The agriculture sector

comprises of (i) agriculture proper, (ii) livestock and livestock products and (iii) operations of government irrigation system.

The contribution of (i) and (ii) to the GDP is estimated in terms of GVA using the production approach. The estimation of GVA involves evaluation of the products and by-products and ancillary activities produced during a year at the prices received by the producers and deducting from this the value of intermediate goods and services consumed in the process of production.

Separate estimates of value of output from the agriculture proper and livestock production are prepared while the estimates of GVA are worked out for the sector as a whole because the cost of feed of animals cannot be realistically divided between agriculture and livestock.

In respect of operations of the government irrigation system, income approach is used where the gross factor income generated as a result of providing irrigation services is estimated. The operation of irrigation system by the agriculturists is not separately taken into account as its output gets reflected in the value of output of the crops and the expenditure on its operation in the overall input costs.

The major inputs for agriculture sector are:

i) seed

ii) organic and inorganic manure

iii) livestock feed

iv) irrigation charges

v) market charges

vi) electricity

vii) pesticides and insecticides

viii) diesel oil

ix) current repair and maintenance of the fixed assets and other operational costs.

The NVA from this and other sectors is obtained by subtracting consumption of fixed capital from GVA. The estimates thus prepared are at current prices. To get the estimates at constant prices the valuation of outputs and inputs is done at the prices of 1993-94 . In case of inputs where only value estimates are available, the constant price estimates are arrived at by deflating the current price estimates using the index numbers of prices. The estimates of irrigation charges at constant prices are obtained by projecting the base year estimates by the growth in area under government irrigation.

16.2.2 Forestry, Logging and Fishing

The estimation of GVA from the forestry and logging and fishery sectors is carried out by the production approach. For each sector, first the estimates of the value of output are obtained. The estimates of GVA are obtained by subtracting the value of intermediate consumption values of outputs of the sector.

For both these sectors the estimates at constant prices are obtained by valuing the major items of production at 1993-94 prices, while for minor products the increase in prices is assumed to be the same at that of related major products. The ratio of inputs to output is assumed same for current price and constant price estimates.

16.3 MINING AND QUARRYING

The estimates of GVA in this sector are prepared by following production approach i.e., calculating the value of output of each mineral at state level and deducting the value of intermediate consumption from the value of the output. This implies that GVA is obtained first for each mineral and then added for all minerals to get the GVA for the sector as a whole.

The method of getting estimates at constant prices is the same as that for agriculture.

Check Your Progress 1

1) How is national income originating in agricultural sector/estimated?

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2) Briefly describe the method of estimating gross value added in mining and quarrying.

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16.4 MANUFACTURING

Manufacturing industries is divided into two parts:

i) Registered (organised) and

ii) Unregistered (unorganised)

All factories employing 10 or more workers if using power or 20 or more workers if not using power come under registered manufacturing industries. The remaining manufacturing units are unregistered units.

Registered Manufacturing

For registered manufacturing sector the estimates of GVA are worked out for 20 industry groups, following the production approach. The value of output in this case comprises of :

i) ex-factory value of all products and by-products including semi-finished goods manufactured,

ii) receipts for industrial and non-industrial services rendered to other,

iii) value of fixed assets produced by the factory for its own use, and

iv) net balance of goods sold in the same condition as purchases.

Likewise, intermediate consumption mainly comprise of purchase value of all items of:

i) raw materials, components, chemicals, packing materials and stores actually used for the production process,

ii) fuels, lubricants, electricity, water, etc. consumed,

iii) cost of non-industrial services received from other concerns,

iv) cost of materials consumed for repair and maintenance of fixed assets including cost of work done by others to the fixed assets,

v) cost of contract and commission work done by others on materials supplied by the factories, and

vi) cost of office supplies etc.

The estimates of GVA at constant prices are obtained by deflating the industry-wise estimates of GVA at current prices with the relevant wholesale price indices. This is not the ideal method to arrive at the estimates at constant prices. Ideally the constant price estimates should be obtained by reevaluating the inputs and outputs at the constant prices.

Unregistered Manufacturing

The industry-wise estimates of GVA for unregistered manufacturing are obtained as a product of work force and the corresponding GVA per worker. These estimates are first worked out for the benchmark (base) year and then carried forward to subsequent years on the basis of indicators representing physical volume of activity for each industry. The current price estimates are obtained from the constant price estimates by multiplying these with the corresponding indices of wholesale prices.

16.5 CONSTRUCTION

The estimates of GVA are derived from the corresponding estimates of value of output separately for pucca construction and labour intensive kutcha construction.

In the case of pucca construction, the estimates of value of output are prepared by commodity flow approach. This approach envisages estimation of production of commodities (cement, steel, bricks, timber, fixtures, etc.) used in construction. The commodities available for construction are evaluate at prices paid by the builders at the site of construction.

The estimates of output of labour intensive kutcha construction undertaken with the help of freely available materials like leaves, reeds, mud, etc. are prepared by expenditure approach using data from sample surveys, budget

documents of central/state governments and local authorities and annual reports of public and private sector enterprises.

For pucca construction having estimated the value of material inputs by commodity flow approach, the GVA is taken to be 47.5% of the value of material inputs in the base year. For other years it is adjusted for the relative movement in the index of wages of construction workers as compared to the composite index of prices of construction materials to account for year to year changes.

In case of kutcha construction the output is separately estimated for construction undertaken by the public sector, household sector (separately for rural and urban areas) and private corporate sector. The GVA is taken as 75% of the value of output on a uniform basis.

The sum of the GVA from pucca and that from kutcha construction gives the total GVA from construction.

The current price estimates of GVA by types are converted to constant price estimates by using appropriate deflators for different types of construction work, specially prepared by the CSO for this purpose.

16.6 ELECTRICITY, GAS AND WATER SUPPLY

GVA is estimated as the sum of gross factor incomes in the case of electricity and water supply sub-sectors and as value of output less intermediate consumption in the case of gas sub-sector. The estimates of GVA at constant prices are obtained by using different methods for the three sub-sectors. For electricity the estimates of GVA for the base year are moved forward to other years with the help of data on quantum of energy sold. For gas the quantum of output is evaluated at the base year price and it is assumed that input-output relationship assumed during base year will remain the same for other years also. For water the estimates are obtained separately for public and rural and urban segments of the private sectors. In the case of public sector the estimates at constant prices are obtained by deflating the current price estimates by the consumer price index numbers for industrial workers. For the private sector the estimates are first prepared at constant prices by income approach and then converted into estimates at current prices.

Check Your Progress 2

1) Distinguish between registered manufacturing units and unregistered ones.

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2) How is gross value added estimated in the construction sector?

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16.7 TRADE, HOTELS AND RESTAURANTS

Wholesale and retail trade deal with distribution activities of goods produced in other sectors of the economy like agriculture, mining, manufacturing, etc. The gross output of services rendered in the distribution of commodities is measured as gross trade margins of the trading establishments. From the gross trade margins the intermediate cost incurred is deducted for arriving at the GVA . Due to nature of available data, the estimates from trade, hotels and restaurants are being prepared by adopting the income approach.

The estimates of GVA for trade as well as hotels and restaurants are prepared, separately for the organised segment comprising Public Sector and Private Corporate Sector (including cooperatives) enterprises, and the rest of the enterprises constituting unorganised segment. For the organised segment the estimates at the current prices are based on the current data whereas for the unorganised segment, the base year estimates are carried forward with the indicators of specially constructed Gross Trading Income (GTI). The index of GTI is based on the value of marketable surplus is commodity producing sectors in agriculture, mining, manufacturing, etc. This index is used for trade as well as hotels and restaurants. The base year estimates, for the unorganised sector, are prepared separately for rural and urban areas for trade as well as hotels and restaurants. These are obtained as a product of the number of workers and GVA per worker during the year.

The estimates at constant prices are prepared separately for the organised and unorganised components. The estimates for organised trade have been obtained on the basis of quantum indices of purchases and sales of the public authorities and companies in the organised sector. In the case of hotels and restaurants the quantum index of sales of private corporate sector only are used to carry forward the base year estimates as the corresponding index for public sector is not available. For the unorganised parts of trade and hotels and restaurants the 1993-94 estimates are carried forward by making use of index of GTI at constant prices.

16.8 TRANSPORT, STORAGE AND COMMUNICATIONS

The output of transport (railways, mechanised and non-mechanised road transport, water transport, air transport and services incidental to transport), storage and communication sector cover the value of the services which these sectors deliver to domestic producers, households and the rest of the world. The estimates of GVA are prepared followings the income approach (i.e. number of workers multiplied by GVA per worker). As the sum of compensation of employees and operating surplus (GVA by income approach) is equal to gross output less intermediate consumption, the production approach has been applied in the case of railways as well as communication.

For sub-sectors under this group, the GVA for each sub-sector has been worked out separately for public and private sectors. For the Public Sector GVA for each year is worked out on the basis of analysis of annual reports of different enterprises. While for private sector the estimates are prepared for the base year and carried forward to other years by making use of some relevant physical indicators and price index numbers.

For constant price estimates only physical indicators are used (e.g. the physical indicator for mechanised goods transport is growth in the number of trucks). For public sector also the estimates at constant prices are prepared for different sub-sectors generally by carrying forward the base year estimates by relevant indicators measuring the volume of activity.

16.9 BANKING AND INSURANCE

This sector is divided into the following sub- sectors:

i) Commercial banks

ii) Banking department of the RBI

iii) Public non-banking financial companies

iv) Organised non-banking financial companies engaged in trading in shares, investment holdings, loan finance and the like activities

v) Unorgnaised non-banking financial undertakings such as professional money lenders and pawn brokers

vi) Post office saving banks including operations concerning cumulative time deposits and national saving certificates

vii) Cooperative credit societies

viii) Life and non-life (general) insurance activities.

The GVA from this sector is estimates by income method using readily available source materials for each of the sub-sectors (except No.v). Regarding unorganised non-banking financial undertaking, in the absence of any available source material GVA is assumed to one third of GVA in the organised part of the sub-sector (NO. iv).

Estimates at constant prices are prepared for each of the sub-sectors by moving forward the base year estimates with the indicators measuring volume of activity in each sub-sector.

16.10 REAL ESTATE, OWNERSHIP OF DWELLINGS AND BUSINESS SERVICES

16.10.1 Coverage

The economic activities covered in this sector are

i) ownership of dwellings (occupied residential houses),

ii) real estate services (activities of all types of dealers such as operators, developers and agents connected with real estate), and

iii) business services

16.10.2 Ownership of Dwellings

Ownership of dwellings includes the imputed value of owner occupied dwellings. (services rendered by non-residential buildings are considered to

be a subsidiary activity of the industries, which occupy the buildings and therefore, are not included in this sector).

The methodology for ownership of dwellings consists of estimating the gross rental of residential buildings (including owner occupied) and deducting there from the cost of repairs and maintenance to obtain the GVA.

Gross rental is estimated state-wise separately for rural and urban areas for the base year. The estimates for other years, at constant prices, are obtained by using the growth rate in the estimated number of dwellings in rural and urban areas separately. Current price estimates are obtained by multiplying the constant price estimates with the increase in rent. GVA is obtained by deducting the expenditure on current repairs and maintenance from the gross rentals (both the current and constant prices).

16.10.3 Real Estate

The GVA from real estate is estimated separately for organised and unorganised establishments, the former consisting of public and private limited companies and the rest in the unorganised sectors. For organised units the current yearly data are available for a number of companies from their annual reports. For companies for which reports are not available the estimates obtained on the basis of available reports is adjusted for full coverage by the ratio of paid-up capital of all the real estate companies to the paid-up capital of the companies for which the reports are available. The per head earnings in the unorganised real estate services has been assumed to one-third of that in the organised parts. The estimates of GVA at constant prices are obtained by moving forward the bse year estimates of GVA with the growth rte in the estimated number of urban dwellings.

16.10.4 Business Services

For business services the GVA is obtained as the sum total of earnings of all workers (employers, own-account workers and employees) engaged in the activity, the profit and dividends generated in joint stock companies. Since the estimates of earnings of all workers include the total income of self-employed, employers and employees, only profits and dividends from the joint stock companies need be added for the measurement of total value added. The GVA per worker and also the number of workers for the base year are estimated separately for rural and urban areas. Estimates are first prepared at constant prices for some base year. Estimates for other years prepared by carrying forward the base year estimates by using the composite indicator based on number of chartered accountants, architect and the index of industrial production of machinery including electrical. The current price estimates are obtained from the constant price estimates by using consumer price index numbers for non-manual employees for urban areas and index of wage rate of rural skilled workers for rural areas.

16.11 PUBLIC ADMINISTRATION AND DEFENCE

Public administration and defence covers services rendered by the administrative departments of the general government (Ranging from Central Government to Local Bodies). The expenditure on services produced by the

administrative departments are mainly financed by the government themselves and they are consequently considered to be the final consumers of these services except for a minor part sold to the other sectors Most of the buildings occupied by administrative departments and defence organisations are owned by the government. Data on amount of rent paid for hired premises are not separately available as the same are included under the miscellaneous expenses. Interest paid on borrowings from public by the government being included under interest on national debt. This doe not form a part of factor payment. The cost of inputs, comprising purchasing of commodities and services, compensation of employees and CFC which is also equal to the value of output produced for own use and a minor part sold to household sector thus does not include the element of operating surplus. The contribution GDP, therefore, comprises compensation of employees and CFC only. Constant prices estimates are obtained by deflating the current price estimates by consumer price index numbers for industrial workers.

16.12 OTHER SERVICES

Other services sector includes the following type of services:

i) educational services

ii) research and scientific services,

iii) medical and health services including veterinary services,

iv) sanitary services,

v) religious and other community services,

vi) legal services,

vii) recreation and entertainment services including TV and Radio broadcasting,

viii) personal services (domestic, laundry, dyeing and dry cleaning, barber and beauty shops and others, and

ix) services n.e.s.

The methodology generally followed for estimation of value added from different categories of services is to use the total number of persons engaged and value added/earnings per person. To the extent necessary the profits and dividends earned by the organised/corporate enterprises engaged in these activities are added to account for the factor income generated in the forms other than labour income. The estimates of GVA are prepared separately for the various categories mentioned above. Some details are given below.

16.12.1 Educational Services

The estimates are prepared separately for recognised and unrecognised institutions. For recognised institutions GVA is taken to be the sum of total wages and salaries of teachers and other staff employed in the institutions and the secondary income arising from educational services an consumption of fixed capital. For unrecognised institutions the income is assumed to be a constant percentage of the income of recognised institutions.

16.12.2 Research and Scientific Services

GVA is obtained by using the number of workers under this sub-sector and the GVA per worker. GVA for workers is assumed to be the same as in public administration and defence.

16.12.3 Medical, Health and Sanitary Services

For this sub-sector the GVA is estimated separately for public and private sectors. For public sector, GVA is taken to be equivalent to the budget expenditure on salaries and wages of doctors and other medical staff and consumption of fixed capital. For private sector the estimates are obtained as product of estimated work force and the corresponding GVA per worker. The estimates are separately prepared for rural and urban areas. The annual estimates of total working force are obtained by using the base year figure estimated from population census and the current growth rate in the number of medical personnel available. The work force in the private sector is obtained by subtracting public sector estimates of working force from the total working force. The private sector working force, thus obtained, is divided into rural and urban areas in the ratio of rural and urban working force in the total working force under medical and health services in the base year. GVA per worker by rural and urban areas is based on the follow-up surveys of the Economic Censuses.

16.12.4 Religious and Community Services

The general approach in all these services is to estimate the annual working force in each category using population Census data and to measure the change in the number of persons engaged and GVA/gross earnings per worker. In a number of cases physical indicators have been used to move the base year working force to other years. GVA per worker is estimated broadly following the approach for the medical and health services.

For some of the sub-groups the base year estimates of value added are moved by physical indicators to arrive at the annual estimates at constant prices and then converted to the estimates at current prices by making use of price indices. For other sub-groups the estimates at current prices are deflated by prices indices to derive the estimates at constant prices.

16.13 NET FACTOR INCOME FROM ABROAD

The sum of the GVA's from all the sectors gives the GDP at factor cost or the sum of the corresponding NVAs gives NDP at factor cost. To get an estimate of NNP at factor cost or national income, net factor income from abroad has to added. The net factor income from abroad consists of

i) net compensation of employees, and

ii) net income from property and entrepreneurship.

Here net means receipts by residents minus disbursement to non-residents. The data on net factor income from abroad are obtained from the balance of payments records compiled by the RBI. The current prices estimates are deflated

by the index of Unit Value of imports to arrive at the estimates at constant prices.

16.14 CONSUMPTION OF FIXED CAPITAL

CFC may be defined as that part of gross domestic product which is required to place fixed capital used-up in the process of production during the period of account. CSO has prepared estimates of consumption of fixed capital for 18 sectors of the economy by using the average life of different types of assets.

Check Your Progress 3

1) Describe how gross value added is estimated for banking and insurance sector?

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2) How is gross value added estimated in the medical, health and sanitary services subsector?

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16.15 LET US SUM UP

This unit gives the methodology adopted by the CSO for estimation of gross (net) national product. CSO has been issuing the annual estimates of national product (national income) since 1956. The economy is divided into 9 broad sectors. The estimates of sector-wise gross value added are prepared by following different approaches for different sectors. Even for different sub-sectors under a sector, different methods are used. For example, commodity flow approach is used for estimating value added for pucca construction while expenditure approach is used in case of labour intensive kutcha construction.

16.16 KEY WORDS

Gross Value Added : The total or aggregate of all value added by all the production units of the economy.

Gross Trading Incomes : Method to computre gross value added in the trade hotels and restaurants sector, based on the marketable surplus.

16.17 SOME USEFUL BOOKS

CSO (1989), *National Accounts Statistics*: *Sources and Methods*, New Delhi.

Bhatia D.P. (1996), *National Accounting: Concepts and Estimates*: Khanna Publishers, New Delhi.

Agarwala S.K., *National Income Accounting* , Bookland Publishing Co., New Delhi

16.18 ANSWERS OR HINTS TO CHECK YOUR PROGRESS EXERCISES

Check Your Progress 1

1) See subsection 16.2.1

2) See section 16.3

Check Your Progress 2

1) See section 16.4

2) See section 16.5

Check Your Progress 3

1) See section 16.9

2) See subsection 16.12.3

UNIT 17 DATA SOURCES FOR ESTIMATION OF NATIONAL INCOME AND RELATED AGGREGATES IN INDIA

Structure

17.0 OBJECTIVES

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

- differentiate between primary, secondary and tertiary sectors of the economy;
- describe the sources of data for each subsector in the economy for preparing national income accounts; and
- discuss the procedures used by Central Statistical Organisation to the data to prepare national income for India.

17.1 INTRODUCTION

The first official estimates of national income at constant prices prepared by the Central Statistical Organisation (CSO) with base year 1948-49. These

estimates at constant prices along-with the corresponding estimates at current were published in 1956 in the publication Estimates of National Income. Since then CSO annually been publishing ther estimates of national income (product) and related aggregat6es. Over the years there has been gradual improvement in the availability of basic data and in the methodology of preparing the estimates. The base year for preparing the estimates was first changed to 1960-61 and then to 1970-71. The base year for the current series is 1980-81. The sources of data used by the CSO for preparing the estimates for the 1980-81 series, of gross value added (GVA) and net value added (NVA) for different sectors of the economy are given in this unit . A number of different sources are used to get the estimates of the values of output and the values of different inputs for each of these sectors. For some sectors such as agriculture and mining, production approach is used to obtain the value added. For other sectors like transport, trade, etc., income approach is followed. For organised segments of these sectors current data on factor payments are available from the budget documents annual reports of enterprises. For the inorganised segment of these sectors, GVA is estimates as a product of per worker value added and the corresponding work force. The estimates of work force are based on the 1981 population census data. The estimates of value added per worker are based on the follow up surveys of the economic census. The sources of data used for estimating value added for different sectors of the economy are analysed below.

17.2 PRIMARY SECTOR

17.2.1 Agriculture and Allied Activities

For purposes of evaluation of output 74 crops/crop groups including by-products are considered. These are divided into 4 broad categories viz., (i) 45 items of principal crops, (ii) 10 items of minor crops, (iii) 11 items of miscellaneous and unspecified crop groups, and (iv) 8 items of other products and by products. The list of crops under each of these groups is given in the appendix at the end.

The estimates of physical output of principal crops at state level are regularly obtained from Area and Production of principal Crops in Indian published by the Ministry of Agriculture, Directorate of Economics and Statistics (DES). The estimates are prepared at state levels by the state agencies and are consolidated and published by the DES. The estimates are based on coverage of area and yield through scientifically conducted crop cutting experiments by the respective state governments and are fairly reliable.

The estimates output (and also area) of cashnut, indigo and papaya are also published in the above publication of DES but with a time large of one year. The estimate for the current year are, therefore, obtained by projecting previous year’s estimates on the basis is of past trends and are revised subsequently when more data become available. The estimates of area are fairly reliable but the yield rates are based on traditional methods. For other minor crops the estimates of output are not published. These are prepared by the CSO on the basis of area estimates ad-hoc estimates of yield rates available from various state agricultural departments. Some of the states have initiated a scheme for ‘Crops Estimation Surveys on Fruits and Vegetables and Minor Crops’. This scheme is likely to improve the production statistics of these crops. There are publishers later sources for plantation crops like tea, coffee and rubber, the production figures are obtained from the respective boards.

For unspecified crops like other oilseeds, other cereals, 'other fruits and vegetables'etc. only area figures are available. The values of output of these crops are, therefore, directly estimates on the basis of area and value of output of related major crops/crops groups.

In the process of cultivation of crops and their processing by indigenous methods, several by-products are also products. However, for the estimation of GVA only those by products which are readily identifiable and have some definite economic value are considered. The value estimates of these by-products are based on the results of cost of cultivation studies (CCS) conducted by the DES. CCS scheme was initiated by the DES in 1970-71 for the purpose of obtaining estimates of cost of cultivation of principal crops. The scheme envisaged collection of representative data on inputs and outputs in physical and monetary terms and estimating there-from the cost of cultivation per hectare and cost of production per quintal of the principal crops. The value per unit area of the byproducts available from the CCS have been directly utilized for arriving at the value of output of these products.

Results of Indian Live Stock Census (ILS) conducted one every five years) provide age-wise and sex-wise population at district level for different categories of animals. The estimates for inter-census and post Census years are arrived at on the basis of compond growth rate observed for each category between two consecutive Censuses. The estimates of the output of milk, eggs and wool are obtained through scientifically planned sample surveys, conducted by the State Animal Husbandry Departments (SAHD). Estimates of production of meat of different categories of animals are prepared using the data obtained from SAHD and are based on yield rates and the number of animals slaughtered. The estimates of other meat products and by products are based on the number of slaughtered and fallen animals and the corresponding yield rates. These rate are based on very old reports of the DMI and are not very reliable.

The estimates of the value of inputs are prepared using various sources like NSSO, IASRI, DES SAHD, Central Electricity Authority (CEA), Fertilizer Association of India, All India Debt and Investment Survey (AIDIS), etc.

The estimates of seed and diesel oil are based on the results of the CCS. The results of such studies may be representative for All India but using the same at State level may not be justified. In the case of chemical fertilizers it is assumed that whatever is distributed is consumed. The estimated of state-wise dispatched of fertilizers are published by FAI. The concentrated used in the livestock feed are estimated form the NSSO survey results for the year 1975-76. Data on electricity consumed for agricultural purposes are obtained from CEA. For pesticides and insecticides the estimated of consumption are obtained from pesticided Association of India (PAI). Data on irrigation charges are provided by the State Irrigation Departments. Live Stock feed estimated are very roughly estimated on the basis of availability of different items under this head and are based on a number of studies/surveys carried by the NSSO,IASRI,SAHD etc. AIDS forms the main source of data for preparing estimates of repairs and maintenance charges. These surveys are, however, conducted once every 10 years and the preparation of annual estimated is naturally handicapped due to the non-availability of satisfactory annual indicators.

17.2.2 Forestry

CSO has been collecting data on output of forest products and prices, thereof, prevailing in the assembling centres, directly from the state forest department on a financial year basis for building up the estimates of the value of output of forestry sector. Though the statistics on major forest products (fuel-wood and industrial wood) are to some extent complete, statistics on minor forest products are generally not satisfactory and only value figures are available. from 1991-92 onwards data on production and prices on industrial wood and minor forest products and data on process of fuels wood are received from principal Chief Conservators of forests/state DESs:

A serious limitation of these outturn data is that they represent only the authorised exploited forest resources and substantial quantity of output goes unrecorded. Unrecorded outturn of industrial wood is assumed to be 10% of recorded output. for fuel-wood the unrecorded part used to be taken as 10 times that of the recorded one. Since 1991 issue of NAS the method has been changed on the basis of the recommendations of the working group. The estimates of production are now based on the consumption estimated available from the quinquennial surveys on consumption expenditure conducted by the NSSO.

For minor products reliable data on production and prices are not available for all the states and the estimated for many states are obtained by inflating the royally by the state authories. Comprehensive studies are required to be undertaken for estimating the proportion of unrecorded removals and other required ratios. The data availability regarding minor forest products needs to be improved.

Material inputs in the forestry sector include expenditure on transportation, water, electricity fuel, normal repair and maintenance of fixed capital, etc. No reliable data are available regarding inputs consumed. Based on ad-hoc studies, 10% of the value of output is assumed for the total material inputs consumed.

The scope of present day forestry has gone beyond traditional forest areas. Programmes of social forestry, farm forestry, agro-forestry, etc., are being implemented on a massive scale with public participation. Several international agencies are funding this programme in addition to large investments by Government of India. Though a substantial portion of money is going into private hands and a lot of income is being generated, there is no proper recording of the output of timber, fuel-wood, etc. From these privately owned forests.

17.2.3 Fishing

The data on production and prices of fish are supplied by the state Fishers Departments (SFD)s. For estimation of value of output of all major minerals, except petroleum and natrual gas, is the Financial Year Aggregate of Mineral production published by the Indian Bureau of Mines (IBM). IBM has also been supplying the data on estimates of mining expenses as percentage of value of production for each major mineral (except coal). However, IBM has not been able to provide the data after 1984-85 and the ratios of 1984-85 are assumed to hold good for subsequent years. Regarding coal the value of inputs is obtained from the office of Coal Controller, Calcutta.

Regarding petroleum and natural gas, the data on production, prices and inputs are obtained by the CSO from oil and Natural Gas Commission and Oil India Ltd.

Data on the output of minor minerals are obtained by the CSO from the State Gelological Departments and are in terms of value only. The reliability of data in respect of these minerals cannot to be considered to be of the same order as that of the major minerals. The estimates of inputs are again of ad-hoc nature.

17.3 SECONDARY SECTOR

17.3.1 Manufacturing

Registered Units

The estimates of GVA are directly available from Annual Survey of Industries (ASI) published by the CSO. The survey divides all the registered factories into two parts – (i) factories employing 100 or more workers (Census sector) and (ii) remaining factories (sample sector). A complete enumeration is done of all factories in category (i) and a sample is taken in case of category (ii).

The estimates as published in the ASI are not adjusted for non-responding factories in this sector. The industry-wise estimates of output and GVA published in the ASI are adjusted upwardly by making use of the supplementary information available regarding employment in the non-reporting factories. The estimates of GVA obtained from ASI include bank charges paid by the manufacturing establishments. The value opf such services forms a part of the income originating in the banking and insurance sector, and as such, is deducted from the GVA of the registered manufacturing sector. In the absence of adequate details, adjustments for imputed bank charges are made only at an aggregate level, ASI also gives the industry-wise NVA, which is used for getting the NVA from the registered manufacturing industries.

The estimates of GVA at 1980-81 prices are obtained by deflating industry-wise estimates of GVA at current prices at 2 digit level of National Industrial Classification (NIC) with the relevant wholesale prices indices for the year for which ASI data are available. For recent years for which ASI data are not available (due to time lag in the availability of ASI of data) the industry-wise estimates of the latest year based on ASI data are moved forward by using relevant indices of industrial production. For these years the constant prices estimates are converted to current price estimates by using relevant indices of wholesale prices. These estimates are revised as soon as ASI data become available.

Unorganised Manufacturing

The industry -wise estimates of GVA are obtained as aproducts of work-force and corresponding GVA per worker. These estimates are first worked out for the bench mark (base) year and then carried forward to subsequent years on the basis of indicators representing physical volume of activity. The estimates of workforce for 1980-81 are based on the details provided in the 1981 population Census. The estimates of industry-wise gross vale added per worker except for beverages and tobacco and textiles, are based on the Reports of surveys of unorganised manufacturing industries conducted for the year 1984-85.

In the past, no reliable data were available in respect of unorganised sectors of non-agricultural sectors of the economy. In order to remove the gap in the data, the CSO launched an Economic census and Survey Scheme in 1976. So far four country-wide economic Censues, first in 1977, second in 1980, third in 1990 and the fourth in 1996 and four series of follow-up surveys covering sectors on non-factory manufacuring, trade, hotels, and restaurants, transport, storage and warehousing and services sectors have been undertaken. The economic Census provides a frame for conducting follow up sample surveys to collect detailed information on an enterprise/establishment basis. The establishments are divided into threee groups, namely, (i) Directly establishments (DE) employing six or more persons and (ii) the rest called non-directory establishments (NDE) employing at least one hired worker) and (iii) own-account enterprises (QAE). The surveys for the first group of establishments were conducted by the cso, while the second and third groups of establishments were surveyed by the NSSO.

The first survey of non-factory manufacturing units was carried out for 1978-79 and was based on the frame provided by the 1977 Economic Census. The second survey, based on 1980 Census, was carried out for 1984-85, while the third for the year 1989-90 was based on the updated 1980 Census. The fourth survey for 1994-95, based on 1990 Census, has been done but the results are not yet available.

The results of the surveys for 1978-79 were not used as these were considered to be at variance with the industry-wise estimates already being used. Therefore, the industry wise GVA per workerfor 1980-81 were based on the same source as used for the 1970-71 series. From the year 1984-85 onwards the GVA per worker estimates of GVA for beverages and tobacco are based on the current data available from the Directorate of Tobacco Development and for Textiles the data on production in the decentralized sector are available from Textiles in India by Textile Commissioner for cotton and man-made fabrics and for woolen, pure silk and hosiery from the report of the consumption panel project, All India Annual Survey of Textile Committee.

The estimates for subsequent years (up to 1983-84) were obtained first at constant prices by carrying for ward 1980-81 estimates by appropriate physical indicators. The current price estimates are obtained from constant price estimates by making use of wholesale price index numbers. For 1984-85 the estimates were worked out afresh and are used as bench mark estimates for carrying forward the estimates to get these for subsequent years. The periodical surveys provide detailed data on inputs and outputs once in 5 years only and the problem of preparing the estimates for intervening years remain. There has been no satisfactory data to build up annual indicators necessary for carrying forward the bench mark year estimates.

17.3.2 Construction

The estimates of the value added are derived from the corresponding estimate of value of output separately for pucca and labour intensive kutcha construction. The estimates of the value of output for pucca construction have been derived by using commodity flow approach and for kutcha construction by using expenditure approach. For getting the estimates of output by commodity flow approach, CSO requires the estimates of production of commodities used in

construction and adjusting them for inputs in other industries, changes in sectors and net imports so as to get the estimates of their net availability for construction purposes. Also required is the ratio of value added to value of output. A number diverse sources have been used for estimating the flow of input materials going into construction. Some of the important sources are ASI, Cement production and Despatches brought out by Cement Controller, etc.

For kutcha construction for public sector the expenditures are available from the annual budget documents. For such construction by the private corporate sector also the annual reports are used. In the case of household sector AIDS 1981-82 conducted by the Reserve Bank of India, is used for preparing the estimates.

Although a number of diverse sources (not feasible to list all the sources) have been used for preparing the estimates, yet the estimates are not satisfactory. Because of wide diversity in the types of construction, the proportions of GVA to total value of construction of different types are likely to vary. Even the estimates of the value of output are not satisfactory. It is desirable that the different type of construction are classified into homogeneous groups and the proportion of value added for each group and also the value of output of each groups is worked out on a more satisfactory basis.

Check Your Progress 1

1) Describe how data is collected for agricultural and allied activities for national income accounting?

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2) What is the method of data collection for unorganised manufacturing for preparing national income accounts.

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17.4 TERTIARY SECTOR

17.4.1 Electricity, Gas and Water Supply

The major source of data utilised are: (i) budget documents of the Central , state and union territories in case of departmental commercial undertakings, (ii) annual reports in the case of non-departmental commercial undertakings

and (iii) a sample of annual reports of private companies and data on electricity sold/generated available in the annual publication 'General Review of the Public Electricity Supply – All India Statistics' by Central Electricity Authority. For Gas, the major sources of data utilised are: (i) production data on LPG from Ministry of Petroleum and input-output coefficients from Bharat Petroleum Corporation Ltd. (ii) annual accounts of two coal gas companies, and (iii) annual reports of khadi and village Industries Commission in case of Gobar-gas. In the absence of details of input structure, the value of output of gobar gas is treated as equivalent to GVA. For water suppy, the main sources of data are: (i) budget estimates of Central and State governments, (iii) municipal data on compensation of employees, (iii) population census for estimating work force and (iv) Directorate General of Employment and Training for Data on public sector employment in water supply activies. In case of public sector budget documents are used for preparing the estimates. For private sector, the estimates are based on the work force in the private sector and the income per worker. The work force estimates for the private sector are obtained by subtracting the work force estimates of the public sector as obtained from the DGET from the total force estimates based on the population census. Income per worker is based on the data from different municipalities/corporations. For other years the estimates are carried forward by making use of the data regarding employment given by the municipalities/corporations.

17.4.2 Trade, Hotels and Restaurants

The major sources of data used are: (i) the work force estimates based on the population census data, (ii) The follow-up surveys of the Economic Cesnus conducted in 1979-80 and 1983-84 for getting the estimates of GVA per worker, (iii) annual reports of public sector enterprises dealing in trade, hotels and restaurants, and (iv) analysis of companies in private corporate sector and corporate societies.

The estimates of public sector are based on current data and can be considered as reliable. In the case of private corporate sector, the estimates are based on data from RBI sample studies and finances of medium and large public limited companies. Such data become available after considerable time lag and in the absence of current data, the estimates are built up on the basis of growth in the paid up capital of such companies.

For the Unorganised part of the activity only the bench-mark estimates are based on the survey data. In this case the survey years are not conterminous with the bench-mark year and this results in errors in estimates. For other years the estimates are built-up with the specially constructed indicator of Gross Trading Income (GTI) in the commodity producing sectors. The GTI is based on the value of marketable surplus in commodity producing sectors in agriculture, live stock fishing, forestry, mining and manufacturing. The same indicators are used for trade as well as hotels and restaurants. These indicators are not reliable. The estimates for this sector, therefore, have large scope for improvement.

17.4.3 Transport, Storage and Communications

The estimates of value added from railways and communications are based on up-to-date and reliable information i.e. the production accounts prepared by the concerned ministries. What about civil Aviation ?

The estimates of value added from other transport and storage are separately prepared for the public and private sectors. For public sector, the estimates are based on the current data available from the respective annual reports and other official documents. For private sector, the estimates of GVA are obtained as a products of the workforce under each category and the value added per worker. The estimates of total industry-wise work force are based on 1981 population Census. For each activity the estimates of work force under private sector are obtained by subtracting the workforce under public sector from the corresponding total work force. The estimates of GVA per worker are based on periodical follow up surveys conducted in 1979-80 and 2983-84. For other years the estimates are carried forward by making use of relevant physical indicators and price indices based on various official documents.

17.4.4 Banks, Insurance and Real Estate and Ownership of Dwellings

The overall position regarding availability of data for banks and insurance is satisfactory (official documents), except in the case of unorganised non-banking financial enterprises and own-account money-lender. Certain arbitrary ratio regarding total GVA from this component has been assumed.

Only for the measurement of value added in segment of organised real estate services, current data are obtained from their annual reports. For Unorganised real estate services, the per head earning is assumed to be 1/3rd of that in the organised part. The work force is again dependent upon 1981 population Census.

The major sources of data for ownership of dwellings are: (i) the population Census of 1971, and 1991 1981 for estimating the number of dwellings, and (ii) the data on average gross rental per dwellings NSSO surveys for 1978-78 and 1983. The estimates of gross rental have been prepared separately for rural and urban areas. The surveys conducted by the NSSO give estimates for urban areas only. For rural areas the gross rental has been assumed to be same as rental for kutcha houses in urban areas. The estimates thus prepared relate to the base year. For other years, the estimates are carried forward by making use of growth in the number of dwellings and the growth in the house rent index number for non-0manual employees.

17.4.5 Other Services

The estimates for different category of services are prepared separately for public and private sectors. For public sector the current data based on annual reports are used while for private sector the GVA for different services is estimated as a product of work force and the corresponding GVA per worker based on the follow-up surveys of NSSO and CSO. For educational services, the estimates for prepared separately for recognised and unorganised institutions. For recognized institutions, current data are available for Education in India published by the Ministry of Human Resource Development. Teh GVA for unorgqnised institutions. This percentage is based on the Enterprise Survey 1983-84 by the CSO. For medical and health services, the estimates of GVA for the public sector are equivalent to the budget expenditure on wages and salaries of doctors and other medical staff plus consumption of fixed capital while for private sector these are prepared separately for rural and urban areas

by making use of GVA per worker and the number of workers in the private sector. The annual estimates of work force are obtained by using the base year estimates and the growth rate in the number of medical personnel.

17.4.6 Public Administration and Defence

The sectors of data are the budget documents of Central Governments, state governments, union territories and local authorities and other official documents and the information available in the finance accounts and other reports of the Comptroller and Audiutor General of India. You will read more about public administration and Defence in Unit 18 in Block 7.

Check Your Progress 2

1) Mention the main sources of data for the Electriciy, gas and water supply subsectors for preparation of national income accounts.

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2) How is data obtained for the transport, storage and communications sub-sector to prepare national income accounts?

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17.5 LET US SUM UP

CSO has been continuously publishing annual estimates of national income and related aggregates. Over the year there has been gradual improvement in the availability of data and in the methodology of preparing the estimates. This unit gives the sources of data used by the CSO for preparing estimates of value added for different sectors of the economy.

For sectors like agriculture, forestry, fishery, mining and registered manufacturing the sources for getting the value of outputs and inputs have been listed. Among the listed sources Area and production of Principal Crops in India and ASI are the major ones. For sectors where income approach is followed, i.e. where value added is equal to the products of work force and value added per worker, the major sources for unorganised parts of the sectors are the 1981 population Census for getting work force estimates for the bench mark year and the follow-up surveys of the economic Census for getting the value added per worker. For getting the estimates of value added for public sector, various annual reports and documents of the budge are analyzed and the estimates are based on the current data. For carrying forward the bench mark year estimates of the Unorganised sector to other years a number of physical indicators are used for different economic activities. The indicators used in many cases require improvements and the estimates are not reliable.

17.6 ABBREVIATIONS USED

ASI Annual Survey of Industries

DES Directorate of Economics and Statistics

CSO Central Statistical Organisation

GVA Gross Value Added

NVA Net Value Added

CCS Cost of Cultivation Studies

ILS Indian Live Stock Census

DMI Directorate of Marketing and Inspection

NSSO National Sample Survey Organisation

IASRI Indian Agricultural Statistics Research Institute

AIDIS All India Debt and Investment Survey

FAI Fertilizer Association of India

PAI Pesticides Association of India

CEA Central Electricity Authority

SAHD State Animal Husbandry Departments

SFD State Fishers Departments

IBM Indian Bureau of Mines

DE Directory Establishments

OAE Own-Account Enterprises

NAS National Accounts Statistics

17.7 SOME USEFUL BOOKS

Bhatia, D.P. (1996) *National Accounting: Concepts and Estimates*, Khann Publishers, New Delhi.

Agarwala, S.K. (1998) *National Income Accounting*, Bookland Publishing Company, New Delhi.

Roy Choudhury, Uma Dutta (1995) *National Income Accounting*, Macmillon, New Delhi.

17.8 ANSWERS OR HINTS TO CHECK YOUR PROGRESS EXERCISES

Check Your Progress 1

1) See subsection 17.2.1

2) See subsection 17.3.1

Check Your Progress 2

1) See subsection 17.4.1

2) See subsection 17.4.3

UNIT 18 ROLE AND CONTRIBUTION OF THE PUBLIC SECTOR IN NATIONAL INCOME

Structure

18.0 OBJECTIVES

After going through this unit shall be able to:

- describe the various activities of the government in the national economy;
- state the meanings of 'public sector' and government administration;
- discuss the issues involved in treatment of the government sector in national income accounts; and
- analyse the role played, and the contribution made by the public sector, and government administration in the national income accounts, with illustrations from the Indian case.

18.1 INTRODUCTION

The presence of government is pervasive in modern economies, more so in developing nations such as India. The government is engaged in various activities like consumption, investment, saving and production. In addition, the government provides subsidies and transfer payments, and engages in taxation. Moreover, the government provides the legal framework, and administration. You have been, at several places in many of the earlier units, been acquainted with many of these activities of the government. You should by now be aware of the crucial role that the government plays, at the central, state as well as the local levels, in the economic lives of nations, both as producer, as well as facilitator for the private sector.

This unit takes up for discussion the various kinds of activities performed the government, and how these activities are treated in the national income

accounts. We will see that there are sometimes important conceptual issues that need to be sorted out. For example, there may be a problem about certain activities as to whether they should be treated as intermediate products or final products. Also, it is sometimes not immediately clear whether certain activities of the government should be treated as production or consumption. This unit discusses how national income accounting practices tackle these issues and others as well.

We shall analyse the treatment and presentation in the national income accounts of the different types of government activities, like production, investment, provision of subsidies, transfer payments etc. In developing nations, the state has taken upon itself the task of engaging in production of various economic goods and services. This has also been true of India where since the mid-1950s, the state has tried to occupy the 'commanding heights' of the economy and has taken upon itself the production of heavy industrial goods. Of course, in recent years, because of liberalisation, there has been an move towards the retreat of the state from much economic activity. Even so, the importance of the state remains important. Other than direct economic activities, the state has been engaged in providing administrative services as well as national Defence. These have to be reckoned with in the preparation of national income. How these activities of the government are treated in the national accounts is also dealt with in this unit, with illustrations from Indian national income accounts.

18.2 THE GOVERNMENT SECTOR IN NATIONAL INCOME ACCOUNTS

In modern economies, private and public sectors act as interdependent entities. Both the private and public sectors employ factors of production. The output that private firms produce is purchased by both the private as well as the public sectors. The government makes transfer payments. The government moreover taxes the private sector and also resorts to market borrowing to generate revenues. In many economies, the government acts as producer and there are several state owned enterprises that carry out production in various areas.

Purchases by the government (government expenditure) are, in many economies, a major component of the GNP. The goods and services on which government expenditure takes place are in several instances provided free of cost to the public, and are indirectly paid for through the government budget. Thus many of these goods and services are what are called public goods or social goods.

In the expenditure by governments on payments to factors of production, the wages and salaries to employees in the public sector is often taken as a reasonable proxy. Expenditure is made on consumption and on investment. While a distinction is made regarding expenditure for these two purposes in the case of the private sector, in the national income accounts, in many cases no such distinction is made in the case of the public sector.

When we discuss the provision of public goods and infrastructure and even private goods (say, cars or watches produced by public sector firms) sometimes it becomes difficult to distinguish between final products supplied to consumers and intermediate goods supplied to firms. When the government builds good

roads, highways and bridges, when it can supply efficient municipal services, and even education and police services, then these do sometimes take the form of grants that lower the cost of production for private firms rather than only as services that are provided to final consumers.

In national income accounting, one of the toughest problems has been the treatment of government activities. There are several issues with regard to government activities and their treatment in national income accounts. First and this has been alluded to above, should government services be considered as intermediate or final activities. Secondly, how should government transfers be treated? Thirdly, how about government subsidies and taxes? Finally, how should social sector services provided by the government be considered? The next unit specifically deals with the social sector. In this section we are specifically considered with issues regarding government services and not government enterprises.

Government services are represented in national income accounts in various ways depending on the phase of national income being analysed. When the production phase is considered, then government services are depicted by their net output or value added, which is obtained from figures relating to compensation paid to government employees, plus occasionally interest paid on public debt. Similar is the case with regard to the distribution phase. For the expenditure phase of government services, government services are treated either by the sum of compensation to government employees, government purchases from business and when relevant, the interest on public debt; alternatively it may be depicted by the sum total of expenditures made for various functions of government, like social welfare, education, defence etc.

In many countries, in national income accounts, government services are generally considered in terms of the expenditure made for them. Generally, government services are incompletely represented, usually by compensation paid to employees in the government sector. Government current and capital expenditures for goods and services consist of the aggregate value of current services and factors in the government sector at factor cost and the government purchases from the private sector at market prices.

Check Your Progress 1

1) How are government services treated in the national income accounts in the expenditure phase?

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2) What are main issues with regard to treatment of government services in the national income accounts?

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18.3 TREATMENT OF THE PUBLIC SECTOR IN THE NATIONAL INCOME ACCOUNTS: THE CASE OF INDIA

Accepting the suggestions that had been given in the SNA of the UN, and also looking at the organisational structure of the activities existing in India, the public sector is classified in the Indian national income accounts into the following categories:

a) Producers of government services, namely, administrative departments of the government;

b) Departmental enterprises namely, (a) Railways, (b) Communication and (c) other departmental enterprises;

c) Non-departmental enterprises namely, (i) Financial enterprises and (ii) Non- financial enterprises.

We shall discuss the administrative services in the next section. Here we consider the last two.

Departmental enterprises, which are also known as Departmental Commercial Undertakings (DCUs), are unincorporated enterprises which are owned, controlled and run directly by public authorities. Unlike administrative departments, DCUs charge a price for the goods and services which they provide on commercial basis. The criteria followed to distinguish enterprise activity from administration activity are: firstly, use of commercial methods to determine profit and loss and secondly, control of productive capital in the form of equipment such as machines, plants and stocks.

Non-departmental enterprises are also known as non-departmental commercial undertakings (NDCUs). These comprise (a) government companies (in which not less than 51 per cent of the paid up capital is held by the central government or state government or partly by the central government and partly by one or more state governments) and subsidiaries of government companies; and (b) statutory corporations set up under special enactment of Parliament or State Legislatures. The NDCUs differ from the DCUs is that they hold and manage the financial assets and liabilities as well as the tangible assets involved in their business. These enterprises have separate Boards of Directors and present profit sand loss accounts and balance sheets just like private corporate sector. These enterprises have been divided into two types: financial enterprises and non-financial enterprises. The financial enterprises comprise (a) the nationalised banks and the banking department of RBI, (b) financial corporations, (c) LIC, GIC and its subsidiaries and Employees State Insurance Corporation (ESIC). The non- financial enterprises consist of all other undertakings/enterprises of central, state, union territory governments and local authorities under the primary, secondary and tertiary sectors.

For the different transactions of the producers of government services and DCUs, the budget documents containing of financial statement and demands for grants of all the ministries/departments of the central, state governments as well as local authorities form the major source of data. However, the budget documents of all authorities in urban and rural areas are not always available. To prepare the estimates published data in respect of major urban local bodies and the data directly collected analysed by some of the DESs alongwith the data on current and capital grants to local bodies available in the central and state government budgets are utilised. For rest of the states and union territories data on both current and capital grants, to the local authorities by the respective state governments available from the budget documents of state governments are used. For non-departmental enterprises, the annual reports giving the profit and loss accounts and balance sheets obtained from the individual undertakings form the basis of the estimates.

Data available from the above mentioned sources are analysed for the preparation of a set of economic accounts to show different transactions of the public sector in India. These accounts are published every year in the NAS. The accounts are designed to obtain information about income and expenditure and for tracing their inter-relationship with other sectors of the economy. To prepare economic accounts of administrative departments, DCUs and NDCUs at current prices the data contained in the budget documents and the annual reports of the NDCUs are analysed. The data on various transactions, which is tabulated in the economic accounts of the respective institutional or industrial categories, form the basis of estimates of the components of domestic product, capital formation, saving and final consumption expenditures of the administrative departments at current prices.

The classification of government transactions follows the principles of social accounting and it groups together similar types of transactions of the government after removing all internal transfers. The revenue account in the budget, for example, shows certain transfers to and from the capital account, which are accounting transactions or transfers. The system of classification is based on a series of distinctions useful for analysing their economic impact on the rest of the economy. Current transactions are distinguished from capital transactions and under both of these, transactions in goods and services are distinguished from transfers. The current transactions of Government Administrative Departments are distinguished from the current operations of DCUs, since current expenditure of the Government Administration on wages and salaries and goods and services happen to be final outlays but those of the DCUs are intermediate expenditure, just like cost of raw materials, fuels, etc. Purely financial transactions are differentiated from transactions in goods and services and transfers.

The above-described economic classification, is done annually for all public authorities like Central Government, State & Union Territory Governments and the Local Authorities. These are then collated together and a set of accounts are prepared. These accounts are the production account of producers of government services; production, income & outlay and capital finance accounts of Railways and Communication; production account of other departmental enterprises and the income and outlay and capital finance accounts of administrative departments including other departmental enterprises.

The data obtained from the profit and loss accounts which provide details of income and expenditure incurred by the enterprises during the accounting year are appropriately classified under the two accounts, namely, production account and income and outlay account. The production account deals with items of income and expenditure about the production activity of the enterprises during the year. The other items of income and expenditure in the profit and loss account are elaborated in the income and outlay account. The capital finance account is prepared from the data given in the balance sheet, including the schedule of fixed assets. The transactions during the year are derived as the difference between the closing and the opening figures shown under different heads.

The activities of several big enterprises present in the beginning stages are shown in an account entitled 'expenditure during construction account.' This account gives details of expenditure on payment of salaries and wages, provident fund, purchase of materials etc., and allowances for depreciation during the time of setting up of the firm. The expenditures under this head are later transferred to balance sheet and successively written off in the profit and loss account over a number of years and as additions to fixed assets. It has been found that in many cases, the whole of the expenditure is added to fixed assets though there is a time lag between the incurring of such expenditure and its being charged as fixed assets in the accounts of the firms. Such expenditures are therefore assigned to fixed assets in the year in which they were incurred and this account is joined with production account of the enterprises. The various expenditures are included in inputs and the value of 'own account capital formation' is considered as the output.

If the output of banks, insurance and similar financial institutions were taken equivalent only to the actual service charges as in case of other industries which are not even enough to meet the current input expenses, their operating surplus, and perhaps even their value added would be negative. Imputed service charges are, therefore, taken into account in addition to the changes actually paid by the customers.

In intermediate consumption are included all contingent expenditures The entire expenditure on current repairs and maintenance is included here. All payments for services rendered for other agencies/departments are included here. Rent paid is one of the factor payments and should be classified accordingly. But because of non-availability of data the same has not been done. Moreover, most of the government officers are houses in buildings owned by the government. As per the recommendations of the UN, rent in such cases may be imputed. But this has not yet been done.

Wages and salaries consist of the remuneration of general government employees such as pay of officers, pay of establishment and allowances and honorarium other than travelling and daily allowances. Contributions to provident fund by the government, if any, are included here. Besides cash payments, there are some items of expenditures which are clearly in the nature of payments in kind.

The UN SNA had recommended that large departmental enterprises be separated from the smaller ones, and hence the Railways and Communication enterprises have been considered quasi-corporate enterprises. The enterprises,

other than these two have been included under other departmental enterprises. In the case of Government Railways and Communication the budget documents are analysed, and the three sets of accounts, namely, the production account, the income and outlay account and the capital finance account are prepared separately for Railways and Communication.

The gross input side of the Production Account of Other Departmental Enterprises includes the current expenditure on purchase of commodities and services for intermediate consumption, wages and salaries, interest, rent, consumption of fixed capital and profits. The gross output side includes the value of sales of goods and services.

UN-SNA made changes (a) in the definition of capital formation to include all expenditures by the military on fixed assets that could be acquired by civilian users for purposes of production and the military use the same way (airfields, docks, roads, hospitals, and other buildings and structures), and (b) the estimation of depreciation for all fixed assets including government buildings, roads, dams, and so on.

However, the CSO has accepted the treatment of defence expenditure on only the dwellings for the military personnel as fixed assets formation. Since the 1980-81 series the CSO has been including capital consumption for government buildings. A change brought about in the 1993-94 series is that GFCF of the quasi-government bodies have been included for the first time.

The estimates of net value added at 1993-94 prices are worked out by deflating the current wages and salaries by the Consumer Price Index for industrial workers which is the basis for the granting of DA for government employees. By this process the annual increment also gets deflated. A major source of error can arise from classification of some of the expenditures into current consumption and capital formation and its effect on public sector saving. The UN-SNA has stipulated that the central bank of a country should be shown separately as a financial undertaking, whereas the CSO bifurcates the RBI. Also, there is the question whether consumption of fixed capital has to be provided for buildings and other structures maintained by public administration and defence.

The generally rising trend in the share of the public sector in the country's total GDP and general loss of saving momentum in the public sector. are also observed in unrevised series. As a result of the upward revision in the overall GDP due to better coverage of output outside the public sector, the GDP share of public sector has turned out to be lower as per the revised estimates. The GDP originating in public sector at current prices as proportion of total GDP was 19.6 per cent in 1980-81 and 25.7 per cent in 1999-2000, but public sector saving was 3.4 per cent of GDP in 1980-81 and it had fallen to (-)1.7 per cent by 2000-01.

There are interesting results. First, slow but gradual rising trend in compensation of employees and total consumption expenditures of the general government as percentages of GDP, observed until the second half of the 1980s, was arrested and the ratios showed, even if mild, falling trend between 1989-90 and 1996-97.

Thereafter there was a sudden jump. Interestingly, within these final expenditure

categories, the share of the central government in wages and salaries or in total consumption expenditure, which steadily declined until the middle of the 1980s and which suddenly rose thereafter in the second half of that decade when defence expenditures registered a quantum jump, has experienced a significant downward trend since 1996-97; thereafter this proportion shot up. Moreover, the size of GDP originating at the level of the state government administration has always been higher than that originating in central administration.

Between 1993-94 and 1998-99 the relative increase in domestic product in the local government sector (at 57.1 per cent) has been higher than that in the state government administration (32.7 per cent). Also, due to the requirement of a huge consumption of fixed capital for the public sector, the size of negative savings has trebled between the period 1993-94 and 1990-2000. The share of the public sector in nationwide gross capital formation which touched the peak in 1984-85 at 53 per cent, has been steadily declining since then.

Finally, the public sector share of GDP originating in registered manufacturing has generally been on the uptrend both at constant and current prices, though current price share has always been higher than the constant price share. On the other hand, the public sector investment in real terms has eroded in major sectors and this has been particularly so in agriculture and registered manufacturing. This has been so in real terms and at current prices, as also in gross and net capital formation.

Check Your Progress 2

1) Mention the constituent elements of the public sector.

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2) Distinguish between departmental and non-departmental commercial undertakings in the public sector.

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18.4 TREATMENT OF GOVERNMENT ADMINISTRATION AND DEFENCE IN NATIONAL INCOME ACCOUNTS: THE CASE OF INDIA

In Indian national income accounts, public administration and defence covers services provided by the administrative departments of central government, the state governments, and rural and urban local bodies like municipal corporations, cantonment boards and panchayati raj institutions. Many of these

services are related to the organs of state dealing with collection of taxes, other fiscal services; interest payments and servicing of debt; defence services, administrative services; social and community services (for example., social security, welfare and disaster relief; and economic services (e.g. agriculture, animal husbandry, industries and community development). The expenditure of various funds like central road fund, famine relief fund, labour welfare fund is also part of this industry. The activities of the Issue Department of the RBI are similar to administrative department, and, therefore, this activity is also included under administrative services. However, many economic services rendered by government such as irrigation services or construction activities do not come under the government sector for purposes of national income accounting but are rather shown under their respective accounts. For example, government construction is shown in the general construction sector.

The expenditure on services produced by the administrative departments is financed mainly by the governments, Central, State and Local themselves and hence, they are considered to be the final consumer of these services except for a small part that is sold to other sectors. Most buildings used by administrative departments and defence organisations are owned by the government. Data on amount of rent paid for hired premises are not available separately since these are included under the miscellaneous expenses in the budget documents, interest on capital borrowed by the government is included under interest on public debt, it does not form a part of factor payment. The cost of inputs, consisting of purchase of commodities and services, compensation of employees and consumption of fixed capital, and is also equal to the value of output produced for own use and a minor part sold to household sector thus does not include the element of operating surplus. GDP from the activities of public administration and defence therefore, only consists of compensation of employees and consumption of fixed capital.

The sources of data for looking at the contribution of public administration and defence are the budget documents of Central Government, State Governments, union territories and local authorities and the information obtained from the Finance Accounts, Appropriation Accounts and other reports of the Comptroller & Auditor General of India. For programmes like Integrated Rural Development Programmes, data are obtained from these implementing agencies. For government administrative activities of local bodies, their budget statements and documents form the main source of data.

Check Your Progress 3

1) In Indian national income accounts, what is covered under public administrative services?

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2) Describe the sources of data for public administrative services for the purposes of estimation of nation income in India.

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18.5 LET US SUM UP

In this unit, we took a close look at the treatment of public sector in the national income accounts. We first looked at the theoretical considerations about how and where the public sector output and value added is to be treated and considered in the national income accounts. We saw that the main issue revolves around the decision regarding whether to treat government output as intermediate and final output and how to consider these. We discussed the various views that have been put forward about this issue.

The unit finally went on to look in a detailed way at the treatment of public sector and administration in the Indian national income accounts. We saw the different types of government organisations, enterprises and activities. How government commodities as well as government services are treated in national income accounts was discussed. The unit finally provided an analysis of how Defence services and production activities are treated in Indian national accounts system.

18.6 KEY WORDS

Government Administrative Departments : All departments, offices, organisations and other bodies which are agencies or instruments of the central, State or local public authorities, whether accounted for, or financed in, ordinary or extra-ordinary budgets or extra budgetary funds.

Producers of Government Services : These services are not sold but provided to the community.

Interest on Public Debt : Interest on debt owned by the administrative departments of the Central government, State governments and local governments.

Public Sector : It comprises government administrative departments, departmental and non-departmental enterprises.

18.7 SOME USEFUL BOOKS

Stiglitz, Joseph (1990), *Economics of the Public Sector* (2nd edition) W.W. Norton and Co. New York.

Cullis, J. and Jones, J. (1998) Public Finance and Public Choice (2nd edition) Oxford University Press, Oxford.

Roy Choudhury, Uma Dutta (1995), *National Income Accounting* Macmillan India, Delhi.

18.8 ANSWERS OR HINTS TO CHECK YOUR PROGRESS EXERCISES

Check Your Progress 1

1) See section 18.2

2) See section 18.2

Check Your Progress 2

1) See section 18.3

2) See section 18.3

Check Your Progress 3

1) See section 18.4

2) See section 18.4

UNIT 19 THE SOCIAL SECTOR AND NATIONAL INCOME ACCOUNTING

Structure

19.0 OBJECTIVES

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

- define the social sector in the economy;
- list the various services provided under this sector;
- explain the relationship among the concepts of human development, social security and the social sector; and
- describe the method and process of estimating the value added generated and national income accruing to the social sector in India.

19.1 INTRODUCTION

In the previous unit, you were acquainted with the public sector and how its output and gross value added is estimated and compiled in national income accounts. In this unit, we deal with the social sector. We shall see that many a time some services of this sector is provided to a certain extent by the government in many nations, particularly developing nations. Hence there may be some overlapping with the government sector. In other words, output or services of some social sector activity may also be the output of the government sector. These will be suitably shown in the national income accounts. Hence you must keep in mind that it is not necessary that the social sector and the public sectors are two disjoint separate sectors.

In the present unit, we first look at the social sector conceptually. We try and see what is meant by the social sector, and what activities fall within this sector. We shall see that to understand social sector activities, we need to understand certain related concepts like social development, human development, social security, and so on. In the next section, we discuss these concepts. It helps us to present a theoretical description of the social sector. In

the following section, we see how the social sector and its gross value added is depicted in the national income accounts. The discussion is illustrated by describing the case of Indian national income accounting.

19.2 THE SOCIAL SECTOR AND THE ECONOMY

Traditionally, the social sector is considered to comprise education, health and nutrition. However, according to some writers, the social sector should also include poverty alleviation programmes and aspects of social security. These sectors provide basic social services that may not be purely economic activities or directly add to the production of commodities. Rather, they add to social or human development.

The social sector can be looked at either from a human resources viewpoint or from a human development viewpoint. The two approaches differ in the way they look at how the services of this sector. The human development approaches suggests that the social sector provides services that add directly to the utility of the people and raise the level of development by improving the quality of their lives. On the other hand the human resources viewpoint holds that the services of the social sector, like education, health care and nutrition improve the productivity of workers, makes them more efficient, and thus increases the human resource development. But let us first discuss the concept of development. In this unit, we discuss what is called human development. Unit 22 in the next block also gives some indicators of human development.

What is development? Can it be explained broadly as the expansion of the capabilities of humans to realise their opportunities and to have the freedom to make choices that lead them to achieve their capabilities? In what way is the notion of development related to human rights? Does development bring with it an increase in well being? Human progress encompasses the idea of expanding the choices of people. Ever since the advent of modernity and renaissance, the idea of progress has nestled in human minds. Along with the thought that 'Man [human being] is the measure of all things, has gained ground, the idea that the coming times, the future, can be made better than the past. Due to the Industrial Revolution, first in England and then elsewhere in the West, there was huge increase in the incomes of nations and the standard of living of their people. The people enjoyed unprecedented increase in their purchasing power, and there were spectacular increases in productivity due to adoption of scientific power and new technology and techniques of production. It saw the beginning of the era of what has been called' Modern Economic Growth.' It was accompanied by increased urbanisation, and a rise in the proportion of labour force engaged in manufacturing sector while at the same time a fall in the labour force engaged in manufacturing sector while at the same time a fall in the labour force engaged in agriculture. Over time, the share of agriculture in national product fell substantially, while that of manufacturing increased by leaps and bounds. Later, in the early 20th century, Russia was to transform itself through industrialisation-led spectacular economic growth. Although it had a completely different economic and political system, it too followed the use of technology to increase industrial productivity and transform its economy through rapid economic growth.

These sorts of experiences in different countries led to the belief that economic growth and rising of national income is the key to success in development and

progress. It was later realised that people will use benefits of growth and development. Human beings are the agent of progress, as well as its beneficiaries. They are also ultimately responsible for economic production and growth. We would be making a mistake if we focus only on production and growth as the ends. Expansion in production, rise in incomes and economic growth are the means, the instruments of successful development. Rise in incomes is only an intermediate goal. Economic prosperity is only one way to enrich people's lives. Also, there are areas of human lives where economic growth may be ineffective in bringing improvement, like environmental degradation and ill-health. Even when focusing narrowly on growth and keeping away a look at development —for growth is important, if not enough— we have the quality of growth, and composition of the basket of commodities whose production has increased in this growth process, to focus on. Thus even within the concept of growth there is not merely the issue of magnitude of growth but also its quality and composition.

In the course of evolution of the development theories, some economists came to argue that human resources were as important in the development process of a nation as material or natural resources. Related to this conception was the idea that a nation can and must invest in human resource in the hope of future returns on investment in much the same way as investment in any physical or financial asset. Initially education was considered the quintessential human capital. Later, as research in development proceeded, health also acquired tremendous importance as human capital. Education, and nutritional and health status are important indicators of human development and welfare in their own right.

People have been considered to be important in the study of development in several ways. First, people are considered to be resources or even the embodiment of human capital. Secondly it is the state of being, the standard of living or even the quality of life that is the true measure of development. Thus people are at the centre of any analysis of development. One aspect of people's lives is the liberty they enjoy and the rights they have to various dimensions of living.

The human development approach and the development of the human development index (HDI) was a major step forward in reorienting development for improvements in the lives of people and not merely economic growth. Human development is expansionist in nature and deals with increasing social services along with economic development to increase opportunities. However, this concept does not offer solution to deal with the "downside". It does not effectively deal with measurement and analysis of situations where freedoms are curtailed and there is deterioration in the quality of lives of people.

Another important concept here is that of social security. Social security can be either promotional or preventive social security measures. We must have an idea of what exactly is meant by social security — what kind of services are provided, who are the beneficiaries, which are the institutions through which they are provided, and so on. Also —and this is very important— *why* social security measures need to be provided.

Traditionally in discussions of the subject, the term 'social security' has been limited to mean the set of protective measures for workers in the organised industries or the whole organised sector which do not let the earnings of the

workers to suffer or account of being away from work. These measures include maternity leave, provident fund and gratuity, and so on. But in recent times it has been felt that since a small proportion of workers in developing nations are in the organised sector, and since the poor and the marginalised face uncertain livelihood options and general vulnerability regarding income and consumption opportunities, it is pertinent to expand the scope of the concept of social security. For a large number of people in developing nations, particularly for those in the rural areas and those who are poor, deprivation and vulnerability are unpleasant facts of life. Many of the specific public actions to ameliorate deprivation and vulnerability can be considered part of the range of social security measures.

In defining or explaining what social security is, there is the problem that one can become too specific or too general. In developed countries, certain instruments have been found to be important, like unemployment insurance, old age pensions and invalidity benefits. This approach may not be altogether useful and appropriate when we study developing countries. The other danger in explaining the concept of social security is to be too general. Instead of approaching the definition in terms of means, we could define social security in terms of objectives of removing deprivation and reducing vulnerability. Taking this approach, we could end up including anything that contributes towards these objectives as social security measures, that is, part of the social security system. This approach would not take us very far because human well-being is affected by many social and economic factors and not all of them are or can be included in the definition of social security. Social security is a set of basic public action to reduce vulnerability of affected people.

Public action is not merely action by the state. It includes actions by the public for itself. During disasters, but also otherwise, the actions of NGOs, charitable and religious institutions must be mentioned here. In many traditional societies in India, the family, too, has acted as a provider of social security. Some times it can be taken to mean the checks and the pressures that, say, the print media keeps on the government. Involvement and activism by the public is necessary. The public must act as a watchdog.

Governments can adopt two broad approaches to social security measurers. This first way is to promote general economic growth and use the general benefits accruing from growth to help vulnerable sections of the population. The other approach is to take public action measures directly in terms of social sectors such as education and health and also promote better income distribution patterns, and generate employment. It is possible to argue that checking inflation also helps in mitigating adverse effects of prices on the vulnerable sections of the population. The first approach seems to have worked very well foe East Asian countries like Hong Kong, Singapore, Japan and South Korea, as also for countries like Kuwait and United Arab Emirates. Cuba is a classic example of the second approach as China. In fact, some observers argue that in China, when liberalisation led to very high growth rates in the eighties and nineties, social indicators like the infant mortality rate actually rose. Perhaps there has been a trade off between growth and social security.

Although we have contrasted between social security through growth and direct public action-based security measures, the relation between these approaches is somewhat more complex. First, in many cases the two go together. Second,

in some cases, there is not so much the question of choosing between the two as of getting the timing and sequence right. For instance, it is possible for a country to first undertake direct public action for social security and not stress all that much on growth, and only later emphasise growth. Second, it is not true that the former approach necessarily means relying on and encouraging the private sector while direct public action implies a big role for the government. India is a case in point. In the 1950s, India chose a path of development that emphasised economic growth but relied on the public sector as the engine of growth and let this sector occupy the 'commanding heights' of the economy. This measure assumed that growth would automatically trickle down. After a change of policy in the seventies when more weight was put behind the second kind of approach, India seems to have gone back to a growth-oriented strategy but his time relying much more on the private sector, and foreign capital and technology.

Related to the concepts of human development and social security are the ideas of human rights, and human security. Human security is a recent term, put forward to combine the ideas of national security and security of the people from wars or crimes, and social security. 'Freedom from fear' and 'freedom from want' have become the phrases in vogue under the human security approach. It was not fully realized how interrelated both truly are. Furthermore, ensuring human rights implies ensuring security. The Universal Declaration of Human Rights adopted by the UN in 1948 states that "everyone has the right to life, liberty and the security of person..." However, the concept of human security now encompasses economic, health, and environmental concerns as well. The specific phrase "human security" was first put forward by the 1994 United National Development Programme (UNDP) annual Human Development Report. While the term "human security" is of recent origin, the ideas that underlie the concept are not new. These ideas have been around ever since the International Red Cross was founded in the 1860s; it was there in the UN charter and it was echoed in the Universal Declaration of Human Rights.

According to Article 3 of the Universal Declaration of Human Rights, the right to security of persons is a fundamental human right, together with a right to life and liberty Human security emphasises the need to strengthen empowerments of the citizens. Achievement of human security requires a global political culture that is founded on shared values of human dignity and human rights. Hence important issues in human security like children in war, landmine, and ethnic conflicts should be discussed from a broad human rights perspective. In essence, human security means freedom from pervasive threats to people's rights, their safety or even their lives.

Human security, as defined in the UNDP Report consisted of seven components and dimensions: economic, food, health, environmental, personal, community and political. The main contribution of the UNDP"s conception of human security was focussing on people and highlighting of vulnerability to threats other than violence. It saw security as an "integrative" rather that "defensive concept". But it seemed to underplay threats from violence. It emphasised that human security has a geographical and even international dimension. Problems of international terrorism, drug trafficking, as well as problems of international migrants spill over outside the boundaries of the nation-state. Democracy and good governance are very important in promoting human

security. Human security does not supplant national security. A human security perspective asserts that the security of the state is not an end in itself. Rather, it is a means of ensuing security for its people. In this context, state security and human security are mutually supportive. Building an effective, democratic state that values its own people and protects minorities is a central strategy for promoting human security.

The term "human security" is attractive, because it acknowledges the linkages between environment and society, and acknowledges that our perceptions of the environment, and the way we use the environment are historically, socially and politically constructed. It also recognizes two other features of the link between environment and security. First, that feedback exists between environment and security; for example, environmental degradation may result in population movement which, in turn, poses a threat to the environment.

Human security provides an enabling environment for human development. Where violence or the threat of violence makes meaningful progress on the development agenda impossible enhancing safety for people is a prerequisite. Civil wars and riots depict such situations. Promoting human development can also be an important strategy for furthering human security. By addressing inequalities that are often root causes of violent conflict, by strengthening governance structures, complements political, legal and military initiatives in enhancing human security.

We have seen that human security comprises several aspects. Now we take up, for purposes of illustration, two basic components of human security, namely food and health security. The two concepts are interrelated in that nutritional status is a basic determinant of health status. However, we can discuss the two components separately. We begin with a discussion of health security.

Health security means having low exposure to disease and high and proper access to health services. Poor people are vulnerable to disease as they live in degraded areas and have poor access to health services or cannot afford medical care. For example, diarrhoea because of poor water and sanitation services is a major cause of death among children. Malaria and tuberculosis are other diseases that are widespread. In recent years, the threat of AIDS has gone up tremendously and is threatening and affecting large sections of the population. For health security, preventive strategies are very important and are closely related to provision of basic services of water supply, sanitation, and education. Of course, curative services and access to them as well as their utilisation are crucial too. Areas like intellectual property regarding health services are important too. Health is an area where public action acquires tremendous significance. We mentioned earlier that public action is not limited to action by the state and includes actions by non-government organisations and voluntary organisations. These organisations, other than government departments, are quite active in the health field in developing nations like India. Their efforts have been remarkable in combating and building awareness about deadly diseases like AIDS and in the on-going programme in India to administer oral drops to children below five years of age to prevent polio.

Now let us discuss food security. Food security is a flexible concept. Many definitions of this concept have been attempted. The continuing evolution of the concept of food security has reflected the wider recognition that the technical

and policy issues are highly complex. A careful definition was that negotiated in the process of international consultation leading to the World Food Summit(WFS) in November 1996. Food security as a concept originated in the mid-1970s, in the discussions of international food problems when the world faced a global food crisis. The initial focus of attention was primarily on problems of food *supply* - of ensuring the availability and the price stability of basic food items at the national and international level. A process of international negotiation followed, which led to the World Food Conference of 1974 and a set of arrangements for promoting food security. The issues of famine, hunger and food crisis were also being extensively examined, following the events of the mid 1970s. The outcome was a redefinition of food security. That the potential vulnerability of affected people was a critical aspect was explicitly recognised. Another factor which led to the modification of the views about food security was the emerging evidence that the technical successes of the Green Revolution did not automatically lead to rapid and dramatic reductions in poverty and malnutrition. These problems were recognised as the result of lack of effective demand by the poor.

Food security was defined in the 1974 World Food Summit as:

"availability at all times of adequate world food supplies of basic foodstuffs to sustain a steady expansion of food consumption and to offset fluctuations in production and prices".

In 1983, Food and Agricultural Organisation(FAO) expanded its concept to include securing access by vulnerable people to available supplies, implying that attention should be given to both the demand and supply side of the food security equation:

"ensuring that all people at all times have both physical and economic *access* to the basic food that they need".

In 1986, World Bank report "Poverty and Hunger" focused on the time dimensions food insecurity. It introduced the widely accepted distinction between chronic food insecurity, associated with problems of continuing or structural poverty and low incomes, and transitory or temporary food insecurity, which involved periods of intensified pressure caused by natural disaster, economic collapse or conflict. This concept of food security is further elaborated in terms of:

"access of all people at all times to *enough food* for an *active, healthy life"*.

All this time, attention was focussed on protein-calorie malnutrition. By the 1990 it was recognised that food preferences could be socially or culturally determined.

The 1996 World Food Summit adopted a still more complex definition:

"Food security, at the individual, household, national, regional and global levels [is achieved] when all people, at all times, have physical and economic access to sufficient, *safe and nutritious* food to meat their dietary needs and *food preferences* for an active and healthy life".

The State of Food Insecurity 2001 refined this view and offered the following definition:

"Food security [is] a situation that exists when all people, at all times, have physical, *social* and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life".

Essentially, food security can be described as a phenomenon relating to individuals. It is the nutritional status of the individual household member that is the ultimate focus, and the risk of that adequate status not being achieved or becoming undermined. The latter risk describes the vulnerability of individuals in this context. As the definitions reviewed above imply, vulnerability may occur both as a chronic and transitory phenomenon.

Food security is a multi-dimensional phenomenon. National and international efforts are need to meet and ensure food security, especially in the era of globalisation and liberalisation. Attention has to be given to long-run food security, and focus should not be limited to transitory food insecurity. Sources of dietary energy supply-taking account, for example, of different foods, trends in the acquisition of feed from subsistence to marketing;

Amartya Sen introduced the concept of 'entitlements' to denote broadly the access of the people to food. It is not just availability, but also looks at need, purchasing power, and if it falls short in a market economy, the public action by the State to ensure access to food. Entitlement as a construct injects an ethical and human rights dimension into the discussion of food security. There has been a tendency to give food security a too narrow conceptualisation, often little more than an indicator of chronic poverty. It is to be ensured that the concept is neither too broad, nor too narrow, for effective policy measures.

Check Your Progress 1

1) Distinguish between the human development and the human resources approaches to the social sector.

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2) Discuss the concept of social security.

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3) Explain the relationship between the terms social security and human security.

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19.3 THE SOCIAL SECTOR IN THE NATIONAL INCOME ACCOUNTS IN INDIA

Traditionally in India social sector, in terms of expenditure and activities is thought to encompass a variety of activities which improve the quality of lives of the people. This can be social services; minimum needs programme items like drinking water, nutrition, housing, sanitation etc. For simplicity, many experts have taken expenditure on social services and rural development. They have estimated the growth in social services by looking at expenditures on these services in the centre and state government budgets.

In the national income accounts in India, the social sector is not treated as a whole separately. The main social sector activities that we considered earlier in this unit, like health care, sanitation and education, are treated in the national income accounts as part of 'Other Services'. The main services and how they are treated in the national income accounts will be explained to you in the subsequent unit, which deals with the services sector and national income accounting.

To come back to the social sector, as we mentioned, in Indian national income accounts these are treated as part of 'other services'. These include: (i) educational services, (ii) research and scientific services, (iii) medical and health services including veterinary services, (iv) sanitary services, (v) religious and other community services, (vi) legal services, (vii) recreation and entertainment services including T.V. and Radio broadcasting, (viii) personal services (domestic, laundry, dyeing and dry cleaning, barbers and beauty shops and others), and (ix) international and extra territorial bodies. Schools, hospitals, research and scientific institutions, cultural and recreational services which are operated by the government or non-profit institutions are also included. Domestic services and other personal services rendered by one household to another are also included in this sector.

How is value added computed and calculated for the social sector? The method generally followed is to use the total number of persons engaged and value added or earnings per person. To account for incomes other than wages and salaries accruing to this sector, the profits and dividends of the corporate firms engaged in this sector is added to the salaries. For example, there are now corporate hospitals engaged in the health sector in India.

The major sources of data for computing national income originating from this sector are (a) the population census giving the estimates of working force, (b) the follow-up sample surveys of Economic Census concerned with services, the first economic census for services being conducted in 1979-80 (c) the government (Ministry of Human Resources Development) publication titled

'Education in India' and (d) budget documents for data relating to activities of these services covered under government.

The estimates of GVA are prepared separately for the various categories mentioned in the beginning of this section. For this purpose, the number of workers available from the various population censuses is used. The number of workers for years subsequent to the census years is estimated generally assuming that growth in the years between the various census results follows a geometric growth rate. We may briefly mention the method used to estimate the gross value added for educational institutions and the health sector in the Indian national income accounts. For recognised and unrecognised educational institutions, the estimates are prepared separately. For the recognised educational institutions, gross value added is taken to be the sum of total wages and salaries of teachers and other staff employed in educational institutions and the secondary income arising from educational services plus consumption of fixed capital. Wages and salaries of teachers and other staff working in recognised educational institutions are available from the document 'Education in India' published annually by the Ministry of HRD. For the recognised institutions, GVA is taken to be the sum of total wages and salaries of teachers and other staff employed in educational institutions and the secondary income arising from educational services plus consumption of fixed capital. Wages and salaries of teachers and other staff working in recognised educational institutions are available from the 'Education in India' published annually by the Ministry of HRD. Sometimes data is obtained directly from the ministry since occassionally there is a lag in the publication of this document. For the unrecognised educational institutions, it is estimated from the enterprise surveys periodically carried out. It has been estimated that contributions of the unrecognised educational institutions in value added formed a small proportion of the contribution to gross value added by formal educational institutions. For instance in the 1983-84 enterprise survey, it was estimated that this proportion was about 4.5 per cent. This proportion has more or less been uniformly used in subsequent years.

For the health sector, the computation is done separately for the public sector and private sector health care institutions. For the public sector, gross value added is taken to be the amount of the budget expenditure on salaries and wages of doctors and other medical staff, plus consumption of fixed capital. For the private sector, an estimate is made of the working force in that sector. From this a corresponding estimate is made of the gross value added in this sector. How is the number of work force estimated? The total number of workers in this sector is estimated, and from this the workers in the public sector is deducted. To calculate the total number of workers in the health care sector, total work force is estimated from census data. Along with this, the growth rate of workers in the health sector is estimated from data from the ministry of health. The annual figures for workers engaged in the public sector is made available by Directorate General of Employment and Training

Check Your Progress 2

1) How is value added estimated for services of the social sector in the Indian national income accounts?

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2) How is gross value added computed for recognised educational institutions?

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19.4 LET US SUM UP

In this unit, we considered the social sector and how the output and value added of this sector is shown in the national income accounts. We discussed in detail the components of this sector, and elaborated on some related concepts. We saw that there are two main approaches to thinking about the social sector, the human development approach and the human development approach. The unit then went on to discuss the ideas of human resources and social security. The concept of social security has to be broadened to include some other components, in the case of the developing nations. The unit elaborated in detail about the related and broader concept of human security. For the purposes of illustration, the ideas of health security and food security were discussed, and several definitions of food security were provided.

The unit then proceeded to discuss how all these relate to the national income accounts and how these are shown in the national income accounts. The unit explained these with an illustration from the Indian national income accounts. We saw that growth of the social sector can be seen either by looking at the expenditures on social development and rural development sectors of the central and state government budgets, or actually looking at their growth as share of the GDP. In the national income statistics, the social sector is taken to be part of the 'other services', which for the purposes of the national income accounts, are those services that are not shown in the usual tertiary sector activities like banking and insurance, or trade, hotels and restaurants, and other services like legal services and entertainment services. The unit took some basic examples of how the gross value added of educational institutions and health care institutions are estimated and compiled in Indian national income accounts.

19.5 KEY WORDS

Gross Value Added : Gross output at producers' value less intermediate inputs at purchasers' value.

Human Development : This depicts all-round development. It focusses on the improvement in well-being, quality of life and meeting of minimum needs.

Social Security : Services provided to guard against vulnerability of earnings that may arise due to disruption in the earning process. Traditionally it included measures for workers in the organised sector only like accident benefits, gratuity, etc., but is now used to denote a host of activities to guard against rural unemployment, poverty alleviation and so on, and hence focuses on the marginalised and poor.

19.6 SOME USEFUL BOOKS

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

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

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

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

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

19.7 ANSWERS OR HINTS TO CHECK YOUR PROGRESS EXERCISES

Check Your Progress 1

1) See section 19.2

2) See section 19.2

3) See section 19.2

Check Your Progress 2

1) See section 19.3

2) See section 19.3

UNIT 20 SERVICES SECTOR AND NATIONAL INCOME ACCOUNTING

Structure

20.0 OBJECTIVES

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

- understand characteristics of services as distinguished from goods;
- have an idea of how the contribution of various services to the GDP is estimated;
- know the historical views on the nature of services;

- appreciate the relative importance of services as an economy develops and the factors responsible for such a change; and
- know the share of services output in the Indian economy.

20.1 INTRODUCTION

Services are being produced and consumed from time immemorial. Once people have adequate food and clothing, they may choose to consume some services. These may be a part of leisure activities of a person. He may need medical services to keep himself fit. He may enjoy music performed by other or may like watch a soap opera. One may afford some personal menial services.

It may be pointed out that the services performed by labour (or other factors) in producing goods is not take as services. There is no production without them. Service as an output of an activity is all that we are making a reference to . Three quarters of the GNP of the US is now contributed by services. A good variety falls in this broad category: medical services, educational services, entertainment, laundering and hairdressing, banking, insurance, stock marketing and other financial services, whole sale trading retailing, auctioneering and brokerage; transportation of goods and people and all variety of communication; and police, defence and administration. We shall discuss various aspects of this category of production in this unit.

20.2 SERVICES AND GOODS

20.2.1 Goods Vs. Commodity

We often come across two phrases: ‘goods and services’ and ‘commodities and services’, implying that goods and commodities are synonymous. However, we will make a distinction between goods and commodities. While a good is thing from whose use people derive satisfaction, a commodity is a thing which is produced with a view to sale.

20.2.2 Goods Vs. Service

Now in an economy there are two major kinds of output of economic activities: goods and services. Services are goods in the sense that people draw utility from them and that is precisely why they are demanded. They share many other characteristics of goods: for example their production also requires inputs like that of goods.

But services are different from goods in the sense they lack material form. They are not physical objects. As a result, it is important to note, the ownership rights cannot be established over services. It is easy to visualise that they are demanded and supplied simultaneously. Their production and consumption is simultaneous. If not simultaneous they are provided to their consumers by the time production is complete. There is therefore no scope for storage and sale afterwards. There trade is, in short, not separate from production.

20.2.3 Role of Services

The latest United Nations System of National Accounts describes a service as one which brings changes in the conditions of goods and persons. Repairing,

polishing, whitewashing, cleaning or otherwise transforming the items in possession of the consumers by directly working on it, bring about changes in the conditions of gadgets. Transporting a person, providing him with accommodation, giving his medical or surgical treatment, improving his appearance, change physical conditions of the consumer. Activities of education, advice, informing, entertainment change his mental conditions. Activities of insurance, finance, protection, and guarantee/warranty change the general economic state of the institutional unit itself. These changes could of course be temporary (travel) or permanent (education, medical aid).

20.2.4 Own Account Services not an Economic Activity

However, own account production of services within the households is not treated as an economic activity. Such services include services rendered by family members to each other like cooking, looking after children and older etc. This is not included in the computation of national income. Though there are problems because of non-inclusion as there are problems in inclusion.

20.2.5 Conclusion

Yet, one can not escape noticing that service industries are growing as the markets for services are developing. It also denote the fact that services are largely produced by one unit for the benefit of another. (Service rendered unto oneself is normally not regarded as an economic activity). While goods may not be commodities while services are all commodities if one aspects that definition of commodity whereby a commodity is a thing produced for sale.

Check Your Progress 1

1) What are the characteristics of services that are common with goods?

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2) What are the characteristics of services that distinguish them from goods.?

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3) Establish that a service is always a commodity whereas a good may not be ?

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20.3 VARIETY OF SERVICES

20.3.1 Meaning of a Service

Normally the word services cannot to proper services of a personal nature, say hairdressing or nursing. People also extend this word to denote the performance of a person or a group for another person or group, say entertainment. We have now started talking of business services-banking and insurance, though they are not of very recent origins.

20.3.2 Non-market Services

We also refer to non-market services such as policing, defence, administration and justice. The state owes its existence to these very services. These services are not sold but supplied free to the people. In a modern state such activities are large in number. We can classify them as:

1) general administrative services comprising of police, jails, external affairs, defence services, law and justice;

2) social and community services comprising of education, medical and housing;

3v Economic services comprising of services related to agriculture, industry, transport and construction.

4) Fiscal services dealing with collection of taxes and servicing of debts.

20.3.3 Market Services

We also talk of market services such as trade, transport and communication. Trade, wholesale and retail, distributes the goods from primary producers to its consumers who may be households or industries. Since consumers and producers are physically separated and traders choose to locate near consumers, the product has to be transported. The mean of transportation these days are in all forms: railways, roadways, waterways and airways. These modes also transport passengers in addition to goods. You travel for transacting business, meeting relatives or having fun. For your stay there are hotels and for your eating there are restaurants. Their activities provide a variety of services.

Sometimes things have to be stored in godowns and cold storages. There are specialists in this business.

Similarly communication is an important service sector. Telecommunication is assuming increasingly important place within this sector. Yesterday, it was postage, telegraph, and telephone. Today, we have facilities of telexing, faxing, paging and e-mail. In all big cities you see boards and hoardings inviting you to buy land, bungalows, houses and flats. Most of them are not sellers themselves. They help you meet the sellers. They charge you a fee for the services they render. This is called business of real estate.

Finally, goods recognised as consumer durables also provide service to their users over time. Often we ignore contribution of such gadgets. But the services of your house are not ignored. The ownership of the house allows you to enjoy its service without any explicit payment which you have to do in case you are renting it.

20.3.4 Services Included in National Income Accounting in India

The services sector from the view point of national income accounting in India includes the activities of trade, hotel, restaurant; transport, storage and communication; banking, insurance and other financial services; services of personal nature such as education and medical services or domestic help; and of community nature such public administration of justice, police and defence; and business of real estate.

Check Your Progress 2

1) Give examples of business services.

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2) Discuss services that are normally provided by market.

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3) List non-market services.

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4) Illustrate examples of services that are not rendered by individual human beings.

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20.4 ESTIMATION OF CONTRIBUTION OF SERVICES TO GDP

There are two major approaches employed to estimate GDP: production approach and income approach. In our country income approach is chiefly adopted to estimate the contribution of services sectors which are classified in the following broad sectors:

1) Trade, Hotel and Restaurant;

2) Transport, Storage and Communication;

3) Banking and Insurance;

4) Real Estate and Ownership of Dwellings and Business Services;

5) Public Administration and Defence; and

6) Other Services.

20.4.1 Trade, Hotel and Restaurant

Trade sector deals wholesale and retail trade distributing goods produced or imported. These goods are produced in other sectors like agriculture, mining & quarrying, forestry & logging, and manufacturing. The activities of purchase and selling agents, brokers and auctioneers are also part of this sector. The gross output is measured as gross trade margins of the trading establishments (excluding the delivery cost of goods to the Unit) which primarily sell the goods in the same condition in which they were purchased. Intermediate cost incurred in transactions deduced to arrive at gross value added . Activities of hotels, lodging places, restaurants, cafes and other eating and drinking places are similarly treated.

Estimates are prepared by using income method separately for organised segment comprising of public sector, private corporate sector and cooperatives and unorganised segment constituting the rest. In the case of former annual reports provide the data for the current year while in the case of the latter base year estimates of :

i) number of workers; and

ii) average gross value added are carried forward for each sub-category.

20.4.2 Transport, Storage and Communications

Transport services by rail, road. Water, air and any other means and services incidental to transportation of storage as well as services rendered by post and telecommunication departments and overseas communication services are covered in the sector of Transport, storage and communication. The output of these services is measured in terms of the value of services involved in delivering goods and providing services to domestic producers and households

and the rest of the world. The nature of these services suggests the measurement of their contribution through income approach. Again the approaches adopted for the organised segment and unorganised sectors are the same as the case of Trade, Hotels and Restaurants.

20.4.3 Banking and Insurance

The services covered under the sector of Banking and Insurance extend to the services of organised banking and non-banking financial institutions (corporations and companies) engaged in trading in shares, investment holdings, loan finance etc., activities of cooperative credit societies, activities of life and non-life insurance as well as unorganised non-banking financial undertakings of professional moneylenders and pawnbrokers.

Income approach making use of annual reports and profit and loss accounts is employed to estimate gross value added in organised segment which is significantly large, independent indicators or trends in the organised sector are used for estimation of contribution of the unorganised segment as no direct data is a viable.

In the case of banking the charges collected from the customers are much lower than the expenses incurred on services of maintaining accounts and giving advice while some income is earned by charging from customers higher interest than that is paid to depositors.

RBI publishes data in respect of commercial banks, non-banking financial institutions, and banking department of RBI, LIC, SFC and other corporations publish relevant data in their annual reports. The budget documents of postal department give data pertaining to post office savings and postal life insurance. Gross value added comprises of compensation of employees and rent only in the case of banking and insurance.

20.4.4 Real Estate, Ownership of Dwelling and Business Services

Now let us come to the sector of real estate, Ownership of Dwellings and Business Services. The gross value added of ownership of dwellings is obtained by deducting the cost of repairs and maintenance from the gross rental of residential buildings (including owner-occupied houses) obtained as the sum of products of average gross rental per dwelling and number of dwellings in each category.

For real estate services again income method is followed for analysing the annual reports of real estate enterprise.

For business services to be provided by people engaged in:

i) accounting, auditing and book keeping;

ii) engineering, architectural, and technical services; and

iii) renting and leasing of machinery.

The methodology of number of persons and valued added per person is employed.

20.4.5 Public Administration and Defence

The sector of Public Administration and Defence covers the services rendered by the administrative departments of general government, extending over union, state and union territories, and municipal bodies. They also include collection of taxes, other fiscal and administrative services, servicing of debt, defence, and social, economic and community services. The management of various relief and welfare funds as well as the issue department of RBI are also included.

The gross value added in this case comprises of compensation of employees plus consumption of fixed capital assets owned by authorities of public administration. The sources of data for current price estimates are budget documents of the government and finance and appropriation account, report of the comptroller and auditor general of India.

20.4.6 Other Services

The sector of other services includes personal and community services in the areas of education, health, sanitation, law, recreation and entertainment, personal services such as laundry as well as all other services not listed elsewhere. Income approach is adopted for measurement of its gross value added in each category. Usual procedure is to make use of total number of persons engaged and value added/earnings per person.

Check Your Progress 3

1) What do you mean by trading margin ?

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2) How are the estimates of output of hotels and restaurants made?

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3) What is the approach adopted in the measurement of the contribution of transport?

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4) Discuss the procedure whereby contribution of banking and insurance sector is estimated.

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5) How is the contribution of real estate business measured?

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6) Why should the house rental value of the houses not rented be calculated?

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7) Write down the data source for Public Administration services.

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8) What are the Services included in the Other Services Sector.

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20.5 NATURE OF SERVICES

Adam Smith, the founder of economic science, did think that services do not leave behind any trace or value. He gave examples of services rendered by menial servants, lawyers and sovereign and considered the labour of such people as unproductive. Said Smith, "the sovereign with all the officers of both justice and of war who serve under him, the whole army and navy (there was no air force then!), are unproductive labourers……In the same class must be ranked some of the gravest and most important: churchmnen, lawyers, musicians, opera-singers and opera-dancers. For Smith, wealth with which he was most concerned, was stock of goods. Therefore, durability or perishability of things was of crucial importance to him. Yet he agreed that unproductive labour has its value and deserved its rewards.

However, Smith in a view did not persist for long. Education and medical services were given as counter-examples to prove that they have long term influence on economic activities. In certain other contexts, the services of trade and transport can be classified as the activities related to the production of goods. While both trade and transport were considered productive by Adam Smith, it may not noted, Dadabhai Naroji did not include the activity of transport in the computation of national income of India.

The reason for such a blurring owes to the fact that general meaning of words often differ from special meaning which we attach to them. Economists thank that an activity qualifies to be called production if it creates some utility for human beings though they often distinguish exchange from production. For ordinary people, production suggests the making of something material which one can touch, handle, cart about and bring home in paper bag. Yet economists did not ignore the services making goods available when they are wanted and/ or where they are wanted (e.g., trade, storage, and transport) and called them productive.

Neoclassical approach holds that the activities that are undertaken with pecuniary considerations are productive irrespective of the fact whether they are material or not. So the services of all hues are productive. They may include services of doctors, teachers, civil servants, administrators, passenger transport workers, entertainers, domestic help do useful work and are paid for it.

Some people suggest that product be taken as an act that is directed to the satisfaction of other people's wants through exchange. Then there will be problem in the case of Ribinson Crusoe who would not be producing anything as he has nobody to exchange with. But he could not consume as he could not produce. They he could not survive too!

We may note in short that all production whether of goods or services should be treated as productive which meet the following criteria:

1) Capable of satisfying human wants;

2) Exchanged in the market; and

3) Require use of both capital and labour.

Therefore, materiality of things is really immaterial and they are all included in the computation of national income.

Further, many goods are purchased for their services. All consumer durables such as television, refrigerator, automobile and even house, factory and land are all bought for their services over time. Therefore, if one wishes, one can classify the services in two broad categories:

1) Those rendered by persons and

2) Those rendered by durable goods,

3) The former includes (a) personal; (b) community; and (c) business services.

Check Your Progress 4

1) What is according to Smith, the chief characteristic of unproductive labour?

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2) What is the difference between the view of Dadabhai Naroji and Adam Smith on the nature of trade and transport?

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3) How does the general conception of production differ from the economist' perception? How does it make a difference?

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4) Explain the services rendered by goods.

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20.6 IMPORTANCE OF SERVICES IN ECONOMIC DEVELOPMENT

Josiah Stamp had written that as civilisation advances, it may well do so by the very fact that merely material production in wealth tends to render a less and less proportion of total human enjoyment. From the days of sir William Petty to the present there has been continuing transfer of working population to secondary and tertiary production. In short, as an economy advances, it can be safely said, the importance of services increases.

G.B. Fisher (1939), colin Clark (1940) and Fourastie (1949) formulated theories of growth in terms of primary, secondary and tertiary sectors. The tertiary sector is a service sector. These theories hold:

1) productivity gains are higher in services sector than in industry.

2) Income elasticity of demand for services is greater than that of demand for goods.

It may be recalled that the second tendency emanates from Engel's law. Recent experience, however, suggests that in case of services even if growth slows down, growth of service sector does not.

However, it is also argued that, under planning, service sectors in the beginning grow more rapidly than goods sector in order to meet the accelerated demand of infrastructure.

Let us note that trade, transport, telecommunication, banking and insurance constitute logistic basis for internal organization of companies (Williamsom). Leisure, education, housing and health may sometimes be demanded for final use.

Check Your Progress 5

1) Discuss the movement of service sector in relation to other sectors.

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2) What kind of services will grow on their own accord and what kind is given prefernece under planning?

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20.7 INTER-INDUSTRY LINKAGES

Services may be demanded for final use as well as for intermediate use. Intermediate use is a derived demand. It is often discussed with respect to linkages. Linkages are of two varieties; capital and current. Since services cannot be stored as they do not have material form, they do not have capital linkages with production except when the concept of human capital is invoked. So far as current linkages are concerned production of both goods and services require inputs of both goods and services. Both are put out for final use but investment component of services would draw as blank.

With a view to providing a labour of the strength of such a relationship. For illustration, we share some information based on the input-output table of India for 1983-84 (constructed by the CSO). Out of the total production of Rs.3,54,300 crore, roughly Rs.1,55,900 crore get consumed in the production system as inputs – Rs.1,25,800 crore in the form of material goods and Rs.30000 crore in the form of services. Thus only goods worth Rs.132100 crores and services worth Rs.66,300 crores were used as final products. It may be noted that noted that while goods sector needed services worth Rs.25,900 crore, services sector needed goods worth 16,100 crore. Services also need input of services. This year they needed total inputs worth Rs.30,000 crore of which services formed a part equivalent to Rs.13,900 crore (See Table-1 below):

Table 20.1: Input Output Matrix of Transactions (1983-84)

(Billion Rs.)

	Goods	**Services**	**Sub-total**	**Final Use**	**Total**
Goods	100	161	1161	1321	**2482**
Services	259	139	398	663	**1061**
Subtotal	1259	300	1559	1984	**3543**
Value added	1223	761	1984	-	-
Total	**2482**	**1061**	**3543**	**-**	**3543**

From table 20.1 it is easy to infer that

1) of the total goods used as inputs 20 per cent go to the production of services;

2) of the total services used as inputs 54 per cent go to the production of goods; and

3) 62 per cent of the services are used for final use purposes.

If one had tables for many years one would find that services to services input is increasing over time.

Check Your Progress 6

1) Why is it not possible for services to provide capital inputs to the production of services?

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2) Try to reason which kind of services may be going as input to production of goods?

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3) Provide an example in which services show up as final use only.

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20.8 SHARE OF SERVICES IN NET DOMESTIC PRODUCT

We present below the share of services in the net domestic product at current and constant. (1980-81) prices.

Table 20.2: Net Domestic Product and Services at Current Prices

(Rs. thousand crore)

Year	NDP (at factor cost)	Services	Services as percentage of NDP
1950-51	86	24	27.8
1955-56	92	31	33.7
1960-61	143	47	32.8
1965-66	224	75	33.5
1970-71	368	119	32.5
1975-76	649	230	35.5
1980-81	1103	394	35.7
1985-86	2076	803	38.7
2004-05	4205	1688	40.1

Table 20.3: Net Domestic Product and Services at Constant (1980-81) Prices

(Rs. thousand crore)

Year	NDP (Rs. Crore)	Services (Rs. crore)	Share of percent
1950-51	407	108	26.6
1955-56	483	131	27.1
1960-61	590	164	27.9
1965-66	665	209	31.5
1970-71	832	258	31.1
1975-76	957	316	33.0
1980-81	1103	394	35.7
1985-86	1402	530	37.8
1990-91	1885	752	39.9

During the period 1950-51 to 1990-91 we find that the share of services sector has increased from around 27-28 per cent to around 40 per cent. The share in terms of constant prices is a bit lower in many years and substantially lower in many other years. This was the picture on the eve of economic liberalisation in 1991. Since then the share of the services sector has reached about 60 per cent.

20.9 LET US SUM UP

In this unit we have tried to bring out the distinction between goods and services. We also tried to describe the variety of ways in which services are produced. We also noted the way the value of their contribution to the GDP is estimated at current prices. Then we considered the view of Adam Smith on services . But we also thought it fit to know the historical views and arguments on the nature of certain services such as trade and transport.

There are certain laws whereby the increasing important of services in an economy as it progresses, are established. We also studied about the input linkages between goods and services as also between services and services.

Last we tried to know the relative importance of services in our NDP. The services goods ratio which stood 1:3 in 1950-51 has turned to 2:3 in 1990-91.

20.10 KEY WORDS

Commodity : A thing produced with a view to sell.

Final Use : That part of total output which is purchased for consumption and investment.

Goods : Material items useful to human beings.

Intermediate Use : That part of purchases by production units which is entirely used up in production during the year.

20.11 SOME USEFUL BOOKS

Paul Studentski (1958), *The Income of Nations,* Published by New York University Press, Indian Reprint Khosla & Co. in 1977.

Wilfred Beckerman (1976), *An Introduction to National Income,* Weidenfeld and Nicolson, ELBS edition, London.

Uma Datta Roy Choudhury (1955), *National Income Accounting*, Macmillan India, New Delhi.

D.P. Bhatia (1996), *National Accounting: Concepts and Estimates* Khanna Publishers, New Delhi

Those who are interested in further details of estimation in the Indian context may also look for National Accounts Statistics: Sources and Methods published by the CSO in 1989. To know the latest position, one may have to see the notes given in annual editions of National Accounts Statistics.

The voluminous books known as the System of National Accounts published in 1993 under the aegis of the UN is very useful for advanced learners.

20.12 ANSWERS OR HINTS TO CHECK YOUR PROGRESS EXERCISES

Check Your Progress 1

1) See subsection 20.2.2
2) See subsection 20.2.2
3) See section 20.2

Check Your Progress 2

1) See subsection 20.3.1
2) See subsection 20.3.3
3) See subsection 20.3.2
4) See section 20.3

Check Your Progress 3

1) See subsection 20.4.1
2) See subsection 20.4.1
3) See subsection 20.4.2
4) See subsection 20.4.2
5) See subsection 20.4.4
6) See subsection 20.4.4
7) See subsection 20.4.5
8) See subsection 20.4.6

Check Your Progress 4

1) See section 20.5
2) See section 20.5
3) See section 20.5
4) See section 20.5

Check Your Progress 5

1) See section 20.6
2) See section 20.6

Check Your Progress 6

1) See section 20.7
2) See section 20.7
3) See section 20.7

UNIT 21 NATIONAL INCOME AND ECONOMIC WELFARE

Structure

21.0 OBJECTIVES

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

- point out the limitations of national income as a measure of welfare;
- describe the concept of economic welfare; and
- distinguish between economic and social welfare.

21.1 INTRODUCTION

Just about 60 years ago, Gross National Product (GNP) and national income were obscure concepts known only to professional economists and their students. Today, they have become familiar parts of the vocabularies not only of economists but also of businessmen, politicians and journalists. Indeed, it is almost impossible to pick up the daily newspaper without coming across a reference to gross national product or some of its components. Economists have always known that national income is not a good measure of “welfare” in the wider sense of the word.

When price rise, our yardstick shrinks - a rupee equals fewer goods and services of every years in terms of the prices index. The technique of adjusting. Politicians and editorial writers often quote the latest GNP or national income statistics as evidence of consumers' economic welfare. How well do these statistics measure our well being ? Economists have always known that national income is not a good measure of "welfare " in the wider sense of the word. Further, during the last few years there has been increasing criticism of the conventional measurement of national income on the grounds that it is poor measure 'welfare' in some sense or other. The reasons for this increasing dissatisfaction with the GNP measure are not hard to find or understand. The more one considers the relationship of measuring GNP to society's welfare, the more complex it becomes. Is it appropriate to separate 'economic welfare' from 'political' or other 'social' considerations? Whose judgement of welfare is to be considered decisive when opinions differ ? If the pile of goods and

services produced each year does not have any relationship to economic welfare, just what does it signify ?

21.2 ECONOMIC WELFARE

What is economic welfare and how is it measured? The first point to make here is that GNP is not a measure of welfare at all. Welfare is concerned with well being or happiness. These subjective concepts are all influences by many factors other than economic goods. The national output only tells us the total quantity of goods and services available to a community in a particular period of time. Even in this respect there are deficiencies and limitations which need to be borne in mind and which can conveniently be listed. The GNP is not a perfect device for measuring current production and income. Some items are excluded, even though they would be properly classed as 'current production'. Sometimes production results in harmful 'side effects' that are not fully accounted for. Comparison of GNP between two time periods raises additional problems. National income was never intended to be a measure of social welfare. It is simply an accounting measure of economic activity. In this unit we will focus on some of the shortcomings of GNP as measure of economic performance.

Price Changes: In comparing national output over period of years, we must allow for changes in prices if the comparison is to be meaningful. As such, money GNP must be adjusted for the change in prices. This is because we are working with a rubber yardstick. All our figures of output and income are expressed in rupees. But a rupee sometimes measure a large quantity of physical goods and sometimes a smaller quantity, depending on changes in prices. When price rise, our yardstick shrinks-a rupee equals fewer goods than before ; and if prices fall, the yardstick expands again. The usual method is to value all the goods and services of every year in terms of the prices ruling in one particular year prices index. Such an exercise is done with the help of a price index. The technique of adjusting for price changes by use of a price index is called deflation. Even after the price experts have done their best, we are far from being out of the woods. Here are a few issues to consider : (i) The deflation procedure assumes that we are dealing with unchanging products. But in practice product quality is always changing, usually for the better. (ii) Quality improvements, whether measurable or not, are certainly important. (iii) This difficulty becomes even more serious if some goods disappear completely from the shopping list and new articles take their place. What about products which do not replace anything, because nothing like then existed before ? Price indices and GNP totals are not well adopted to covering drastic changes in the items going into national output.

Composition of National Income or GNP: The kinds of goods produced by a economy are completely hidden from view by a GNP figure. For example, if an increase in GNP is entirely composed of weapons for war, then despite increase in national output personal welfare would go down. Thus, for judging increases in consumer welfare, it is important to look at the make up of GNP as well as its size. Nobody eats GNP. We must focus on that part of GNP which is destined for consumer use. And perhaps not all of that.

Output Distribution: It is difficult to determine the extent to which a nation is better off simply because its GNP has increased. The distribution of increased

output must be considered. If additional income is distributed to the wealthy but not to the poor, it may represent a deterioration in economic welfare rather an improvement.

Population Changes: per Capita GNP and the Distribution of Output : We need to allow for changes in the population if some comparisons are to be helpful. National output, especially when divided by the total population to give a measure of output of output per capita, is often uses as an indicator or economic welfare. However, this tells us nothing about the distribution of income amongst the population ; it only gives us an average. We also need to know how the output is divided among its citizens. Because an economy's GNP is typically distributed unequally among its citizens, it is necessary to study this distribution in more detail in order to get a more accurate assessment than that provided by per capita GNP.

Leisure and GNP: GNP measures output, not inputs. It says nothing about how much effort was needed to produce a certain output. GNP is deficient as a measure of economic welfare because it ignores increased leisure time. Leisure is valuable to each of us. The amount of effort going into the national product has been continuously decling which denotes an increase in economic welfare, even though it is not reflected by income measures. If we include the gain in leisure time, welfare has been rising faster than the output figures indicate.

GNP and Transport Costs: Some of the components of national output as measured in official figures represent costs rather than benefits. Consider some of the costs of transport. Many workers, especially in the big urban areas, incur very considerable costs motoring, bus, train in travelling regularly between home and work. In logic, what they pay for this transport might best be regarded as a cost of producing whatever goods and services these workers help to provide. However, in the national accounts the cost of such travel is treated as a consumption expenditure, which is assumed to constitute part of living standards. But does it add to satisfaction? On the contrary, it is a time-consuming nuisance. The more money one spends in this way, the worse of one is.

Professor Simon Kuznetss of Harvard, a Nobel prize winner in economics and a leading authority on national income, argues that many things which we count as part of national output should be considered *costs rather than products*. The costs involved in sustaining enormous metropolitan areas-travel costs to and with the area, subway systems, police protection, and other overhead expenses-should be deducted from national output. Similarly, Kuznets maintains that national defence costs should not be counted as part of national product. Since these types of expenses have been increasing with disproportionate speed, we may not be getting better off as rapidly as the GNP totals suggests.

Non Market Production (the Household Economy): The GNP fails to count household production because it does not involve a market transaction. The household and child rearing services of housewives are excluded. The household economy consists of the whole of goods and services supplied by the household for its own use. The productive services of home-makers - cooking, laundering, house cleaning - are not included despite the fact that this constitutes a sizeable amount of productive activity. Important as do it yourself (DIY) production is in developed countries, it is much more important

in less developed countries. Thus, the comparison between income per head in a more developed country, and income per head in a typical less-developed country is apt to be biased and misleading. The more developed country standard of living is not as much higher than the less developed country standard of living as the national income figure would suggest. The omission of many non market productive activies makes comparisons overtime and between countries at various stages of market development less meaningful. Similarly, GNP comparisons overstate the output of developed countries in contrast to underdeveloped ones.

Production of 'bads' Production and consumption of some economic goods also have harmful side effects that detract from the total availability of goods. GNP does not count goods that were used up, destroyed, or diminished in value if there is not a market transaction. Junk, garbage, cancer created by consumption of cigarettes, deterioration of minds and bodies because of the consumption of harmful drugs and alcohol, air and water pollution-all of these "disproducts" associated with current consumption are excluded because they did not go through the market. These and other undesirable items are clear deductions from out total available goods and resources. Their total might be called the gross national 'disproducts'.

In order to balance the productive account properly, the in unaccounted for disproducts should be subtracted from the total product. NNP does make an allowance for the reduction in capital stock associated with this year's production. Current depletion of natural resources reduces our ability to produce future goods. But this is not considered in our national produce accounts- and neither is the reduction in the quality of air that we breathe nor the purity of our river waters.

Paradoxically, many of these "economic bads" will engender a higher GNP in the future. Cigarette smoking results in more cancer, thereby increasing GNP in the medical service sector; Crime results in the production of more police protection, household locks, legal services, and detention centre. All of these contribute to GNP. Air pollution results in increased purchases of air purifiers, house paint, and window washers. GNP rises even higher ! Water pollution results in greater cost of producing pure water. Automobile production and the move to suburban communities result in more congestion, which will eventually lead to the construction of more highways. GNP will leap forward again.

Production of many goods generated harmful side effects. Such production either reduces the availability of a current good (for example, clean air, good health, non-congested environment) or our ability to produce future goods (for example, depletion of natural resources). GNP does not count these negative side effects. Thus, it tends to overstate our "real output" of desired goods. Could we estimate gross national 'disproducts' / It would be difficult because there are no market prices to register the approximate value that we place on these "economic bads."

Thus, these days there is considerable disenchantment with mere material goods and services, and hence disenchantment with the GNP as a measure of economic welfare. Fortunately, modern economists can begin to adjust GNP numbers in order to get a more meaningful measure of economic growth in 'Net Economic Welfare' (NEW). Economics like Professors Nordhaus and Tobin tried to

calculate net economic welfare by adjusting GNP numbers for disamenities of modern urbanization (growing pollution, congestion etc) that escape costing and notice. This concept of NEW adds to GNP certain items (such as value of leisure and do it yourself services which included housewives services and subtracts from GNP unmet costs of pollution, other disamenities of modern urbanisation and costs incurred on meeting 'regrettable necessities. The term 'regrettable necessities' refers to expenditure on maintaining' law and order, defence, commuting from home to work etc. We should exclude from welfare-oriented measure of GNP the goods that we do not really need since they are just 'regrettable necessities'. The outcome of these calculations provides us with a measure of economic welfare, which is characterised as 'Net Economic Welfare' (NEW).

Net Economic Welfare =NNP-regrettable necessities + value of leisure time and non market activies.

This brings us to the final point that needs to be made about the relation between GNP and welfare. It has been argued above that GNP has never been regarded by economists as an indicator of welfare as a whole. Welfare obviously included innumerable factors, such as peace, tolerance, love or one's neighbour, family life, satisfaction in one's job or surroundings, justice and many other items that cannot be brought into relation with the measuring rod of money. GNP is far from being a perfect measure of economic welfare. But it does provide a total measure, up to a point, in a meaningful way, of very many of the items that do contribute to welfare and without which most people would consider themselves worse off. The concept of welfare is basically a subjective concept relating to how people feel, and this cannot be measurable in meaningful way. GNP provides an indicator of what society has available to promote certain aspects of welfare. It can choose to use it wisely or badly (Wilfred Beckerman). Because of the uses to which the GNP concept may be put there is no question of abandoning it in favour of some other concept that might be a better measure of welfare. The only serious issue is whether the conventional GNP concept can be supplemented by other measures, whcih might come closer to a measure economic welfare.

GNP estimates are more commonly employed as an indicator of economic welfare. An increased output of goods and services, it is believed, implies an increased availability of goods and services for consumption. Thus, enabling a wider choice and a better standard of living; these are the hallmarks of economic development.

However, this simple positive relationship between increase in GDP and increase in economic welfare is subject to certain qualifications. Among these, the following are noteworthy:

1) **Changes in the Size of GDP and Economic Welfare**

   i) If the GDP increases but the population of the country increases in a greater proportion, the total economic welfare will decline. As a result of increased population, the per capita income will decline, which means lesser purchasing power than before, lower standard of living, and consequently, lower economic welfare.

   ii) While analysing the relationship between the size of GDP and

economic welfare, the behaviour of the price movements must be thoroughly studied. GDP calculated at current prices is always deceptive and increase in its size will not promote economic welfare. Estimates of real GDP (i.e., GDP calculated at fixed base prices) can provide a better measure.

iii) GDP consists of those goods and services which are transacted in the market and fetch money value. We know that a part of the total produce is kept by the producers for self-consumption. Now, suppose that this retained produce (which is not part of GDP) is offered for sale in the market, it will definitely fetch money value and as a result GDP will also increase. In fact, the total output is same, but since it has now come to the monetary sector, it becomes a part of the GDP and hence increases its value. Such an increase in GDP will not increase the economic welfare.

iv) In case increase in the size of GDP is the result of prolonged working hours, increased employment of children in production, unhealthy and polluted atmosphere inside the factory premises, such an increase in GDP will not promote economic welfare.

2) **Changes in the Composition of GDP and Economic Welfare**

Composition of GDP refers to the kinds of goods and services produced in an economy. Changes in the composition of GDP may sometimes increase economic welfare and may at other times decrease it. Let us consider the following cases:

i) If the total production has increased on account of more production of capital goods, it will not increase economic welfare. No doubt the money value of the total output has increased, but the volume of consumer goods, on which depends the real economic welfare, has not increased. It is only when the proportion of consumer goods increases in the total output the GDP can promote economic welfare.

ii) If the GDP has increased on account of larger production of war-goods, the resultant increase will not increase economic welfare. This may no doubt head to increased fighting capacity of the country but it will do no good to economic welfare.

3) **Changes in the Distribution of GDP and Economic Welfare**

If the GDP increases and yet if it is not fairly distributed or it is concentrated in a fewer hands, it will not promote economic welfare. It is so because as the rich people get richer the additional money income does not provide them the same marginal utility as the preceding unit of money income. In other words, the law of diminishing marginal utility also applies to the additional money income so that the economic welfare instead of increasing will diminish.

When the distribution of GDP changes in favour of the poor, they start getting more commodities and services than before, as a result the economic welfare increases. Any transfer of income from the rich to the poor, generally, promotes economic welfare. In fact, there is a unique relationship between one's economic welfare and that part of his income

which he spends on consumption and consequently smaller is his economic welfare compared to this total income. The poor people who spend a major proportion of their total income on consumption, as a matter of fact, will get more utility from the transferred income as compared to the rich people.

Transfer of income from the rich to the poor, however, does not increase economic welfare always, especially if additional income in the hands of the poor gets frittered away on such things as simply reduce his welfare.

Check Your Progress 1

1) What do you understand by economic welfare? Why is GDP a poor measure of economic welfare?

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2) In what way do the composition of GDP and the distribution of GDP affect welfare?

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21.3 PER CAPITA INCOME AS AN INDEX OF ECONOMIC WELFARE

Ordinarily speaking, per capita income is considered as an indicator of the standard of living in a country; any improvement in it is taken as a proxy for improvement in the standard of living.

True, but there are certain limitations beyond which we cannot rely on this single average.

One, per capita income is a simple average which is derived by dividing the income of all the nationals of a country. It shows only the size of slice from the national cake that should by going to each individual. It cannot tell us anything about the actual distribution. In other words, per capita income estimates are silent about the distribution of income. To that extent, per capita income estimates may not be very useful, especially if there is a highly skewed income distribution favouring the rich in an economy.

Two, per capita income estimates are also silent about the composition of output - the nature of goods and services produced in the economy.

Three, standard of living is also affected by the type of expenditure incurred by the government authorities. If the government meets the collective wants of education, public health, public transportation, safe drinking water, etc., the

people may enjoy a higher standard of living, even with modest per capita income.

Four, for the purpose of international comparison, per capita income estimates are framed in a common monetary denominator, usually the American Dollar. This common denominator cannot take account of purchasing power differences in different countries.

Economists have been trying to identify alternative measures of economic development which should reflect in a true manner the changes in the standard of living.

Poverty Weighted Index of Social Welfare

The use of GNP as a method of comparing welfare or as a method of comparing the development performance of different countries can be misleading. This is especially so when different countries have varied distributions of income.

This can be illustrated with the help of Table 12.2

Table 12.2: Typical Distribution of Personal Incomes in a Developing Country by Income Shares - Quintiles and Deciles

Individuals	Personal Income (Money Units)	Percentage Share in Total Income	
		Quintiles	Deciles
1	0.8		1.8
2	1.0		
3	1.4		3.2
4	1.8	5	
5	1.9		3.9
6	2.0		
7	2.4		5.1
8	2.7	9	
9	2.8		5.8
10	3.0		
11	3.4		7.2
12	3.8	13	
13	4.2		9.0
14	4.8		
15	5.9		13.0
16	7.1	22	
17	10.5		22.5
18	12.0		
19	13.5		28.5
20	15.0	51	
TOTAL (National Income)	**100.0**	**100**	**100.00**

In Table 12.2, 20 individuals represent the entire population of a country and are arranged in ascending order of annual personal income, ranging from the lowest of 0.8 units to the highest 15.0 units.

The population is grouped into quintiles of four individuals each. The first quintile represents the bottom 20% of the population on the income scale. This group of individuals receives only 5 per cent of the national income; the second quintile receives 9 per cent, and so on.

The rate of income growth in each quintile is a measure of economic welfare growth of that class. The total welfare of society is measured as the simple weighted sum of the growth of income in each class and is expressed as under:

$$G = w_1g_1 + w_2g_2 + w_3g_3 + w_4g_4 + w_5g_5 \quad \ldots(1)$$

Where,

G = weighted index growth of social welfare

g_i = (i = 1, 2, 3, 4, 5) is growth rate of the *i*th quintile

w_i = (i = 1, 2, 3, 4, 5) is the welfare weight of the *i*th quintile

On the basis of the given weights, equation (1) can be used to measure weighted index of social welfare as under:

$$G = 0.05g_1 + 0.09g_2 + 0.15g_3 + 0.22g_4 + 0.51g_5 \quad \ldots(2)$$

Now, suppose that income growth rate of bottom 60 per cent of population is zero (i.e., $g_1 = g_2 + g_3 = 0$) while that of top 40% is 10% (i.e., $g_4 + g_5 = 0.10$). The equation (2) can be written as

$$G = 0.05(0) + 0.09(0) + 0.13(0) + 0.22(0.10) + 0.51(0.10)$$

$$= 0 + 0 + 0 + 0.022 + 0.051 = 0.075 \quad \ldots(3)$$

It means that the GNP would rise by 7.3% even if there is zero change in the incomes of the 60 per cent population at the bottom of the income ladder.

To remove this anomaly and to make GNP estimates a better representative of the society's welfare, an alternative measure based on equal weights or poverty-weighted index has been evolved.

1) **Equal-Weights Index** assigns equal weights to growth of income in each income class. All people are treated equally. We can illustrate the working of this index with the help of data presented in Table 12.2 above.

   The economy has been divided into quintiles; equal-weight index would give a weight of 0.2 to the growth in income in each quintile using equal-weight index in our example of 10% income growth of the top two quintiles with bottom three quintiles showing no change, we would have

   $$G = 0.20g_1 + 0.20g_2 + 0.20g_3 + 0.20g_4 + 0.20g_5 \quad \ldots(4)$$

   Substituting the values of g*i* in equation (4), we get

   $$G = 0.20(0) + 0.20(0) + 0.20(0) + 0.20(0.10) + 0.20(0.10)$$

   $$= 0 + 0 + 0 + 0.20 + 0.20 = 0.04 \quad \ldots(5)$$

The equal-weight index shows that social welfare has increased by 4% as compared to 7.3% increase shown earlier.

2) **Poverty-Weight Index** involves the use of 'subjective' social values in income growth rtes of only the bottom 40%. In other words, we might arbitrarily place a welfare weight on w_1 of 0.60 and on w_2 of 0.40 while giving zero weights to w_3, w_4 and w_5.

In this situation, the social welfare index for the country can be calculated as follows:

$$G = w_1g_1 + w_2g_2 + w_3g_3 + w_4g_4 + w_5g_5$$

$$= 0.60g_1 + 0.40g_2 + 0g_3 + 0g_4 + 0g_5$$

$$= (0.60)(0) + (0.40)(0) + (0)(0) + (0)(0.10) + (0)(0.10)$$

$$= 0$$

The use of poverty-weighted index shows that there is no improvement in the social well-being of the bottom 40% of the population. The GNP growth records 7.3% improvement in the social welfare.

In short, a useful summary of the degree to which economic growth is based towards relative improvement of high-income or low-income groups is the positive or negative divergence between a weighted social welfare index and the actual growth rate of GNP.

UNRISD's Core Indicators of Development

One of the early studies on the first group of composite indicators was carried out by the United Nations Research Institute on Social Development (UNRISD) in 1970. The study was concerned with the selection of the most appropriate indicators of development and an analysis of the relationship between these indicators at different levels of development. The result was the construction of a composite social development index. Originally, 73 indicators were examined. However, only 16 indicators (9 social indicators and 7 economic indicators) were ultimately chosen of **Socio-economic Development Provided by the United Nations Research Institute of Social Development (UNRISD)**

Expectations of Life at Birth
Percentage of Population in location of 20,000 and over
Consumption of animal protein, per capita, per day
Combined primary and secondary enrolment
Vocational enrolment ratio
Average number of persons per room
Newspaper circulation per 1000 population
Percentage of economically active population with electricity, gas, water, etc.
Agricultural production per male agricultural worker
Percentage of adult male labour in agriculture
Electricity consumption, kilowatt per capita
Steel consumption, kg per capita
Energy consumption, kg of coal equivalent per capita
Percentage GDP derived from manufacturing
Foreign trade per capita, in 1960 U.S. Dollars
Percentage of salaried and wage earners to total economically active population

These indicators were selected on the basis of their high inter-correlation to form a development index using weights derived from the various degrees of correlation. The development index was found to correlate more highly with individual social and economic indicators than per capita GNP correlated with the same indicators. Rankings of some countries under the development index differed from per capita GNP rankings. It was also found that the development index was more highly correlated with per capita GNP for developed countries than for the developing countries. The study concluded that social development occurred at a more rapid pace than economic development up to a level of $ 500 per capita income (1960 prices)

Another study that sought to measure development in terms of a pattern of interaction among social, economic and political factor was conducted by Irma Adelman and Cynthia Morris, who classified 74 countries according to 40 different variables relating to these aspects. Factor analysis was used to examine the interdependence between social and political variables and the level of economic development to arrive at a measuring yardstick. The researchers found numerous correlations between key variables and economic development.

This approach of factor analysis is based on an underlying normative assumption that there is a unique path of development. The performance of the developing countries is, therefore, sought to be judged in terms of the path traced by the developed countries. There seems to be no logical or historical justification for this assumption. Furthermore, there is usually an emphasis on measuring inputs, such as the number of doctors or hospital beds per 1000 population or enrolment rates in primary schools to measure health and education, when outputs, such as life expectancy and literacy, and the actual objectives of development. This would not be a fallacy if the underlying "production function" transforms all 'inputs' into 'outputs'.

Check Your Progress 2

1) What are the limitations that make the per-capita income only a measure of the standard of living of a country's people and not of their economic welfare?

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2) Briefly explain the concept of poverty-weighted index of social welfare.

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21.4 LET US SUM UP

In this unit, we have taken a look at the relationship between economic welfare and national income accounts. Throughout this course, you have read that the national income of a nation is a measure of the total value added that is generated

in a year in that country. We would expect that the creation of value, which increases the GDP of the country, would contribute to the welfare of the inhabitants of the country. But is it always the case? An increase in GDP implies economic growth, but is economic growth synonymous with economic welfare?

The unit discussed in detail the relationship of GDP and economic welfare. We initially looked at the concept of economic welfare and then saw how well GDP captures this concept. We understood that not only does the GDP have its limitations as a measure of welfare, but also that apart from the magnitude of the GDP we have to look at the composition of the GDP as also its distribution. A very skewed distribution of the GDP does not promote welfare; nor does a situation where a large part of the GDP is composed of inessential items or items that do not promote the well being of the people, like defence equipment. The unit next looked at the per capita income as a measure of economic welfare. Per capita income denotes the average level of income per person in the country, and hence one would expect it to be a better indicator of welfare than the GDP itself. However, even the per capita income has its limitations and is only a reasonably good indicator of the standard of living of a country. The unit then looked at weighted measures of per capita income, like poverty weighted measures of per capita measures. Finally, the unit described some core indicators of development developed by the United Nations Research Institute of Social Development.

21.5 KEY WORDS

Bads : Goods that give disutility, like pollution. The more of such goods are consumed, the greater the disutility. Some goods can become bads after a point, like medicines.

Welfare : A measure of the well-being of a people.

Per Capita Income : Total GDP or GNP of a country divided by the population of that country.

21.6 SOME USEFUL BOOKS

Beckerman, Wilfred (1968) : *An Introduction to National Income Analysis* Weidenfield and Nicolson, London.

Samuetson, Paul A and Nordhans (1999), *Economics*, McGraw-Hill, Singapore.

21.7 ANSWERS OR HINTS TO CHECK YOUR PROGRESS EXERCISES

Check Your Progress 1

1) See section 21.2

2) See section 21.2

Check Your Progress 2

1) See section 21.3

2) See section 21.3

UNIT 22 ALTERNATIVE RECENT INDICATORS OF SOCIAL DEVELOPMENT

Structure

22.0 OBJECTIVES

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

- define the concept of social welfare;
- explain the need for alternative indicators of social welfare;
- describe the ideas behind New Economic Welfare and Physical Quality of Life Index measures;
- discuss the concept and meaning of human development and the evolution and measurement of the Human Development Index; and
- explain some recently developed indices about human welfare such as the Gender Development Index, the Gender Empowerment Measure and the Capability Poverty Measure.

22.1 INTRODUCTION

Economists have for long used, and continue to use, real gross domestic product (or its derivative national income) as an indicator of economic welfare. An increase in GDP implies availability of more goods and services of value, and to that extent the material welfare of the economy increases. Social development is something more than the material or economic welfare. GDP estimates fail to capture these and hence there is a need for alternative indicators of social development. This unit describes various measures of economic social and human development indicators that have been evolved in recent years in response to the perceived limitations of national income accounts in capturing the welfare of the people.

The unit carefully explains the concept of social development and how it is related to the concept of economic development. We see that social development and social welfare are related to the broader area of human development. The unit then goes on to discuss, one by one, several indices of welfare and development usually in terms of the time in which they were proposed.

22.2 CONCEPT OF SOCIAL DEVELOPMENT

What is social development? What is its relation to economic welfare? Why indicators of economic welfare are not sufficient indicators of social development? These and a few other questions come to our mind. Let us try to answer them.

22.2.1 Meaning of Social Development

Social development can more easily be defined as a process whereby society matures and advances from one stage to another. As a society matures, standard of living of its people, specially those at the bottom-end of the ladder, shows distinct sign of improvement, reflected in increasing consumption of more and new products. The weaker sections of the society, especially the women, gain empowerment, i.e., they gain access to services and facilities that they have been hitherto denied.: education, health, safe drinking water, sanitation, sewerage, job opportunities etc.

In the process of maturity and advancement, availability of more goods and services, i.e. increase in GDP, is an essential condition. Without an increase in availability of more goods and services, no society can lay claim to advancement. But an increase in GDP may be only a necessary condition; it may not be sufficient condition. Social development requires much more than that: trickle down of income to lower segments, spread of literacy, health services, job opportunities, better environment conditions etc.

22.2.2 Need for Alternative Indicators of Social Development

Need for alternative indicators of social development arises basically because GDP estimates fail to take into account different aspects of social life other than the economic aspect. These suffer from the following limitations:

1) GDP estimates are based only on the output of goods and services.

2) These are not concerned with the quality of goods and services produced.

3) GDP estimates are not affected by how the produced goods and services, and income generated thereby, get distributed among different sections of the society.

4) These do not reckon with distribution of factor and non-factor inputs among varied end users.

5) These fail to take into account the non-material costs inflicted on society during the process of production of material goods.

Because of the above limitations, the economists, and other social scientists have been making efforts to develop some alternative indicators of social development.

22.2.3 Alternative Indicators of Social Development

Over the last few years, as a result of sustained efforts by the economists and social scientists a few alternative indicators of social development have been evolved.

The process of evolution is an on-going activity. Some of the important indicators are as follows:

1) Net Economic Welfare;
2) Physical Quality of Life Index;
3) Human Development Index;
4) Gender-related Development Index;
5) Gender Empowerment Measure;
6) Capability Poverty Measure;
7) Human Poverty Index, etc.

Check Your Progress 1

1) Explain the concept of social development.

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2) Trace the relationship between growth in GDP and social development.

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3) Mention five limitations of GDP as an indicator of social development.

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22.3 NET ECONOMIC WELFARE (NEW)

Paul A. Samuelson and William D. Nordhaus formulated an alternative measure of social development and called it Net Economic Welfare (NEW)

22.3.1 Concept of NEW

NEW is based upon GNP but makes two major changes:

1) GNP includes many components that make no obvious contribution to individual well being. NEW excludes them.

2) Some key satisfaction producing consumption items are omitted from GNP. NEW includes them.

Thus a few components are included in GNP and a few exclude, to compute NEW.

1) **Items to be Added to GNP:** The Imortant items to be added to GNP are as follows:

   i) **Value of Leisure Time:** If at a higher level of income, a person begins to put lesser hours to work, and begins enjoy to more leisure, the value of the Psychic satisfaction of leisure generated thereby need to be added to the GNP.

   ii) **Do-it-yourself activities:** The value of the satisfaction generated by the performance of such activities need to be added to the GNP.

   iii) **The Underground Economy:** Underground activities are of two kinds (a) activities that are illegal (such as smuggling, extortion, etc.) and (b) activities that are legal but unrecorded for tax purposes. Illegal activities, by definition, are not included in national accounts. Legal activities, since they are not reported and no records are maintained, also escape the net of national output statisticians.

For the computation of NEW, the imputed values of such activities need be added to GNP.

2) **Items to be**

i) In the production of goods and services that add upto the national output, a large amount of intermediate goods supplied by the government are consumed up; these are not accounted for on the cost side. The value of such intermediate goods need be subtracted from the GNP.

ii) Adjustments for congestion of urban life. These take away some pleasure and happiness from urban living; These values need be deducted from the value of the GNP to arrive at NEW.

22.3.2 Results

Economists have made calculations of NEW and NNP (which is considered the most appropriate measure from the national income accounts) for a long period of time, from 1930 to 1990. These comparisons bring out that NEW grows more slowly than does NNP. This difference may be inevitable in a world that is becoming more congested and relies ever more heavily on large scale power plants and sophisticated organic chemicals.

22.4 PHYSICAL QUALITY OF LIFE INDEX (PQLI)

The Physical Quality of Life Index has been formulated by Morris D. Morris. It was published for the first time in 1979 as an alternative indicator of social development and has generated much interest since then.

22.4.1 Concept and Construction of PQLI

PQLI is a composite index of three indicators, viz., (i) life expectancy at age one; (ii) infant mortality; and (iii) literacy.

For each indicator, the performance of individual countries is rated on a scale of 1 to 100, where 1 is represents the “worst” performance by any country and 100 the “best” performance.

For life expectancy, the upper limit of 100 was assigned to 77 years (achieved by Sweden in 1973) and the lower limit of 1 was assigned to 28 years (the life expectancy of Guinea-Bissau in 1950). Within these limits, each country’s life expectancy figure is ranked from 1 to 100.

Similarly, for infant mortality, the upper limit was set at 9 per 1,000 (achieved by Sweden in 1973) and the lower limit at 229 per 1000 (Gabon 1950).

Literacy rates being measured as percentages of from 1 to 100, provide their own direct scale.

Once a country performance in life expectancy, infant mortality, and literacy has been rated on the scale of 1 to 100, the composite index (PQLI) for the country is calculated by averaging the three ratings, giving equal weight to each.

22.4.2 Results

Morris's study brought to light the following facts:

1) More generally, but not always, countries with low per capita GNPs, tended to have low PQLIs, and countries with high per capita GNPs, tend to have high PQLIs.

2) The correlations between GNP and PQLI were not substantially close. Some countries with high per capita GNPs had very low PQLI s

   - even below the average of the poorest countries.

Conversely, some countries with very low per capita GNP, had PQLIs, that were higher than the average for the upper-middle-income countries.

Table 22.1 below provides a sample of developing countries ranked both by per capita incomes and PQLIs in the early 1980s.

Table 22.1: A Comparison of Per Capita GNP and the PQLI for Selected Developing Countries

Country	Per Capita GDP ($)	PQLI
Gambia	348	20
Angola	790	21
Sudan	380	34
Pakistan	349	40
Saudi Arabia	12720	40
India	253	42
Iraq	3,000	48
Qatar	27,790	56
Tanzania	299	58
Zimbabwe	815	63
Brazil	2,214	72
China	304	75
Sri Lanka	302	82
Singapore	5,220	86
Taiwan	2,503	87
Costa Rica	1,476	89

The data seem to indicate that significant improvements in the basic quality of life can be achieved before there is any great rise in per capita GNP, or conversely that a higher level of per capita GNP is not a guarantee of a better quality of life.

22.4.3 Evaluation

PQLI appears to be free of the major problems associated with usng GNP as a measure of development**.**

i) It aims directly at incorporating welfare considerations through measuring the ends of development in terms of the quality of human life.

ii) PQLI also incorporates distributional considerations by using three indicators that reflect distirbutional characteristics in the sense that countries cannot achieve high national averages of life expectancy, infant mortality, and literacy unless the majorities of their population are receiving the benefits of progress in each of these areas.

iii) There is general agreement that improvements in these areas are an important part of development progress.

iv) Like GNP, the PQLI can be used to make inter-country comparison. It has the major advantage of being a simple measure with data being easily available.

However, the PQLI has also invited criticism:

i) It is limited a measure; It fails to incorporate many other social and psychological characteristics suggested by the term "quality of life"—security, justice, human rights and so on.

ii) A much more serious criticism is the lack of a rationale for giving equal weight to each of the indicators used in forming the index and the possibility that measures such as life expectancy and infant mortality are both reflecting similar phenomena.

Nevertheless, despite the limitations, the PQLI appears to be a useful indicator of development.

Check Your Progress 2

1) In what ways is NEW different than GNP?

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2) Briefly state the concept of PQLI?

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3) What type of relationship is found between GNP and PQLI?

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4) In what ways is the PQLI considered a better indicator than GNP?

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22.5 HUMAN DEVELOPMENT INDEX (HDI)

Human Development Index was presented for the first time in the Human Development Report published by the United Nations Development Programme (UNDP) in 1990.

22.5.1 Concept of HDI

The HDI attempts to capture as many aspects of human development as possible in one simple, composite index and to produce a ranking at human development achievements. The concept of human development is much deeper and richer than what can be captured in any composite index or even by a detailed set of statistical indicators. HDI attempts to simplify this complex reality.

The HDI is a composite index of achievements in basic human capabilities in three fundamental dimensions – a long and healthy life, knowledge and decent standard of living. Three variables have been chosen to represent these three dimensions: (i) life expectancy; (ii) educational attainment; and (iii) income.

22.5.2 Significance of HDI

The HDI value for each country indicates how far the country has to go to attain certain defined goals: an average life span of 85 years, access to education for all and a decent standard of living. The HDI reduces all three basic indicators to a common measuring rod by measuring achievements in each as the relative distance from the desirable goal. The maximum and minimum values for each variable are reduced to a scale between 0 and 1, with each country at some point on this scale.

The HDI shows the distance a country has to travel to reach the maximum possible of 1 and also allows inter-country comparisons. The difference between the maximum value of the HDI and the HDI value achieved by a country shows the country's shortfall in HDI. A challenge for every country is to find ways to reduce this shortfall.

22.5.3 Method of Construction of HDI

The HDI is based on three-indicators, (i) longevity as measured by life expectancy at birth; (ii) educational attainment, as measured by a combination of adult literacy (two-third weight) and combined primary secondary and tertiary enrolment ratios (one-third weight); and (iii) standard of living as measured by real GDP per capita PPP ($).

For the construction of the index, fixed minimum and maximum values have been established for each of these indicators:

- Life expectancy at birth: 25 years and 85 years.
- Adult literacy: 0% and 100%.
- Combined gross enrolment ratio: 0% and 100%.
- Real GDP per capita (PPP $): $ 100 and $ 40,000 (PPP $)

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

$$\text{Index} = \frac{\text{Actual Value} - \text{Minimum Value}}{\text{Maximum Value} - \text{Minimum Value}}$$

If, for example, the life expectancy at birth in a country is 65 years, then the index of life expectancy for this country would be

$$\frac{65-25}{85-25} = \frac{40}{60} = 0.667$$

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

$$\text{HDI} = \frac{\text{Life Expectancy Index + Education Attainment Index+ Adjusted Real GDP Per Capita}}{3}$$

Illustration

The construction of the HDI is illustrated with the help of data from India

Life Expectancy (Years)	**Adult Literacy Rate (%)**	**Combined Enrolment Ratio (%)**	**Real GDP Per Capita (PPP $)**
61.3	51.2	56	1,348

1) Life Expectancy Index $= \frac{61.3-25}{85-25} = 0.60$

2) Education Index $= \frac{\text{Adult Literacy Index + Combined Primary, Secondary and Territory Enrolment Index}}{3}$

Adult Literacy Index $= \frac{51.2-0}{100-0} = \frac{51.2}{100} = 0.512$

Combined Primary Secondary, and Tertiary Index $= \frac{56-0}{100-0} = \frac{56}{100} = 0.56$

Educational Index = $\frac{0.512+0.56}{3}=0.53$

3) Adjusted Real GDP Per Capita Index = $\frac{1348-100}{6154-100}=\frac{1338}{6054}=0.221$

$\therefore$ HDI = $\frac{0.60+0.51+0.221}{3}=0.446$

22.5.4 HDI Rankings for Different Countries

TOP TEN		BOTTOM TEN	
1	Canada	166	Mozambique
2	France	167	Guinea
3	Norway	168	Eritrea
4	USA	169	Burundi
5	Iceland	170	Ethiopia
6	Netherlands	171	Mali
7	Japan	172	Burkina Faso
8	Finland	173	Niger
9	New Zealand	174	Rwanda
10	Sudan	175	Sierra Leone

India: HDI: 0.446 Rank 138.

Results

The rankings of countries by their HDI value leads to the following conclusions:

1) Of the 175 countries for which the HDI has been calculated for the Human Development Report 1998, 64 are in the high human development category, 66 in the medium category and 45 in the low category. Thus, of the world's 5.6 billion people, 1.3 billion (22%) are in the high human category; 2.6 billion (45%) in the medium category and 1.8 billion (32%) in the low category.

2) The HDI ranking of different countries differs significantly from their ranking by real GDP per capita. It means that the countries can have similar income but different human development achievements – or similar HDIs but very different incomes.

22.5.5 Usefulness and Limitations of the Concept

i) The HDI provides an alternative to GNP, for assessing a country's standing in basic human development or its progress in human development over time. It does not displace economic measures but can serve as a simple composite complement to other measures like GNP.

ii) The HDI has been used in many countries to rank districts or region as a guide to identifying those most severely disadvantaged in terms of human development. Several countries have used the HDI as a planning tool.

iii) The HDI has been used especially when a researcher wants a composite measure of development. For such user, other indicators have sometimes been added to the HDI.

Limitations

The HDI has also invited serious criticism; these point out the limitations of HDI as an effective indicator of social development. Some of the questions raised can be briefly reviewed as follows:

i) Why only three indicators? Are these too many or too few?

ii) Are the variables (indicators) chosen to measure the development adequate? And for each dimension, are the associated variables too many or too few?

iii) Are the measures subject to measurement errors, and, if so, do such errors invalidate the results? A subsidiary question is how up to date are the data used to construct the index?

iv) Is the choice of the minimum and the maximum justifiable, or is it arbitrary? In any case, how robust is the measure to alternative maximum and minimum values?

v) Why choose equal weights? How sensitive is the measure to other weighting schemes?

It would be seen that most of the questions raised relate to the methodology of HDI. The UNDP is continuously engaged in the task of refinement of this methodology.

Check Your Progress 3

1) Explain in brief the concept of Human Development Index.

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2) State a few important uses of Human Development Index.

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3) State a few limitations of Human Development Index.

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22.6 GENDER RELATED DEVELOPMENT INDEX (GDI)

The Gender – Related Development Index (GDI) has also been introduced by the Human Development Report, published annually by the United Nations Development Programme. It was published for the first time in the year 1995.

22.6.1 Concept and Construction of GDI

The GDI measures achievements in the same dimensions and variables as the HDI does, but takes account of inequality in achievement between women and men. The greater the gender disparity in basic human development, the lower a country's GDI compared with its HDI. The GDI is simply the HDI discounted, or adjusted downwards, for general inequality.

The GDI uses the same variables as the HDI. The difference is that the GDI adjusts the average achievements of each country in life expectancy, educational attainment and income in accordance with the disparity in achievement between women and men

The GDI adjusts the maximum and minimum values for life expectancy to account for the fact that women tend to live longer, than men. For women the maximum value is 87.5 years and the minimum value is 27.5 years ; for men the corresponding values are 82.5 and 22.5 years.

Similarly, before income is indexed, the average adjusted real GDP per capita of each country is discounted on the basis of the disparity in the female and male shares of earned income in proportion to the female and male population shares.

The indices for life expectancy, educational attainment and income are added together with equal weight to derive the final GDI value.

GDI in Some Selected Countries

TOP TEN		BOTTOM TEN	
1	Canada	137	Chad
2	Norway	138	Gambia
3	Sweden	139	Mozambique
4	Iceland	140	Guinea
5	USA	141	Burundi
6	France	142	Ethiopia
7	Finland	143	Mali
8	New Zealand	144	Burkina Faso
9	Australia	145	Niger
10	Denmark	146	Sierra Leone

India: GDI: 0.419 Rank :118

22.6.2 Results

Several conclusions can be drawn from the GDI rankings.

*Firs*t, no society treats its women as well as its men. This is evident from the fact that the GDI value for every country is lower than its HDI value.

Second, gender inequality is strongly associated with human poverty. The four countries ranking lowest in the GDI also rank lowest in the human poverty index.(HPI).

Third, gender inequality is not always associated with income poverty.

Fourth, gender equality can be achieved across a range of culture and political ideologies.

22.7 GENDER EMPOWERMENT MEASURE (GEM)

The gender empowerment measure indicates whether women are able to actively participate in economic and political life. It focuses on participation, measuring gender inequality in key areas of economic and political participation and decision- making. It thus differs from the GDI, an indicator of gender inequality in basic capabilities.

22.7.1 Construction of GEM

The GEM is computed on the basis of three indices relating to:

1) Economic participation and decision-making;

2) Political participation and decision-making;

3) Power over economic resources.

To reflect economic participation and decision-making two variables are chosen: (a) women's and men's percentage shares of administrative and managerial positions, and (b) their percentage shares of professional and technical jobs. These are broad, loosely defined occupational categories. Because the relevant populations for each is different, a separate index for each is calculated and then the two are added together.

Women's and men's percentage shares of parliamentary seats is chosen to reflect political participation and decision making power.

An income variable is used to reflect power over economic resources. It is calculated in the same manner as for the GDI except that unadjusted rather than adjusted real GDP per capita is used. The maximum value for income is thus PPP $ 40,000 and the minimum PPP $ 100.

The three indices are added together to derive the real GEM value.

GEM in Selected Countries

TOP TEN		BOTTOM TEN	
1	Norway	85	Papua New Guinea
2	Sweden	86	India

3	Denmark	87	Sudan
4	Finland	88	Congo
5	New Zealand	89	Zaire
6	Canada	90	Central African Republic
7	USA	91	Solomon Islands
8	Austria	92	Pakistan
9	Germany	93	Togo
10	Netherlands	94	Mauritania

India: GEM 0.228. Rank 86.

22.7.2 Results

Several conclusions can be drawn from the GEM rankings:

1) Countries in the top order in GEM rankings are not only good at strengthening the basic capabilities of women, they have also opened many opportunities for them to participate in economic and political fields.

2) Some developing countries outperform much richer industrial countries in gender equality in polit.

22.8 CAPABILITY POVERTY MEASURE (CPM)

The UNDP in its Human Development Report 1996 introduced a new measure of social development and called it the Capability Poverty Measure (CPM).

The CPM focuses on human capabilities. It considers the lack of three basic capabilities. The *first* is the capability to be well-nourished and health—represented by the proportion of children under five years of age who are underweight. The *second* is the capability for healthy reproduction – proxied by the proportion of births unattended by trained health personnel. The *third* is the capability to be educated and knowledgeable – represented by female literacy.

The three measures are added together and divided by three to give a simple arithmetic mean. The lower this mean, the less the capability poverty.

In most of the countries in South Asia, capability poverty is more widespread than income poverty, for example, the HRD 1996 estimates 25.4 percent of the total population in India as poor by the income poverty index, whereas by CPM this has been estimated at 61.5 percent.

The lesson is simple: poverty cannot be eradicated merely by boosting income. It will also take a broad expansion of basic human capabilities and the productive use of these capabilities.

22.9 HUMAN POVERTY INDEX (HPI)

The UNDP further build upon the CPM and in its annual Human Development Report 1997 formulated the Human Poverty Index (HPI).

22.9.1 Concepts and Components

The HPI measures deprivation in basic human development in the same dimensions as the HDI – longevity, knowledge and a decent living standard.

The first deprivation relates to survival – the vulnerability of death at a relatively early age – and is represented in the HPI by the percentage of people expected to die before age 40.

The second dimension relates to knowledge—being excluded from the world of reading and communication—and is measured by the percentage of adults who are illiterate.

The third aspect relates to a decent standard of living, in particular, overall economic provisioning. This is represented by a composite of three variables—the percentage of people with access to health services and to safe water and the percentage of malnourished children under five.

A composite HPI is computed by taking a simple average of the three measures discussed above.

22.9.2 HPI-II

Introduced in the HRD 1998, the HPI II measures human poverty in industrial countries. Because human deprivation varies with the social and economic conditions of a community, this separate index has been devised for industrial countries, drawing on the greater availability of data. It focuses on deprivation in the same three dimensions as HPI-I and one additional one, social exclusion. The variables are the percentage of people likely to die before the age of 60, the percentage of people whose ability to read and write is far from adequate, proportion of people with disposable income of less than 50% of the median and the proportion of long-term unemployed (12 months or more).

22.10 OTHER INDICATORS OF SOCIAL DEVELOPMENT

22.10.1 Social Development Index (SDI)

The SDI was constructed by the United Nations Research Institute on Social Development (UNRISD) In 1970. The SDI incorporates 16 core indicators. These indicators were selected on the basis of their high intercorrelation to form a development index using weights derived from their various degrees of correlation.

The SDI was found to correlate more highly with individual social and economic indicators than per capita GNP correlated with the same indicators.

22.10.2 International Human Suffering Index (IHSI)

This index was formulated by the Washington-based Population Crisis Committee and was published in 1987. The index was created to measure, in a single figure, differences in living condition among countries. Each country index was compiled by adding 10 measures of human welfare related to economics, demography, health and governance.

22.10.3 Quintile Income and Quintile Growth

In a background paper for UNDP's Human Development Report, 1996, Kaushik Basu has argued that in evaluating human well being one should look at the per capita income of the poorest 20 percent (quintile income); and that one should assess progress by looking at the growth rate of per capita income of the poorest 20 percent (quintile growth). This move away from per capita income and growth to quintile income and quintile growth changes the ranking of societies drastically. In 1993 Switzerland with a per capita income of $ 35,760 was the richest country, followed by Japan with $ 31,490; then came Denmark, Norway and U.S. Once we turn to quintile income, Japan with $13,698 ranks first by an enormous margin. No other country exceeds $ 10,000; the U.S. drops to 12th position.

22.10.4 Genuine Progress Indicators (GPI)

A San Francisco based group called *Redefining Progress* has evolved the concept of "Genuine Progress Indicators". It takes into account various social and ecological factors. According to this criteria the U.S. economy shows a steady decline since the seventies. Similarly, in U.K., Germany and Austria also, although GDP per capita has gone up, GPI per capita has fallen. In other words, as material wealth has gone up, relational wealth has gone down. People in fact are worse off.

22.10.5 Green Index

The World Bank's environmentally Sustainable Division has developed what has come to be known as "Green Index". Green Index measures a nation's *wealth* by using a new system of measurement, as contrasted to the prevalent system which measures wealth according to the GNP per capita. The new system attaches a dollar value to each of the three components, viz (i) produced assets, (ii) natural resources, and (iii) human resources. It puts a price tag on produced assets, the sum of all machinery, factories, roads and other infrastructure. It assigns an economic value to land, water, timber, minerals and all other natural resources. It looks at the human resources available, the education level, and the range of skills. It then calculates the true estimates of a country's wealth, taking into account all such resources which do not always show up on traditional economic indicators.

Check Your Progress 4

1) How is GDI different from HDI?

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2) What conclusion can we derive from the country rankings on GEM?

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3) Explain in brief the concept of Human Poverty Index?

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22.11 LET US SUM UP

The problems associated with using per capita GNP as a measure of development are well known. Among the major objectives of this measure are the failure to indicate non-marketed (and, therefore, non-priced) subsistence production, and to incorporate welfare and income distribution considerations. As a result there have been numerous efforts both to remedy its defects and to create other composite indicators that could serve as complements or alternatives to this traditional measure. Some of these indicators measure development in terms of the quality of life, whereas the others seek to measure development in terms of interaction among social, economic and political factors.

22.12 KEY WORDS

Social Development : A process whereby a society matures and advances from one stage to another.

Human Development : A process of widening people's choices and the level of well-being they achieve.

Human Development Index : Measures the average achievements in a country in three basic dimensions of human development-longevity, knowledge and standard of living.

Human Poverty Index : Measures deprivation in basic human development in the same dimensions as the HDI.

Gender–Related Development Index : Measures achievements in the same dimensions and variables as the HDI does, but takes account of inequality in the achievements between women and men.

Gender Empowerment Measure : Indicates whether women are able to actively participate in economic and political life.

Quintile Income : Per capita income of the poorest twenty per cent.

Quintile Growth : Growth rate of the per capita income of the present income of the poorest twenty per cent.

22.13 SOME USEFUL BOOKS

UNDP: (2005) Human Development Report (Annual) Oxford University Press.

I. C. Dhingra, *(2005) : Indian Economic Environment*, Sultan Chand & Sons, New Delhi.

Paul A. Samuelson and William D. Nordhaus : *Economics (Sixteenth Edition).*

22.14 ANSWERS OR HINTS TO CHECK YOUR PROGRESS EXERCISES

Check Your Progress 1

1) See section 22.2 and explain the meaning of social development

2) See section 22.2.2

3) See section 22.2.3

Check Your Progress 2

1) See sub-section 22.3.1

2) See section 22.4

3) See sub-section 22.4.2

4) See sub-section 22.4.3

Check Your Progress 3

1) See sub-section 22.5.1

2) See sub-section 22.5.5

3) See sub-section 22.5.5

Check Your Progress 4

1) See section 22.6

2) See section 22.7

3) See section 22.9

UNIT 23 NATIONAL ACCOUNTS AND THE ENVIRONMENT

Structure

23.0 OBJECTIVES

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

- explain the relationship between environmental protection and pollution;
- describe the concept of environmental defensive expenditure and its various components;
- list the environmental physical indicators;
- distinguish between internal and external cleansing services;
- classify environmental production services in different groups; and
- discuss the objectives of environment accounting system.

23.1 INTRODUCTION

Environment protection and pollution control go hand in hand. It is the pollution in different forms which affect the environment and make living hazardous.

One of the major worries today particularly in the urban areas is the problem of pollution. The problem has become so acute that at the directive of the Supreme Court the automobile industry has been forced to follow strict exhaust emission norms. The principle of sustainable development has directed efforts towards ensuring clean air, pollution control, water protection, noise abatement, waste management etc. All this requires extensive organizational management and services of environmental scientists. Environmental science covers resource management - particularly forests, water and wildlife, industry and social sciences.

One of the most important resources that help sustain life on earth is forests. Therefore, proper maintenance and management of forests and wildlife within forest is of vital importance for pollution control. The work involves protecting the forests and waste lands, preventing deforestation and encouraging afforestation, apply engineering principles to control land, minimise environmental hazards particularly those causing, water, air and soil pollution of surrounding areas and treatment and elimination of toxic and polluting wastes.

23.2 NEED FOR ENVIRONMENTAL DATA

It is estimated that by the turn of the century air pollution from large-scale industries would go up nine times, waste discharge four times, and hazardous waste 14 times. It is also known that the pressure of demand for natural and environmental resources has increased enormously in the recent decades, due to economic growth and larger population. While the scarcity of natural resources like oil has been recognised since quite some time back, it is only recently that environmental resources like air and water are being considered to be economic goods. A shortage in near future may be a realistic possibility, and this worry is of course at the root of the proposals to spend significant amount of resources to collect data about the environment. The willingness to collect data however is not enough, the absence of market prices for environmental resources like air and water implies that it is difficult to integrate data on physical assets with data on standard economic activities.

In the sphere of the problems of ecologically sustainable development, environmental *defensive expenditures* may be defined as expenditures due to qualitative degradation of the environment caused by the economic activities and the expenditures aimed at improving the use of natural resources. Thus, environmental defensive expenditure would include (a) costs of management and protection of the environment (preventive and restorative actions); (b) expenses sustained to avoid the consequences of environmental degradation, (c) expenditures sustained to compensate for the consequences of the environmental degradation.

It will be desirable to identify which natural resources and pollutants are the most important, to gather data on them and finally to create a data bank containing information on the physical, quantitative and qualitative nature of

stocks and flows. This would enable the monitoring of the most significant elements of the economy/environment relationship. This quantitative data, organised in satellite accounts, could be successively integrated into the framework of the national accounts using separate items which illustrate how the natural resources are used in the economic system and the efficiency of the defensive expenditures in terms of pollution abatement. By organising the data into satellite accounts, the traditional structure of the national accounts could be maintained, and the quantitative base necessary for eventual modifications of these aggregates could be developed.

23.3 PRODUCTION ACTIVITIES AND ENVIRONMENTAL ISSUES

23.3.1 Effect of Production Activities on Environment

In recent years, as a result of new legislation and greater social awareness about the ecological damage caused by production and polluting products, increasing, firms have been paying increasing attention to environmental issues. In an effort to meet the challenge of managing the environment strategically, firms have adopted new tools designed for the quantitative and qualitative analysis of the environmental impact of their activities. In fact, the relation between firms and natural resources is characterised by the modifications that productive activities cause to ecosystems, not only at the local level, but also over vast geographical areas.

Before production starts, firms acquire intermediate consumption goods, both through the extraction of raw materials from their natural site (extraction of mineral resources, forest use and fishing) and through purchase of marketed goods produced by other firms, thus reducing, directly or indirectly, the stock of the natural resources.

During the productive process, various polluting by-products (such as atmospheric emissions, waste water, solid waste and noise) are discharged into the environment.

But the global environmental impact of firms' activities does not only depend on the physical characteristics of the product, the type of production process used and the level of activity. Firms may also adopt appropriate strategies to manage or reduce this impact or to protect the natural environment. These efforts can be measured in monetary terms in order to evaluate the costs associated with activities specifically devoted to environmental management and protection. These activities include depuration of gaseous emission, industrial water purification, appropriate waste disposal and the use of less polluting inputs and production techniques.

23.3.2 Environmental Problems

Environmental themes can be used as an inventory framework of current environmental issues. The environmental themes lead to a limited number of physical environmental indicators:

i) A decreasing concentration of ozone in stratosphere leads to a higher exposure to UV-B radiation which may have negative effects on human health and ecosystems.

ii) Extensive deposition of acid substances leads to changes in the composition of soil and surface waters. This process is likely to cause major damage to ecosystems, buildings and crops.

iii) The accumulation and removal of waste is a major environmental problem and needs to be tackled.

iv) Finally, the net change in the combined proven oil and gas reserves during the reference year is reflected in the last indicator. The balance of extraction and all other changes in proven reserves determines this change.

Most of the environmental themes allocate pollutants to certain environmental problems and are therefore an empirical reflection of highly complex cause - effect relationship in the environment. Many environmental losses are the result of a combination of different types of environmental stresses. The actual environmental effects caused by the single environmental theme are in general difficult to measure. An objective determination of the relative seriousness of a particular environmental theme is even more troublesome. Social preferences are crucial in this respect.

23.3.3 Environmental Cleansing Services

Environmental cleansing services can be distinguished under two different categories: external and internal environmental cleansing.

External cleansing services are sold to other activity units as intermediate consumption or to government or households as final consumption. These services are considered as production in national accounts. Collection and incineration of waste by cleansing companies is an example of external cleansing services. The same establishment that uses this service within its own production process produces internal environmental cleansing services. Internal environmental cleansing services are produced by the same establishment that uses this service within its own production process. These are therefore often not explicitly identifiable either as production or as intermediate consumption. If these are to be explicitly shown then both production and intermediate consumption will become higher but net domestic production and other related aggregates remain unchanged. Examples of household expenditure for pollution control is, say, extra costs of cars fitted with catalytic converters for protection of environment .

23.3.4 Measurement of Bad Effects on Environment

The environmental protection services could be classified under:

1) waste disposal;

2) water purification and protection;

3) noise abatement; and

4) preservation of air quality.

Other general examples which can be cited are, for example, a decreasing concentration of ozone in the atmosphere leading to higher exposure to UV-B radiation which may have negative effects on human health and ecosystems.

Similarly, extensive deposition of acid substances would lead to changes in the composition of soil and surface water resulting in major damage to ecosystems, buildings and crops. The accumulation and removal of waste is another major environmental problem which demands constant attention. The measurement and quantification of such environment related themes is not easy. One could, for example, consider indicators like emission of greenhouse gases, depletion of ozone layers, acidification and collection of amount of waste.

The environmental cleansing and pollution prevention expenditures are incurred by government, households and branches of industry. Environmental cleansing services would normally be incurred by the government while types of such expenditures incurred by the households or branches of industry have already been exemplified above. Possible ways in which environmental degradation may increase are diversion of land from forest to farming and a change in levels of fertilizer and pesticide use.

The environment gives rise to many external effects. For example, pollution and nuisances created by producers may have negative effects on final consumers. These negative effects might be estimated and recorded as negative transfers from producers to households. In order to balance these negative transfers, one possibility might be to introduce a concept of production of externalities which would result in an output of negative or positive services and the corresponding final consumption.

One has also to consider the degradation of environmental quality and consequential effects on human health and welfare and quantify the damage.

23.3.5 Data Collection Categories

The date collection and measurement would get classified as under:

a) description of changes in environmental quality;

b) description of human activity and its influence on environmental quality, with particular reference to:

   i) use of renewable and non-renewable resources;

   ii) land cover and land use;

   iii) pollution from emissions.

c) Description of the response to environmental damage and risks, evaluation of expected costs and benefits, description of the performance of environmental policy, with particular reference to:

   - conservation and substitution of natural resources;
   - modifications to production processes and changes in consumption;
   - direct or indirect (clean technologies) prevention and reduction of emissions and pollution;
   - conservation and protection of nature, land, flora and fauna;
   - statistics on expenditures for environmental protection;

- statistics related to the management of waste and dangerous substances;
- statistics on water quality and management.

d) Linking statistics on transport with environmental statistics including the transport of goods and hazardous waste;

e) Linking energy statistics with environmental statistics;

f) Integrating environmental statistics;

g) Integrating environmental statistics into agricultural and forestry surveys;

h) Linking environmental statistics with statistical data related to other sectors by means of a geographical information system.

Check Your Progress 1

1) Explain briefly the effects of production activities on environment.

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2) Distinguish between internal and external environmental cleansing services.

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3) Name the four categories of environmental protection services.

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23.4 ENVIRONMENT AND ACCOUNTS

23.4.1 Topics in Environmental Accounting

The main objective of environment accounting system is to present, in a satellite type of accounting system, the aggregate expenditure for the management and protection of the environment in the national territory and the main components of this aggregate. The system should provide for a link between monetary aggregates and quantitative data expressed in physical units on the management and state of the environment.

A set of standardised accounts forms the basis of the system. The topics relevant from the point of view of environmental accounting are:

a) **Statistics of Waste**

This would include quantity of production of waste, expenditure and investment for collection and treatment of waste, its recycling and reuse by types of materials; disposal of waste after location of its site and capacity of the plants available for waste disposal by methods of disposal if possible, the details of transport of hazardous waste by site of loading and unloading and types of hazardous waste.

Further for collection of data and presentation of statistics on waste it will be desirable to classify by the list of organizations which manage waster disposal and identify the sectors which produce waste.

b) **Environment and Transportation**

The details of transportation will have to be collected under the heads of :

i) infrastructure;

ii) modes of transport;

iii) employment;

iv) traffic levels;

v) energy consumption and emissions;

vi) accidents, particularly those involving hazardous substances;

vii) costs and prices;

viii) other related information like noise, population's exposure to the same, expenditures required for noise reduction and taxes and subsidies levied to meet noise reduction costs.

c) **Environment and Energy**

The information should normally relate to emission of carbon dioxide from different categories of fuels i.e. liquid fuels and solid fuels. The carbon dioxide emission will have to be measured in terms of coefficients which have to be determined separately for each category of fuel.

d) **Environment and Industry**

With reference to environment in the context of industry, the following information which are of particular relevance will have to be collected:

1) impact of industrial activities on the environment;

2) use of natural resources and degradation of natural environment;

3) control of hazardous substances and prevention of industrial accidents;

4) development of economic instruments for environmental protection;

5) impact of environmental protection activities on job creation;

6) measurement of extent of emissions of air, water, soil and noise and pollutions;

7) measurement of industrial waste;

8) expenditure for environmental management and protection;

9) expenditure on management of renewable and non-renewable resources (water, energy);

10) eco-industries, eco-products and new technologies.

The annual surveys for the industrial sector should be modified to include questions on environmental issues. These should cover:

i) Distinction between internal expenditures and purchase of outside services with internal expenditures separated into investments and current expenditures.

ii) Physical data related to expenditures for measures such as `end-of-pipe' and 'integrated'.

iii) Data on financing represented by revenues linked to recycling and to the production originating from environmental protection measures.

iv) Physical data linked to environmental expenditures (emissions reduction, distinction between those obtained through "internal" expenditure and those obtained through "end-of pipe" measures).

v) Desegregation of physical data on emission (waste categories, interested environmental sectors).

vi) Quantitative measures of emissions in terms of absolute values, concentration values etc.

e) **Environment and Agriculture**

The influence of agricultural practices on environment will have to be measured in terms of flow of those materials which are required for raising livestock, manure, its use and its impact on environmental processes such as the soil, the air and the climate. Also, the impact of fertilisers and pesticides on environmental processes, non-renewable resources, soil, water and their ecosystems. For the latter, the impact of fertilizers is specially important.

23.4.2 Data Bank for Accounts

Having identified the different types of necessary environment related information necessary, it will be necessary to take stock of all the available data, elaborate their content and finally develop proposals for data collection and their collation.

There are some practical difficulties with the collection of data for firms and households. Unlike in the public sector where potential environmental adjustments are limited to some macro aggregates, in the private sector, a more detailed surveys on single firms are needed. In fact, the data collected directly from firms may not be very reliable since only a few firms have at their disposal an environmentally-adjusted balance sheet. In this case, the data obtained has to be supplemented by engineering estimates on pollution prevention and

monitoring activities. The collection of data on households' defensive expenditures presents even more difficulties, since households do not have a balance sheet per se and the classification of expenditures is more subjective and probably more unreliable. These difficulties can be overcome by using aggregate data.

23.4.3 Environmental Defensive Expenditures in Accounts

Environmental defensive expenditures are included in national accounting, even though some relevant parts of these expenditures remain hidden because of lack of clarity in the classifications used at the aggregate level. At the aggregate level, defensive expenditures are classified as intermediate consumption (expenditures sustained by firms).

In principle, in a framework of integrated economic and environmental accounting one should take into account the connection between environment defensive expenditures and those economic activities (production, consumption etc.) which, because of their environmental impact, create a demand for these expenditures.

However, in some important cases of environmental protection activities the process of identification is complex because the relevant activities and products appear only to a small extent in the central framework classifications.

The matter is further complicated by the fact that some establishments specialise in the production of environmental protection services for delivery to other units (e.g., waste disposal, sewage treatment or goods which are used for environmental protection (e.g. filters). Other direct only part of their activity to delivering such goods and services to third parties. Moreover, an important part of environmental protection activities is internal to establishments. They are ancillary activities in the central framework and have to be externalised if one wants to measure the environmental activities more broadly.

The overall measure of gross domestic product therefore will need to be adjusted for environmental protection costs. However, the problem of gross domestic product adjustment will have to be considered together with a definition of environmental pollution level and the state of the environment during the reference period. Without this definition it is impossible to determine whether the environmental protection expenditures would improve the quality of the environment or merely maintain the existing state. This adjustment to GDP is on the basis of the internal and external expenditures for environmental protection.

23.4.4 Relation between Natural Assets and Economic Activities

It is possible in environmental accounting to record the relations between natural assets and economic activities differently, by recording the depletion of subsoil or other natural resources and the degradation of natural assets. In these approaches the economic process itself is depicted differently, and complementary or alternative aggregate are calculated.

23.4.5 Framework of Environmental Accounts (Satellite Accounts)

The analysis of an important field such as environment may benefit from building a framework to accommodate elements which are included in the central accounts.

The central framework of the SNA presents a number of characteristics which give it the advantages of an integrated accounting structure. It is exhaustive and consistent within the boundary of the economic activities it covers; that is to say, each unit, transaction, product and purpose is given a place, and only one, in the classifications and accounts of the system. Moreover, the set of concepts adopted by the system is fully coherent.

The counterpart of these benefits is that there are certain limitations as to what may be accommodated directly in the central framework. The central framework may be used in a flexible way, in order to put greater or lesser emphasis on specific aspects of economic life. However, the margins of flexibility allowed by the central conceptual framework do not permit conflicting approaches to be covered simultaneously.

It becomes desirable therefore to consider the question of satellite accounts or systems which generally stress the need to expand the analytical capacity of national accounting for selected areas of social concern in a flexible manner, without overburdening or disrupting the central system. Satellite systems or accounts allow for the provision of additional information on particular social concerns of a functional or cross-sector nature.

Thus, the satellite accounts are not only linked with the central framework of national accounts and through them to the main body of integrated economic statistics but also because they are more specific to a given field or topic, they are linked to the information system specific to this field or topic.

Environmental accounting which is of such importance as to deserve special consideration needs to be presented in a SNA satellite accounting framework. However, in the case of environmental protection activities, the process of identification is complex, because the relevant activities and products appear only to a small extent in the central framework classifications.

23.4.6 Satellite Account and SNA

The relationship between the satellite account and the central framework of the SNA implies some rearrangement of central classifications and the introduction of complementary elements that differ from the conceptual central framework without drastically diverging from the concepts on which the central framework is built. They deal with accounts specific to the given field like environmental protection expenditures. Introducing their content into the central framework would overburden it and would not be totally possible, doing it in a specific satellite accounting framework allows additional margins of flexibility. Thus, the satellite accounts and analysis concentrates on one individual field to give a full picture of it, in a systematic way, by establishing a specific accounting framework articulated with the central framework. The measurement and presentation of details of environment, its conceptualisation, measurement through expenditure and similar other means like environmental

economic accounts are best expressed through satellite accounts. Satellite account in a given field covers the analysis of uses or benefits out of the national expenditure, production and its factors, transfers and other ways of financing the uses, both in value terms and, when relevant, in physical quantities.

Environmental protection expenditure is generally defined in terms of objectives pursued through actions and programmes related to its such s waste disposal preservation of air quality, protection of other natural media, public administration in environmental affairs etc.

Notwithstanding the difficulties, the effort to integrate the SNA-through satellite account-with the most relevant information about the environment is considered to be of increasingly crucial importance. In the future new environmental problems like climate change may require even more information than what is thought to be useful at present. Active intervention of government protection authorities can be possible only if they can rely on sufficient information on the state of environmental resources. An Economic Account thus become a crucial supporting instrument for any country aiming at preventing or reducing environmental damages caused by economic growth. Economic Account involves reclassification of environment related protective expenditures which would imply subtracting from GDP a few items which can be considered as a protection against the damages to the environment caused by production of goods and services. The argument in favour of such a correction is that the level of gross domestic product may overestimate welfare to the extent that some economic activity is carried out simply to undo the negative effects of other economic activities. The environmental accounting system should be an integrated accounting system aimed at representing the relevant economic, ecological and socio-cultural phenomena. The system should be linked to the national accounting system through the environmental satellite account. The environmental satellite accounts are intended to represent statistically the entire interrelationship between the economy and the environment.

23.4.7 Objectives of Environmental Accounting

The main objective of the economic environmental accounting system proposed by the United Nations Statistical office (UNSO), is the analysis of the interrelationship between the economy and the environment.

With regard to accounting in value terms, the following are of particular importance:

a) an analysis of the cost of protecting the environment, referring to both non-market activities (internal activities of environmental protection) and the goods and services bought in the market (external activities of environmental protection);

b) an analysis of other costs connected with environmental degradation (which, together with the costs of environmental protection, are defined as defensive expenditures); and

c) an analysis of the stocks and flows of renewable resources.

Environmental defensive expenditures are included in national accounting, even though some relevant parts of these expenditures remain hidden for a lack of clarity in the classifications used at the aggregate level. These

expenditures partly refer to the period when the expenditures were carried out (the accounting period) and partly to past and future periods (such as investment expenditures).

At the aggregate level, defensive expenditures are classified as intermediate consumption (expenditures sustained by firms), final consumption (private and public consumption), and investments.

In principle, in a framework of integrated economic and environmental accounting one should take into account the connection between environmental defensive expenditures and those economic activities (production, consumption etc.) which, because of their environmental impact, create a demand for these expenditures. Firms interact with natural environment in two distinct phases:

1) before production starts, firms acquire intermediate consumption goods, both through the extraction of raw materials from their natural site (extraction of mineral resources, forest use and fishing) and through the acquisition of marketed goods produced by other firms, thus reducing directly or indirectly the stock of natural resources .

2) during the productive process, various pollution by products (such as atmosphere emission, waste water, solid waste and noise0 are discharged into the environment.

But the global environmental impact of firms' activities does not only depend on the physical characteristics of the product, the type of production process used and the level of activity. Firms may also adopt appropriate strategies to manage or reduce this impact or to protect the natural environment. These efforts can be measured in monetary terms in order to evaluate the costs associated with activities specifically devoted to environmental management and protection. These activities include depuration of gaseous emissions, industrial water purification, appropriate waster disposal and the use of less polluting inputs and production.

23.4.8 Approaches to Environmental Accounting

There are three main approaches to environmental accounting, and they complement and overlap each other. The first one generally referred to as *natural resource accounting*, focuses on accounts in physical terms. The second approach, which is linked to national accounts and is in monetary terms, is generally called monetary satellite accounting. It identifies the actual expenditures on environmental protection and deals with the treatment of environmental cost of natural and other assets caused by production activities in the calculation of net product. *Monetary satellite accounting* is generally more limited in coverage of environmental concerns than physical resource accounting. The third approach is a welfare oriented one. It deals with the environmental effects borne by individuals and producers other than the production causing these effects. The latter effects may often be much larger than the cost caused and do not affect net product but rather net income through transfers of environmental services.

Environmental accounting to be comprehensive has to fully cover depletion. The EUROSTAT (the European Community Statistical System) is engaged in developing a satellite accounting type accounting and so are some of the other

countries. The system is designed in such a way as to allow for, whenever possible, a connection between the monetary aggregates and the quantitative data related to the management of and the state of the environment.

The OECD focuses on three main areas of research:

a) environmental adjustment of national accounts;

b) preparation of satellite accounts of the environment; and

c) construction of natural resource accounts and natural asset accounts to be linked with economic accounts.

Regarding the environmental adjustment of national accounts, the OECD maintains that the central core of the economic accounts should not be modified for both theoretical and practical reasons. Instead priority should be given to the development of satellite account of the environment and natural resource accounts.

Satellite accounts should register environmental protection expenditures and the market value of natural assets as well as provide an estimate for the environmental damage. Finally they should include physical data related to these monetary values. In this way satellite accounts can become the link between the central core of national accounts and the natural resource accounts.

Finally, attempts need to be made to integrate national accounts, environmental accounts and socio-demographic accounts in a single information system that also yields the core economic, social and environmental indicators for monitoring human development.

The role of environmental resources in the determination of level of welfare of a nation and of the quality of economic development need to be dealt with exhaustively. In fact, the environmental resources are a stock of capital goods, which have to be taken into account when calculating the consumption potential of an economic system in time. The use of the environment implies negative externalities which regard both flows, such as for instance the emission of pollutants, and stock, such as the negative effects on health derived from stored pollution, or the indirect effects on consumption disutility resulting from the depletion of natural resources such as landscape and animal species.

These negative external effects of environmental deterioration should be adequately evaluated by a system of national accounts aimed at measuring not only income or growth, but also welfare and the change in the quality of life.

Check Your Progress 2

1) State the importance of environmental defensive expenditures in accounting systems.

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2) Explain the relationship between satellite accounts and SNA.

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3) Describe the main approaches to environmental accounting.

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23.5 LET US SUM UP

In this unit we have dealt with the relationship between economic activities and the environment. We also looked at the method by which the impact of economic activities on the environment is measured and accounted for in the national income accounts.

The unit discussed the relationship between production activities and environmental issues. The effects of production activities on the environment were discussed. The very important issue of environmental cleansing services was examined.

Data collection categories were elaborated and described. Then the unit came to the area of the relation between the environment and accounts - accounts of several types. How environmental defensive expenditures in accounts are considered was explained. A very important relationship, that between natural assets and economic activities was described. Subsequently, the unit discussed the concept of satellite accounts and their relationship with the United Nation's System of National Accounts. Finally the unit discussed the objectives of environmental accounting and the various approaches to environmental accounting.

23.6 KEY WORDS

Environmental Protection Services : Services which are carried out in order to protect the environment from damage from production activities.

Satellite Account : Accounts which are supplementary to the main accounts in the national income accounting system.

23.7 SOME USEFUL BOOKS

Agarwala, S.K (2004) *National Income Accounting* (4th edition), Bookland Publishers, Delhi.

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

Roy Choudhury, Uma Dutta (1995) *National Income Accounting*, Macmillan Delhi.

23.8 ANSWERS OR HINTS TO CHECK YOUR PROGRESS EXERCISES

Check Your Progress 1

1) See subsection 23.3.1

2) See subsection 23.3.3

3) See subsection 23.3.4

Check Your Progress 2

1) See subsection 23.4.3

2) See subsection 23.4.6

3) See subsection 23.4.8

UNIT 24 RECENT CHANGES IN THE ANALYSIS AND PRESENTATION OF NATIONAL ACCOUNTS

Structure

24.0 OBJECTIVES

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

- discuss the need for updating the SNA system of accounts;
- explain some of the suggestions put forward to update the SNA system;
- analyse some concepts regarding treatment of financial institutions and other organizations in the revised system of SNA; and
- describe the features of a specific software for compiling national income accounts.

24.1 INTRODUCTION

The current UN System of National Accounts was formulated in the year 1993 and the countries were expected to modify the System in the manner that was desired by each country to suit its requirements before implementing it. Since then the UN Statistics Division and particularly the Inter-Secretariat Working Group on National Accounting (ISWGNA) have decided to focus its attention on how best it can assist countries in implementing the 1993 SNA. For this purpose it has decided to focus attention on organising workshops, preparing manuals, handbooks and encouraging research and understanding of the SNA concepts etc. The ISWGNA has thus gone into several questions of not only implementation of SNA but also its interpretation. It has also looked into several of the questions which have not been dealt with in the 1993 SNA but require attention/inclusion in order to make the System comprehensive and extensively useful.

24.2 IMPLEMENTATION AND DATA DEVELOPMENT

24.2.1 Phases of Implementation

The implementation of the System of National Accounts has to be in phases and the first two phases which have the most immediate and general use for policy makers are expected to be ready with results in most of the countries. These cover estimates of gross domestic product by industry at current and constant prices, final expenditure on gap at current and constant prices and external transactions on current and capital account.

For India also these results are already available and India is now on its way to implementation of the institutional sector accounts including these for the general government. Phase 3 and 4 will cover production accounts of all institutional sectors including those of general government. Also included in the programme are the financial accounts for all institutional sectors other than general government. In India the work is only in its preliminary stage and the work of review of available data on the subject and their collection has been initiated.

Phase 5 will cover financial account. In the last phase of the implementation of the SNA the other changes in asset accounts for all institutional sectors and the balance sheets are to be prepared. For India though some attempts are being made now to prepare the other changes in asset accounts for institutional sectors it will be quite sometime before either these accounts or the balance sheets are likely to be ready.

These later three phases involve the development of comprehensive flow accounts for the institutional sectors which have been introduced for the first time and a full set of accounts for general government. Quite reliable data are generally available for the government sector and the main balancing items - government saving and net lending - are of particular interest for economic policy.

In India gross domestic product by cost components is also being developed currently along with production account by sectors including the generation

of income account. Attempts are also being made to prepare accounts for the household sector and the non-financial corporations for which the data sources much weaker. But from the point of view of policy implications and their usefulness particularly for the developing countries construction of these accounts should be given priority and in India a special expert committee has been set up to examine these problems and take steps for preparation of these accounts in general and the household accounts in particular at an early date and efforts are being made to collect the data on household through all India sample surveys.

Preparation of "other changes in asset" accounts for all institutional sectors and the balance sheets are much more difficult to construct and only countries with a highly developed system of basic data including a wide range of price statistics and detailed information on stocks of produced and non-produced assets can attempt. For India this set is not likely to become available in the near future and only the beginning has been made by producing the estimates of reproducible tangible wealth i.e. capital stock at the industry level by type of assets following the perpetual inventory method. This method also allows estimation of consumption of fixed capital at the industry level.

Preparation of the accounts as listed above require extensive data system and availability of such data at the country level. These include statistics on agricultural and industrial output, foreign trade, prices, employment, retail trade, construction output and household expenditures. Also it would be desirable to have complementary data systems on supply and use at current and constant prices with details by products to the extent possible. These will help in improving the consistency between value added and expenditure data.

24.2.2 Priorities set up by UNSD

The UN Statistical Department (Office) also has suggested phases for implementation of the 1993 UN System of National Accounts which are expected to be followed by different countries and are as follows:

Phase-1: Basic indicators of gross domestic product (GDP) i.e. Final expenditures on GDP at current and constant prices as well as GDP by industry at current and constant prices.

Phase-2: Gross National Income and other related aggregates which would demand the construction of the trade balance, external account of primary incomes and transfers as well as the capital and financial account of the rest of the world.

Phase-3: **First Step:** This covers production account of all institutional sectors, generation of income, allocation of primary income , secondary distribution of income and capital and financial accounts for general government.

Phase-4: **Intermediate Step:** Generation of income, allocation of primary income, secondary distribution of income and capital accounts for all institutional sectors other than general government.

Phase-5: Covers the last of the transaction accounts of the institutional sectors i.e. the financial accounts for all institutional sectors other than general government.

Phase-6: Other changes in asset accounts and balance sheets for all institutional sectors as well as the balance sheet for the economy as a whole.

Phase 3,4 and 5 involve the development of comprehensive flow accounts for the institutional sectors. **Phase 3** involves the compilation for the production accounts for the institutional sectors which is an innovation of the 1993 SNA as well as the full set of account for the general government. Most of the countries (including India) have quite reliable data for the government sector and the main balancing items i.e. government saving and net lending are of particular interest for economic policy. In **Phase 4** the construction of accounts of household sector and the non-financial corporations which are particularly important for policy point of view become desirable though these are the sectors where the data sources are weaker and therefore requires special efforts for countries to obtain the data. **Phase 5** covers the last set of accounts for the institutional sectors i.e. the compilation of financial accounts and with the construction of these accounts, the accounting presentation suggested in the SNA takes its shape in full.

The balance sheets which, in the 1993 SNA, is for the first time fully integrated with the rest of the accounts (Phase VI) requires very extensive data on stocks of produced and non-produced assets as well as a wide range of price statistics. Completion of other changes in assets accounts and balance sheets can only be achieved by countries with highly developed system of basic data.

At each phase the countries have to decide the priority between allocation of resources for the next phase or for improvement of estimates for the earlier phases just as it is essential to consider the question of availability and quality of existing data systems such as agricultural and industrial output, foreign trade, prices, employment, retail and wholesale internal trade, construction output and households and government expenditure. In India just as substantial amount of finance and effort is devoted to improvement and collection of basic data, the national accounts and improvement of accounts already in existence.

24.2.3 Tasks Ahead

The other refinements and additional accounts which demand attention from different countries are the quarterly and regional accounts, the former having proved of great value for monitoring short-term economic developments. Input-Output tables are also of importance in this context. Satellite accounts, particularly for the environment are of particular importance though in India no work on this ahs been undertaken so far. Countries like the EUROSTAT countries on the other hand, are very intensively engaged in developing a system of satellite accounts and many of the countries are currently preparing such accounts on the basis of a system developed by them. This is facilitated by the fact that UN System for satellite accounts in this area is designed to be flexible allowing to proceed on a step-by-step basis.

Simultaneously with the preparation of the 1993 SNA in stages it is essential to devote some attention to the development of the production, financial and price data which are required as IMF indicators and are at the same time included in the SNA.

It is now suggested that the SNA approach may be combined with the IMF approach. Since SNA approach is geared towards middle and long term economic analysis - which may be extended towards environmental and social areas - and the IMF approach is more for short term information which require not only quarterly but also monthly data, combination of the term information which require not only quarterly but also monthly data, combination of the two would imply providing more short term data within the SNA e.g. quarterly estimates and at the same time middle and long term effects of monetary or financial policy decisions could be assessed within the SNA framework and specially within its environmental and social extensions. India has launched a project of preparing quarterly estimates of macro-aggregates and this with the short-term financial data will lead to their more direct use for policy purposes.

24.2.4 Suggestions about Updating Mechanism in 1993 SNA

It has however been recognised in the introduction to the 1993 SNA that this system like its predecessorts, represents a stage in the evolution of national accounting as it existed at the time of its finalisation. To carry on that evolution and to incorporate the real changes that take place continuously within economies continuous updating of the 1993 SNA is necessary. This will allow the SNA to incorporate the new developments fast and also provide a way to introduce changes in an incremental manner. The UN Working Group on the subject has considered the question and suggested the following proposals for an appropriate updating mechanism:

1) First and foremost the updating process should be efficient and timely and at the same time broad based. This should include such editorial amendments which will mainly refer to working errors and apparent contradictions in the present text. But such corrections or changes should neither affect the concepts nor the structure of the system and tables therein;

2) Secondly incorporate such clarifications which will arise when a new economic situation has emerged which was negligible when the 1993 SNA was designed but has since grown considerably in importance. This will be accompanied by explanations, as required, so as to arrive at unambiguous interpretations of existing SNA concepts etc. In this case it will also be necessary to establish clearly that there is no conceptual issue concealed with the clarification;

3) In such situations when new economic situations might have emerged but their treatment in national accounts is not very clear, the various solutions on how to treat the phenomenon in national accounting may be put forward indicating that there seems to be possibilities for different interpretations consistent with the scope and concepts of 1993 SNA and finally adopt the one which is agreed upon by the countries working on the system; and

4) Finally, due to changes in the macroeconomic environment some of the basic concepts in the 1993 SNA may become irrelevant and may even result in figures that might mislead users. In such cases it might even become necessary to rewrite those particular portions of the SNA to reflect those changes.

Check Your Progress 1

1) Who determined the priorities in adopting SNA (1993) by different countries?

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2) What is the advantage of integrating 1993 SNA with IMF system?

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3) Name the four suggestions given by the UN working Group modernising mechanism of 1993 SNA.

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24.3 SUGGESTION ABOUT UPDATING OF 1993 SNA

The incorporation of all the above aspects within the current SNA will require their widespread distribution to the user countries after their final adoption by the UN Statistical Commissions. These however are stages of changes which will appear from time to time and will get incorporated as and when the situation permits. Some of the aspects which have already come up in this context are FISIM i.e. *financial intermediation services indirectly measured*, consumer subsidies, informal-formal distinction in classification and environmental accounting. Some clarification on coverage of the items may be useful.

24.3.1 FISIM

Banks make a large part of their money by lending at a high rate of interest, and borrowing at a low rate. The difference between the two, results in banks receiving net interest receipts. Because this income arises from the difference between interest rates, banks do not need to charge directly for all the services they provide in arranging borrowing and lending. For example, checking accounts are usually maintained free by the banks, and the associated costs are met by the difference between the low interest payments awarded on credit balances in such accounts whilst the bank lends it at a higher rate to a borrower.

There is a notional reference rate of interest at which lending and borrowing

can take place directly between a lender and a borrower, satisfactory to both parties. So consider the situation where I want to borrow 100 rupees and I am prepared to pay back 105 rupees after one year. If I could find the right person at the right time, its quite possible that they will accept this as good business, and lend me 100 rupees in exchange for the 105 in a year's time. However, as we all know, finding a counterpart who would be interested at the same time in the same deal over the same time period is not easy so we go to a bank to help us. Banks bundle together various lending offers and match them against the array of borrowers so that they effectively provide a market for borrowing and lending. iF in order to make a living out of such transactions, it turned out the bank had to charge 5 rupees, then they could choose to directly charge 5 rupees for the introduction and facilities to make the transaction. If the bank does it through the interest rates then in the above example I could be asked to pay back 108 rupees at the end of the year, but the lender might receive only 103 rupees. The net interest receipts of the bank are equal to 5 rupees (8-3). If we accept that the reference rate of interest for this kind of small borrowing and lending is 5 p.c. then we can see that I have paid 3 rupees, and the lender 2 rupees.

In national accounts, interest payments are not considered to be payments for a service rendered but a form of property income and so are recorded in the generation of primary income account and not the production account. But because of the peculiar way that banks income account and not the production account. But because of the peculiar way that banks make their money, by loading the interest rates, this makes it seem that the banks are given all the money for their services in the income accounts rather than "earning it" for services provided in the production account. So the operating surplus of banks would show as a negative item, given that most of the income earned from borrowing and lending would appear later in the current income and expenditure account. As this would give a false impression of the size of the operating surplus of banks compared to other industries, the system of national accounts adopts the following solution.

Let the output of banks include net interest receipts as if customers paid for the service (termed as FISIM). However, since no such payments are shown in the production accounts of industry or the final consumption expenditure of households, to be consistent with showing the net interest receipts contributing to the bank output, the corresponding intermediate consumption of banking services must be shown in the production accounts of industries using banking services and in the corresponding final demand component of consumer expenditure. These banking services have therefore to be deducted as intermediate consumption of industries and bank charges of consumers. India has developed indicators to determine the amount of banking services utilised by different industries and final consumers and makes corresponding adjustments as intermediate consumption of industries and household consumer expenditure thus accounting for Financial Intermediation Services Indirectly Measured (FISIM).

24.3.2 Consumer Subsidies

1993 SNA defines subsidies as : current unrequited payments that government units (including non-resident government units) make to enterprises on the basis of the levels of their production activities or the quantities or values of

the goods or services which they produce, sell or import. They are receivable by resident producers or importers. In the case of resident producers they may be designed to influence their levels of production, the prices at which their outputs are sold or the remuneration of the institutional units engaged in production.

It also states that subsides are not payable to final consumers, and current transfers that governments make directly to households as consumers are treated as social benefits. Subsidies also do not include grants that governments make to enterprises in order to finance their capital formation or compensate them for damage to their capital assets, such grants being treated as capital transfers. Since enterprise is an institutional unit engaged in production and can be a corporation, a non-profit institution or an unincorporated enterprise one can assume that non-market production units within the sectors of general government and non-profit institutions serving households may also receive other subsidies on production. This would suggest that non-market producers within the households would also receive subsidies.

24.3.3 Informal-Formal Distinction

Is with reference to sectors and legal status of the enterprises. The 1993 SNA does not clearly define the distinction and this needs to be looked into. The Indian national accounts system talks of organised and unorganised sectors with reference to legal status of the enterprises (whether registered under any legal systems) but not of formal and informal. A classification of the economy into formal and informal may be important and desirable though not easily definable.

A general definition of formal and informal that is acceptable across a wide range of countries may not be easy to find, but a definition similar to that of an unincorporated enterprise may be meaningful. In other worlds, *all enterprises for which a complete set out accounts, including a balance sheet of assets and liabilities exist or for which it is possible and meaningful from both an economic and legal viewpoint to compile a complete set of accounts if they were required could be classified as the part of the formal sector with the rest as the part of the informal sector*. If such a definition is adopted, household market and non-market enterprises as well as some in government could be categorised under the informal sector and the rest under formal.

Within the informal household sector it is also envisaged that unincorporated financial enterprises such as individuals engaged in financial intermediation or in services auxiliary to financial intermediation will be included. Thus money lenders who make loans from their own resources are also to be considered as producers of financial services within the household sector.

It is important that classification of the economy according to formal and informal is integrated within the 1993 SNA.

24.3.4 Environmental Accounting

The central framework of the 1993 SNA presents a number of characteristics which give it the advantages of an integrated accounting structure. It is exhaustive and consistent within the boundary of the economic activities it covers; that is to say each unit, transaction, product and purpose is given a

place, and only one, in the classifications and accounts of the system. Moreover, the set of concepts adopted by the system is fully coherent.

As against these benefits there are certain limitations as to what may be accommodated directly within the central framework. The central framework may be used in a flexible way, in order to put greater or lesser emphasis on specific aspects of economic life. However, the margins of flexibility allowed by the central conceptual framework do not permit conflicting approaches to be covered simultaneously.

It becomes desirable therefore to consider the question of satellite accounts or systems which generally stress the need to expand the analytical capacity of national accounting for selected areas of social concern in a flexible manner, without overburdening or disrupting the central system. Satellite systems or accounts allow for the provision of additional information on particular social concerns of a functional or cross-sector nature.

Thus the satellite accounts are not only linked with the central framework of national accounts and through them to the main body of integrated economic statistics but also because they are more specific to a given field or topic, they are linked to the information system specific to this field or topic.

Environmental accounting which is of such importance as to deserve special consideration needs to be presented in a SNA satellite accounting framework. However, in the case of environmental protection activities, the process of identification is complex, because the relevant activities and products appear only to a small extent in the central framework classification.

All the above and possibly many other similar factors need careful consideration and also elaboration in the context of their integration with the SNA and will continue to be an important part of future SNA development.

24.3.5 Definition of Public Enterprises

In the context of IMF data, a question may be raised as to the definition and scope of the public enterprises in the 1993 SNA and how different are they from the coverage recommended in 1968 SNA. In practice, the scope of public enterprises has not really changed at all between 1968 SNA and the recent 1993 SNA but the terminology used has changed. It might be useful therefore to define clearly the concept propounded in the recent SNA which is likely to be followed during time to come. The critical issue involved in determining whether the enterprise is a public enterprise or not is through the question as to whether or not the government controls the business of the enterprise. The issue actually hinges on whether the government is in a position to control the activities of the enterprise even if it own less than 50 per cent of the shares. In general, an individual institutional unit or group of units owning more than half the voting shares of a corporation can exercise complete control where control is defined as the ability to appoint directors of its own choice. However, owning more than half the shares of corporation is evidently a sufficient but not a necessary condition for control. Control is not to be limited to merely appointing directors but also to determine general corporate policy. Also, a corporation which government is able to control as a result of special legislation should be treated as a public corporation even if the government does not own a majority of the shares.

Check Your Progress 2

1) What are FISIM?

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2) Define subsidy.

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3) What are formal sector enterprises?

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24.4 CLARIFICATION OF SOME CONCEPTS OF 1993 SNA

Several other aspects touched in 1993 SNA needs some clarification to make them understandable to the general reader. At attempt is made here to clarify some of these concepts besides elaborating the software particularly developed for SNA.

24.4.1 Central Banks

The treatment of central banks in 1993 SNA needs clarification. The 1993 SNA recommends that the implicit part of the output of central banks, similar to other financial intermediaries, is measured as the difference between interest receivable less interest payable. This method of measuring output of central banks often leads to large positive or negative measures of gross output and even a volatity in output.

It was now been suggested that in such cases where this approach leads consistently to inappropriate results, output could, as a second best approach, be measured at cost as for other non-market producers.

It has also been clarified that under no circumstances central banks should be considered as a part of general government sector which is quite contrary to what had been adopted for India in the past i.e. - Reserve Bank of India treated as a part of Central Government.

It is also to be noted that contrary to 1993 SNA recommendations separate institutional units including public bodies, that are primarily involved in regulating financial institutions should be classified as financial auxiliaries rather than as a part of the central bank sub-sector. This is important as they are not intermediaries by nature and therefore deserve to be treated as auxiliaries only.

24.4.2 Interest: Full Accrual Accounting of Interest

The 1993 SNA implicitly uses the debtors' viewpoint in order to derive measures of interest accruals . It is however, felt that the treatment in the 1993, SNA of interest accruals on tradable debt securities may be modified by applying current market interest rates rather than the interest rates at the time of issue, to calculate interest flows. This methodology would be consistent with the requirements to use current valuations within the accounts, and prevent discrepancies between the positions and transactions of creditors and debtors.

24.4.3 Asset Transfer Costs

According to 1993 SNA the costs of transferring the ownership of existing non-financial assets should be treated as gross fixed capital formation. Broadly, ownership transfer costs include all professional charges and commissions incurred by either the buyer or the seller plus all taxes payable by either party. If 1993 SNA recommendation is followed then one has to accept the fact that asset is created by the transfer process i.,e., an asset which changes hands several times is more valuable or productive than an identical asset, which remains under same ownership for its entire life. This recommended treatment is different from the one recommended for transfer costs associated with financial assets. It will be desirable to treat transfer costs as current expenses rather than as capital expenditure and 1993 SNA suggestion should be revised.

24.4.4 Treatment of Lotteries

The 1993 SNA does not discuss at length the treatment of lotteries as producers of services or the treatment of profits that are transferred from lotteries to government. 1993 SNA does make it clear that the total payment for lottery tickets is composed of two elements, a service charge paid to the lottery organisation and the amount of winnings paid. In the case of lottery tickets on which a tax is paid, the gross output may be measured at basic prices by excluding the tax.

A point has often been raised as to whether public lotteries should be treated as ordinary public corporations whose payments to government output of operating surplus should be classified as property income or as fiscal monopolies, in which case the payments to government should be treated as taxes on products. The 1993 SNA describes fiscal monopolies as public corporations, public quasi-corporations or government owned unincorporated enterprises that have been granted a legal monopoly over the production or distribution of a particular kind of good or service in order to raise revenue and not in order to further the interest of public economic or social policy. As public lotteries are invariably established to raise revenue (although they may not constitute true monopolies), the argument is often made that they should be treated as fiscal monopolies.

Treating publicity owned lottery corporations or quasi-corporations as fiscal monopolies rather than ordinary public corporations would reduce value added measured at basic prices and operating surplus of non-financial corporations sector. GDP would not change as the payments to government would be treated as part of taxes less subsidies on products, which must be added to the sum of sectoral value added to arrive at GDP. Taxes on products received by government would increase and property income would decrease. But primary and disposable income of government would be the same under both treatments.

The questions which need to be looked into in this context are : (I) should be public lotteries be treated as fiscal monopolies or as ordinary public corporations particularly in national accounts and (ii) if public lotteries are treated as fiscal monopolies should the statistics of government revenue record transfers of lottery profits as taxes on products?

24.4.5 Intangible Assets: Patents and Copyrights

Patents and copyrights are legal instruments which constitute evidence of their holders' ownership rights over certain kinds of intangible assets which may be described as 'originals' because they are the outputs produced by creative or innovative activities of a scientific, engineering, entertainment, artistic or literary nature. Patents confer ownership rights over scientific originals or inventions, whereas copyrights confer ownership rights over entertainment, artistic, literary or programming originals (new recordings, films, manuscripts etc. and computer software). The ownership rights conferred by patents and copyrights are often described as 'intellectual property rights'.

Copyrights

The 1993 SNA explicitly recognises the process of creating an entertainment, literary or artistic original as falling within the production boundary of the SNA. The output consists of an original in the form of a new visual and/or sound recording, manuscripts, musical composition etc. The original is then used to produce copies which are themselves use in further processes of production or for consumption. The original must, in fact, be an intangible fixed asset provided it is itself used repeatedly or continuously in the production of copies for more than one year. Nothing material is transferred from the original in the process of producing the copies.

An entertainment, literary or artistic original is therefore classified as an intangible fixed asset in 1993 SNA. Be definition, therefore, the acquisition of an original, whether through own account production or purchase on the market, counts as gross fixed capital formation. It should be noted that copyright as such does not appear anywhere in the asset classification because copyright itself is not an asset, being only a legal instrument providing evidence of ownership over an asset. Any payments received by the owner of the asset i.e. the holder of the copyright from other units who are licensed to use the asset are conceptually equivalent to the rentals received by the owners of assets who lease them out. They are thus treated as payments for services provided by the owner of the asset.

Writing new computer software is counted as production in the same way as writing a new book or musical composition. In the 1993 SNA , a new computer programme is therefore treated as an original intangible fixed asset when it is

used repeatedly or continuously in the production of other goods and services for more than one year and is classified alongside artistic originals.

Patents and Scientific Originals

In the 1993 SNA the situation is different for scientific originals such as inventions, new drugs, new processes etc. and associated patents. Their treatment is linked to that of expenditures on research and development (R and D) and all expenditure on R and D is classified as current.

In consequence, the outputs of R and D establishments are treated as being consumed as they are produced. As a result, though scientific originals may be produced which are assets from an economic point of view; they cannot be recognised as assets within the 1993 SNA.

The treatment of programming, entertainment, literary and artistic originals and their associated copyrights is thus dealt with satisfactorily in the 1993 SNA but this is not true in the case of patents as because of the classification of R and D expenditures as current expenditures it is not possible to treat creative or innovative scientific activities as producing assets. Two possible alternatives exist to remove this anomaly:

1) one possibility is to accepts the fact that treating R and d expenditures as current implies that no assets are produced by R and D activities. Assets in the form of scientific originals (i.e. patented entities) cannot therefore exist. The patents themselves, as legal instruments, have therefore to be treated as non-produced assets and royalties treated as property incomes.

2) Alternatively, one has to accept the fact that scientific originals do actually exist. This implies that intangible fixed assets may be produced as outputs from R and D activities so that some expenditures on R and D have to be classified as gross fixed capital formation. In other words, the treatment of scientific originals and also computer software.

The point to be recognised is that in the long run one of the two above alternatives has to be accepted and the approach in the 1993 SNA has to be amended accordingly. There is no doubt that ultimately in the long run the second approach along with its implied changes will have to be accepted.

24.4.6 Wages Paid in Arrears

Currently, in some countries, government workers are not being paid until several months after the work is actually done. If it is clear that the wages will be ultimately paid, it is appropriate for the accrued income to be shown as part of the national accounts estimates of production. However, a problem as interpreting the accounts will arise when this income is attributed to households. The actual measure of household saving derived as the difference between total income (including a non-paid" element) and total consumption will not be realistic. It might therefore be desirable, in such cases, to show compensation of employees, disposable income and saving in a more disaggregated form where cash-based estimates are shown separately from the accrual elements. In this way, the extent of household saving that mayu be involuntary because of the accrued lag will be immediately apparent. Obviously, the counter part entries in the government will need to be similarly disaggregated. All this implies that the wages due will be eventually paid. To the extent that such

wages are never paid, neither they nor the corresponding government output should be recorded.

24.4.7 Women's Contribution to Production

It has been recognised that lack of concrete knowledge about the activities of women has been a major hurdle in the formulation of policies and programmes at both the national and international levels, to achieve equality. The 1993 SNA and elaborations within the same to reflect women's contribution to production may be one of the answers to the question. Since the satellite accounts can be used to extend definitions of production boundary and thus facilitate the in-depth analysis of the real magnitude and economic significance of the production of personal services within the household and therefrom the contribution of women to production, it might be desirable to structure a set of satellite accounts for the purpose. As far as household production is concerned, the central framework of the 1993 SNA includes all production of goods in households whether sold or not and services if they are supplied to units other than their producers. This production boundary results in the incorporation of quite a few activities in which women are active participants in the production process, such as the production and processing of agricultural, dairy and fishery products, including the production of butter and cheese on the farm, the preservation of meat and fish, the production of flour by milling, weaving, dress making, tailoring, the production of footwear, the production of baskets and mats, pottery, the carrying of water etc. Personal services for own final consumption with the same household such as preparing meals, child care, elderly care, house-cleaning; transport and leisure services (except for services produced by employing paid domestic staff) are excluded. The measurement of women's contribution to household production would be a good starting point for measurement of women's contribution.

24.5 MICRO-COMPUTING PACKAGE FOR NATIONAL ACCOUNTS COMPILATION

With the advance of technology and demands for high quality macroeconomic information from both national economic agents and international level increasing due to the progressing globalisation of the world economy it has become essential to consider the question of computerisation of the compilation process. This has the advantage of satisfying the demand for higher transparency with regard to the compilation procedures employed.

A software termed 'ERETES' has been developed by a group of national accountants. A server permits to control the entire compilation process. It also supports the reconciliation phase. The work is distributed for certain phases over various work stations.

The overall compilation process is organised in three phases:

1) Data collection.

2) Balancing of supply and use, of the industry accounts and of the transaction matrices….

3) Cross-sectional tasks related to the above.

For the most frequent tasks, special tools exist which ensure an automatic interface with the data base. It is for instance, possible to download certain data into a spreadsheet. No automatic reconciliation of statistical discrepancies is suggested, leaving the responsibility of making certain adjustments entirely to the national accountants. Finally, the software offers the following features to facilitate the work of the accounting team:

i) a control screen, in order to follow the various tasks being executed;

ii) a note pad, in order to store information on decisions taken or difficulties encountered;

iii) an on line help function, which is linked to the different screens, offering all related information related to a specific task.

The proposed methodology is an integrated one. A statistical source is fed to all users in a unique prespecified manner. Further more, the proposed method allows to indirectly estimate data items, which are often not covered by the statistics such as the informal sector. This requires of course a well coordinated procedure of working with the given data base and the establishment of a clear iterative process leading progressively to the final reconciliation.

At this point, tools are being offered, which permit to organise publication of the results and to transfer the accounts into the data base to be used for the compilation of the subsequent years.

In its present form the software offers a coherent instrument for the annual compilation of the supply and use table and the industry accounts at constant prices. It does not yet provide the same infrastructure for the elaboration of institutional sector accounts, however, the data base certainly constitutes an excellent starting point for such efforts.

Check Your Progress 3

1) Should asset transfer cost be treated as capital expenditure or current expenditure? Give your reason in brief.

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2) Why are patents and scientific invention not treated capital formation in 1993 SNA.

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3) Give some examples of intellectual property rights.

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4) Give some examples of activities of women in households which are treated as production activities.

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24.6 LET US SUM UP

The above gives very broadly not only the recent changes in the analysis of data on national accounts in India but also indicates the direction of changes which are being considered at the international and national level for either elaboration or clarification in the system as presented in 1993 SNA. It is also obvious from the above discussion that many of the aspects covered in the 1993 SNA need clarification and substantial technical work is called for to make it a more usable document for all countries. There is no doubt that the United Nations Statistics Division and its sister organizations are offering a variety of training programmes related to the new SNA and these will go a long way in making its implementation smooth and easy.

24.7 KEY WORDS

Asset : A commodity or service that provides a stream of returns and increases the wealth of the holder.

Balance Sheet : A statement showing the balance (or lack of it between assets and liabilities of some organization).

International Monetary Fund (IMF) : An international multilateral lending institution that lends to members.

24.8 SOME USEFUL BOOKS

Agarwala, S.K (2004) *National Income Accounting* (4th edition), Bookland Publishers, Delhi.

Roy Choudhury, Uma Dutta (1995) *National Income Accounting*, Macmillan Delhi.

Kendrick, J.W (1972), *Economic Accounts and their Uses*, McGraw Hill Book Company, New York, Tokyo and Singapore.

24.9 ANSWERS OR HINTS TO CHECK YOUR PROGRESS EXERCISES

Check Your Progress 1

1) See subsection 24.2.2

2) See subsection 24.2.3

3) See subsection 24.2.4

Check Your Progress 2

1) See subsection 24.3.1

2) See subsection 24.3.2

3) See subsection 24.3.3

Check Your Progress 3

1) See subsection 24.4.3

2) See subsection 24.4.5

3) See subsection 24.4.5

4) See subsection 24.4.7