
UNIT 1: NATIONAL INCOME AND RELATED TOTALS

UNIT STRUCTURE

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1.1 LEARNING OBJECTIVES

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

- clearly define and explain the concepts of domestic and national income
- discuss various related totals to national income
- derive the relationships among different related totals of national income.

1.2. INTRODUCTION

National income is one of the most important concepts in all economic system. It contains consistent estimates of significant aggregates and components for the economy and for major economic sectors, or groupings of decision-making units. It should be noted that macroeconomics deals with economic and physiological forces (aggregate employment, production, real income and the price level). However, national income is a crucial

preparatory parameter for tackling macroeconomic issues of unemployment, inflation, growth and 'economic welfare' (quality of life). Thus, national income, together with its related totals, is important for decision-makers in our economy to shed light on the country's macroeconomic performance, and to forecast events in the future. In this unit, we shall try to look at the definitions and conceptual framings of domestic and national income. We shall also discuss various related totals of national income that are used to determine the progress of the economy.

1.3 DOMESTIC AND NATIONAL INCOME

As stated earlier, national income serves as a background for economic appraisals and projections, and it also makes possible more effective public and private decision-making. It attempts to measure how much economic activity took place during a specified period of time (usually a year). However, income of a country may be stated in the context of its 'territory' and its 'normal residents'. In this section, we attempt to state the definitions of domestic and national income, and also try to derive conceptual explanations underpinning them.

1.3.1 Concepts of Domestic and National Income

We have already stated that income of a country may be explained from two perspectives: its domestic territory and its normal residents. Here, the contrast is important. As we shall see later, the difference between the two is an important macroeconomic discourse for national income. Domestic income can be defined as the sum total of factor incomes generated by all the production units located within domestic territory of a country during an accounting period-usually a year. We should note that factor incomes are expected to be generated within a defined territory irrespective of the statuses of the producers (citizens or foreigners).

Within a defined territory, it is expected that both nationals and non-nationals reside. By implication, domestic income includes factor incomes of both nationals and non-nationals residing within a particular domestic territory. For instance, there are many foreign companies and banks which operate within domestic (economic) territory of India. Income generated by these foreign companies and banks are included in India's domestic income. Therefore, the conceptualisation of domestic income is territorial in nature since it is defined with particular reference to domestic territory. We should clearly note that domestic income excludes factor income earned abroad.

Whereas national income is simply defined as the sum total of factor incomes earned by normal residents of a country in a particular accounting period. It is important to note here that national income contains factor incomes earned by normal residents within and outside the country. National income is therefore framed along the lines of productive efforts of normal residents.

Overall, income generated by both citizens (residents) and foreigners (non-residents) within domestic territory of a country is referred to as domestic income while income generated by citizens (normal residents) within and outside a particular country is referred to as national income. The major difference between the two is the **net factor income** from abroad which is added to domestic income to get national income (i.e. National income = Domestic income plus Net factor income from abroad).



Net factor income:

Net factor income is the difference between the aggregate amount that a particular country's citizens and companies earned abroad, and the aggregate amount that foreign citizens and overseas companies earn in that country.



LET US KNOW

A resident is said to be a person (or institution) who ordinarily resides in a country and whose centre of economic interest lies in that country. He is called a normal resident since he normally lives in the country of his economic interest. The period of stay should be at least one year or more.

Here, centre of economic interest implies two things: (a) the resident lives or is located within the domestic territory; and (b) the resident carries out basic economic activities of earnings, spending and accumulation from that location.

Following are not included under the category of normal residents:

(a) foreign tourists and visitors who visit a country for recreation, holidays, medical treatment, study, sports, conferences, etc.; (b) foreign staff of embassies, officials, diplomats and members of the armed forces of a foreign country, located in the given country; (c) international organizations like UNO, WHO, etc. are not considered as normal residents of the country in which they operate. They are treated as the normal residents of international area; (d) employees of international organizations are considered as residents of the countries to which they belong and not of the international area. For example, an American working in UNO office located in India will be treated as normal resident of America. However, if the employees are working for more than one year in such International Institutions, then they become the normal resident a country in which such institutions are located. It means, in the given example, if the American is working in UNO office in India for more than one year, then he will be treated as normal resident of India; (e) crew members of foreign vessels, commercial travellers and seasonal workers, provided their stay is less than one year; (f) border workers who live near the international border and cross the border on a regular basis to work in the other country. They are treated as normal residents of the country where they live, and not where they work.

In laymen's terms, domestic territory means the political frontiers of a country. In Economics the term has a wider connotation. However, for the purpose of national income accounting, it is used in a wider sense.

In addition to political frontiers, domestic territory also includes: (a) ships and aircrafts owned and operated by normal

residents between two or more countries. For example, planes operated by Air India between Russia and Japan are part of the domestic territory of India. Similarly, planes operated by Singapore Airways between India and Japan are a part of the domestic territory of Singapore. (b) fishing vessels, oil and natural gas rigs and floating platforms operated by the residents of a country in the international waters where they have exclusive rights of operation. For example, fishing boats operated by Indian fishermen in international waters of Indian Ocean will be considered a part of domestic territory of India. (c) embassies, consulates and military establishments of a country located abroad. For example, Indian Embassy in Russia is a part of the domestic territory of India. Consulate is an office or building used by consul (an officer commissioned by the government to reside in a foreign country to promote the interest of the country to which he belongs).

Domestic Territory does not include: (a) embassies, consulates and military establishments of a foreign country. For example, Japanese Embassy in India is a part of domestic territory of Japan. (b) international organizations like UNO, WHO, etc. located within the geographical boundaries of a country. According to the United Nations, Economic Territory or domestic territory is the geographical territory, administered by a government within which, persons, goods and capital circulate freely.



CHECK YOUR PROGRESS

Q 1: Briefly explain how income can be explained in terms of 'domestic' and 'national'. Answer in about 20 words.

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Q 2: What is the difference between domestic and national income?

Answer in about 20 words.

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1.3.2 Related Totals

In following the discussion of domestic and national income, we get a picture of some related totals and techniques economists use to measure the progress the economy. We discuss them one by one.

GDP (Gross Domestic Product): GDP is the total value of all the final goods and services produced within the domestic territory of a country during a period of time (usually a year). It is one of the fundamental indicators used to determine the health of a country's economy. Usually, GDP is used as a comparison to the previous year. For instance, if the year-to-year GDP is up 4 percent, this suggests that the economy has grown by 4 percent over the last year. Basically, GDP represents economic production and growth and this has a large impact on nearly everyone within that economy. An important change in GDP, whether up or down, often has a significant implication on the **stock market**. This suggests why it is not so hard to understand why a bad economy usually means lower profits for companies, which in turn means lower stock prices and negative GDP growth.

NDP (Net Domestic Product): It is a measure of the economic output of a country that accounts for depreciation. It is calculated by subtracting depreciation from GDP. In general, NDP accounts for capital that has been consumed over the year in the form of housing, vehicle or machinery deterioration. The depreciation accounted for is what economists refer to as **capital consumption allowance**.

GNP (Gross National Product): GNP is the value of all finished goods and services produced in a country during a period of time



Stock market: Stock market is a market where shares of publicly-held companies are issued and traded either through exchanges or over the counter markets.



Capital consumption allowance: Capital consumption allowance represents the amount needed in order to replace depreciated assets.

by her nationals. Both GDP and GNP try to measure the value of all goods and services produced for final sale in a particular economy. However, the difference revolves around how each term interprets what constitutes the economy. While GDP measures the domestic levels of production, GNP measures the levels of production of any person or corporation of a country. Depending on circumstances of each country, GNP can be either higher or lower than GDP. This depends on the net factor income from abroad.

GNP comprises income earned by nationals and companies abroad, but does not include income earned by foreigners within the country. The figures used to assess GNP include the manufacturing of tangible products (e.g. cars, furniture and agricultural products). GNP does not consider the services used to produce manufactured products because their value is already included in the price of the finished product. However, depreciation and indirect taxes such as sales tax are included in GNP. Mathematically, GNP is: Private Consumption + Government Expenditures + Private Investments + Exports - Imports + Inflow of factor income from abroad - Outflow of factor income to abroad = Gross National Product.

NNP (Net National Product) at factor cost and at market price: NNP is the net value of the goods and services produced by a country's nationals, whether overseas or resident, in the period being measured minus the amount of GNP required to purchase new goods to maintain existing depreciation (i.e. $NNP = GNP - \text{Depreciation}$). It should be noted that NNP is expressed in the currency of the nation it represents. In India, the NNP would be expressed as an Indian rupee, whereas it would be expressed in Euro for EU member nations, such as the Netherlands.

By definitional implication, NNP measures net output available for consumption and investment by consumers, producers and government. That suggests that NNP is the same as the national income at factor cost. Products are sold at market prices which

include the indirect taxes imposed by the government. For example, indirect taxes are levied on commodities such as GST on Packaged food and cloth and so on. As a result, the market value of the national product exceeds the income paid to the factors of production by the amount of indirect taxes. At the same time some products are subsidised which are sold below their production cost. Accordingly, the market price of these products is less than their factor cost. Because of these a difference arises between NNP at market price and NNP at factor cost. We may express NNP at market price as follows. $NNP \text{ at market price} = NNP \text{ at factor cost} - \text{Indirect Tax} + \text{Subsidies}$. In India and majority of the countries, it is the NNP at market price that is taken as the National Income of the country.

Personal Income: Personal income can be simply defined as the individual's total earnings from salaries, wages and bonuses received from employment or self-employment during a given period. Personal income determines the consumer consumption since it serves as an indicator of future demand for both goods and services in the market. (Relationship between personal income and national income will be discussed in the next section).

Disposable personal Income: Disposable personal income (DPI) is the total amount of money available for an individual to spend or save after taxes have been paid. DPI is different from personal income in that the former takes taxes into account. It should be noted that only income taxes are deducted from the personal income figure when calculating DPI.

1.4 RELATIONSHIP BETWEEN NATIONAL INCOME AND PERSONAL INCOME

The relationships between national income and personal income can be summarily discussed with the help of Figure 1.1.

Figure 1.1: Relationship between Different Aggregates of National Income[^]

			(i) Net factor income from abroad	(j) All types of transfer incomes ^{***}	(j)	
Income from domestic product accruing to	Govt. Sector	(h) Income of Govt. Sector ^{**}	(h)	x	x	
	Private Sector	Profit of a company	(g) Undistributed Profit	(g)	(g)	x
			(f) Dividend	(f)	(f)	(f)
			(e) Profit Tax	(e)	(e)	x
		(d) Mixed income [*]	(d)	(d)	(d)	
		(c) Interest	(c)	(c)	(c)	
		(b) Wages	(b)	(b)	(b)	
		(a) Rent	(a)	(a)	(a)	
		Domestic Income		National Income	Private Income	Personal Income

[^]Source: [https://www.zigya.com/study/? class=12&board=hbse&subject=Economics&book=Introductory+Macroeconomics&chapter=National+Income+Accounting&q_type=&q_topic=&q_category=&question_id=ECEN12051593](https://www.zigya.com/study/?class=12&board=hbse&subject=Economics&book=Introductory+Macroeconomics&chapter=National+Income+Accounting&q_type=&q_topic=&q_category=&question_id=ECEN12051593)

* Mixed income is the surplus or deficit accruing from production by unincorporated enterprises owned by households; it implicitly contains an element of remuneration for work done by the owner, or other members of the household, that cannot be separately identified from the return to the owner as entrepreneur but it excludes the operating surplus coming from owner-occupied dwellings.

(Source: <https://stats.oecd.org/glossary/detail.asp?ID=1668>)

** When showed separately of private sector.

*** Main forms of transfer income are: (i) interest on national debt, (ii) current transfers from government administrative departments, and (iii) net current transfers from rest of the world.

Now let us summarise the Table.

- Domestic Income = Rent (+) Wages (+) Interest (+) Mixed income (+) Profit Tax (+) Dividend (+) Undistributed Profit (+) Surplus of Govt. Sector (when showed separately of private sector).

Or

- Domestic income = Compensation of employees (+) Operating Surplus (+) Mixed Income.
- National Income = Domestic Income (+) Net Factor income from abroad.
- Private Income = National income (-) Surplus of government sector (+) All types of transfer incomes including national debt interest.
- Personal income = National income (-) surplus of government sector (-) corporate tax (-) undistributed profit (+) All type of transfer income including national debt interest.

Or

- Personal income = Private income (-) corporate tax (-) undistributed profit.
- Personal disposable income = personal income (-) personal taxes (including miscellaneous receipt of government).

Or

- Personal disposable income = National income (-) surplus of Government sector (-) Corporate tax (-) Undistributed profit (+) All type of transfer income (-) personal taxes.

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- Private income = Income from domestic product accruing to private sector (+) Net factor from abroad (+)
All types of transfer income including national debt interests.



CHECK YOUR PROGRESS

Q 3: What is meant by GNP? Answer in about 20 words.

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Q 4: What is meant by NNP and factor cost and at market price? Answer in about 60 words.

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Q 5: Distinguish between personal income and disposable income. Answer in about 60 words.

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1.5 LET US SUM UP

- Domestic income is the sum total of factor incomes generated by all the production units located within domestic territory of a country during an accounting period-usually a year

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- National is the sum total of factor incomes earned by normal residents of a country in a particular accounting period.
 - The difference between domestic and national income is the net factor income from abroad which is added to domestic income to get national income
 - GDP is the total value of final goods and services produced in a country during a period of time (usually a year)
 - NDP is a measure of the economic output of a country that accounts for depreciation
 - GNP is the value of all finished goods and services produced in a country during a period of time by her nationals
 - NNP is the net value of the goods and services produced by a country's nationals, whether overseas or resident, in the period being measured minus the amount of GNP required to purchase new goods to maintain existing depreciation
 - Personal income is the individual's total earnings from salaries, wages, pensions and bonuses received from employment or self-employment during a given period
 - Disposable personal income (DPI) is the total amount of money available for an individual to spend or save after taxes have been paid



1.6 FURTHER READING

- 1) Ajuja, H. L. (2007). Macroeconomics: Theory and Policy. New Delhi: S.Chand & Co.
- 2) Baumol, W. J. and Alan, S. B. (2006). Macroeconomics: Principles and Policy. New Delhi: Cengage Learning.
- 3) Jhingan, M. L. (2003). Macro-economic Theory. New Delhi: Vinda Publications Limited.



1.7 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q No 1: We can explain income from two perspectives. It may be explained from the context of the domestic territory and normal residents of a country.

Ans to Q No 2: The major difference between the two is the net factor income from abroad which is added to domestic income to get national income.

Ans to Q No 3: GNP is the value of all finished goods and services produced in a country during a period of time by her nationals.

Ans to Q No 4: NNP is the net value of the goods and services produced by a country's nationals, whether overseas or resident, in the period being measured minus the amount of GNP required to purchase new goods to maintain existing depreciation. National income at factor cost (also known as net national income) shows the income actually received by the factors of production.

Ans to Q No 5: Personal income can be simply defined as the individual's total earnings from salaries, wages and bonuses received from employment or self-employment during a given period. Disposable personal income (DPI) is the total amount of money available for an individual to spend or save after taxes have been paid. DPI is different from personal income in that the former takes taxes into account.



1.8 MODEL QUESTIONS

A) Short Questions (Answer each question in about 100 words)

Q 1: Make a comparative analysis between domestic income and national income

Q 2: Write short note on NNP at factor cost and at market price

B) Essay-type Questions (Answer each question in about 400-500 words)

Q 1: Critically discuss the following terms: GDP and NDP.

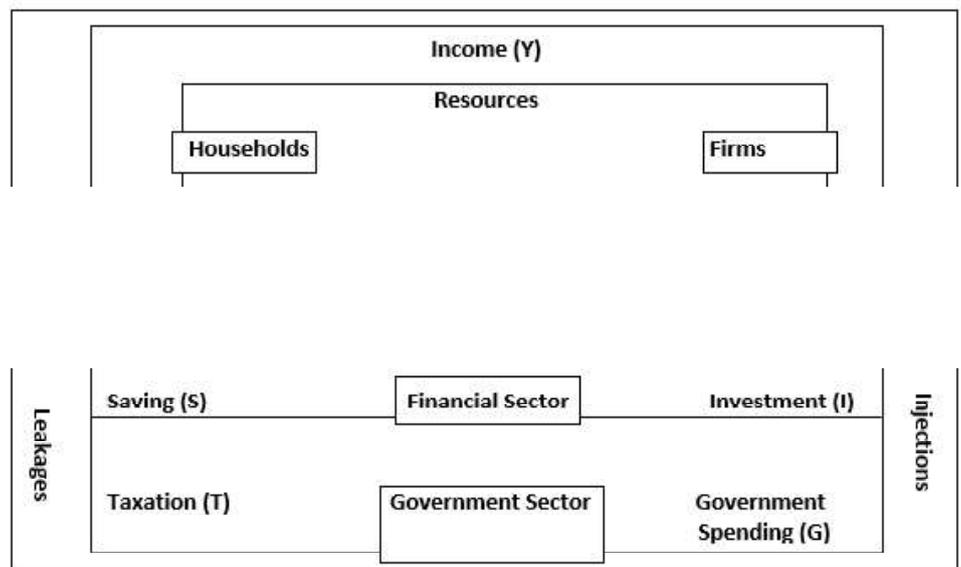
Q 2: Write an essay on personal income and disposable personal income, using yourself as an example.

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2.3.2 Circular Flow in Four Sector Model

The four sector model is considered to be complicated as compared to two and three sector model. But it is considered to be more realistic as a modern monetary economy comprises a network of four sector economy such as household sector, firms or producing sector, government sector and financial sector. In four sectors model, we have Household Sector, Business, Government, and External Sector. Here External sector sells goods and services to Household Sector and Business Sector in terms of imports and buys from the Business Sector in terms of exports. Each of these sectors of the economy receives some payments from the other sectors. Money is the factor that facilitates smooth exchanges of those transactions among the sectors. A residual of each market comes in capital market as saving which in turn is invested in firms and government sector. It has been observed that so long as leakage is equal to injections i.e. lending is equal to the borrowing, the circular flow will continue indefinitely. However, this job is to be done by financial institutions in the economy. The circular flow in a four sector economy can be explained with the help of Figure 2.2.

Figure 2.2: Circular Flow of Income in a Four Sector Economy



As shown in Figure 2.2, in a four sector economy, along with household, firms and government sector, financial sector is also there. There has been simultaneous flow of resources among these four sectors. There is flow from the rest of the sectors to the government sector in terms of tax and non-tax revenue. Similarly, there is outflow from the government sector in terms of spending incurred by the government. There has been again flow of resources from the household sector to financial sector and vice-versa. The household sector keeps their savings in financial sector to earn interest. There is flow of resources from the financial sector to the household sector in terms of loan to the household sector. Similarly, there has been inflow and outflow of resources between business firm and government sector. To make investment, the firms take loan from the financial sector and there is outflow of resources from the business firm to the financial sector in terms of repayment of the principal and interest. This is process of flow of resources among different sectors of an economy.

2.4 DIFFERENT FORMS OF NATIONAL INCOME ACCOUNTING

In this section of the chapter, a discussion is carried out regarding the different forms of National Income accounting. National Income Accounting is a set of procedures and techniques for measurement of income and output at aggregate level. The study of national income accounts is of great importance. A system of national income accounting does for the economy as a whole what private accounting does for the individual business firms. The different forms of national income accounts have already discussed in unit 1. In this section, we shall particularly focus on the concepts of social accounting, flow of fund accounting, input-output accounting and balance of payments accounting.

2.4.1 Social Accounting

In the previous section, we have discussed about national income accounting. In this section, a detailed discussion is carried out on the concept and importance of social accounting. Social accounting is often used as an umbrella term to describe a broad field of research and practice. It is the process of communicating the social and environmental effects of organizations' economic actions to particular interest groups within society and to society at large. It is generally observed that different terms has been used to represent Social Accounting such as social accounting and auditing, social accountability, social and environmental accounting, corporate social reporting, corporate social responsibility reporting, non-financial reporting or accounting. But the concept of Social Accounting is commonly used in the context of business, or corporate social responsibility (CSR), although any organisation, including NGOs, charities, and government agencies may engage in social accounting. In this context, Professor David Crowther, defines social accounting as an approach to reporting a firm's activities which stresses the need for the identification of socially relevant behaviour, the determination of those to whom the company is accountable for its social performance and the development of appropriate measures and reporting techniques. It is an important step in helping companies independently develop Corporate Social Responsibility programs which are shown to be much more effective than government mandated CSR.

The importance of social accounting can be assessed from the fact that it demonstrates the extent to which an organization is meeting its stated social or ethical goals. This is because business is a socio-economic activity; hence its objective should be the welfare of the society. The business firms should owe a responsibility towards solving many of the social problems. This is more relevant in the present age of growing technological, economic, cultural and social

awareness. The accounting system has not only to fulfill its stewardship function, but also to accomplish its social functions. It has been generally observed that changing environments and social parameters have compelled business enterprises to account and report information with regard to discharge of their social responsibilities. There has been significant rise in the importance of social accounting as a result of high level industrialization which has brought many problems to the society. To nullify the adverse effects of industrialization, it requires huge amounts of fund for disposal of their waste product and invest substantial amount in social activities. The concept of socialistic pattern of society, civil rights movement, environmental protection, ecological conservation groups, increasing awareness of society towards corporate social contribution etc are some of the other factors for increasing awareness about social awareness. The benefits of social accounting for a business firm have been listed below:

- It gives an opportunity to the business firm to fulfill its social obligation and to inform the general public as well as the government to form correct opinion.
- Social accounting helps to counter the adverse publicity or criticism leveled by hostile media and other social organizations.
- It also assists management in formulating appropriate policies and programmes.
- It is with the help of social accounting, the firm proves that they are not socially unethical in view of moral cultures and environmental degradation.
- Social accounting acts as an evidence of social commitment and improves motivation of the employees.
- Through social accounting, the management gets feedback on its policies aimed at the welfare of the society.
- It improves the confidence of the shareholders of the firm.



CHECK YOUR PROGRESS

Q 1: State whether the following statements are True (T) or False (F).

- (a) In a three sector model we have Household Sector, Business, and Government. (True/False).
- (b) Social Accounting includes environmental effects of organizations' economic actions. (Yes/No)

Q 2: What is meant by social accounting? Answer in about 60 words.

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2.4.2 Input-Output Accounting

Input-Output analysis is one of the very important areas of economic study. It has been frequently and rigorously used in economics. In economics, an input-output model is a quantitative economic technique that represents the interdependencies between different branches of a national economy or different regional economies. The famous economist Wassily Leontief is credited with developing this type of analysis. He was honoured with the Nobel Prize in Economics for his development of this model.

The input-output accounting model depicts inter-industry relationships within an economy, showing how output from one industrial sector may become an input to another industrial sector. In the inter-industry matrix, column entries typically represent inputs to an industrial sector, while row entries represent outputs from a given sector. This format therefore shows how dependent each

sector is on every other sector, both as a buyer of outputs from other sectors and as a supplier of inputs. Each column of the input-output matrix shows the monetary value of inputs to each sector and each row represents the value of each sector's outputs.

The following assumptions are adopted for input output analysis:

- Each sector (or industry) produces only one homogeneous commodity and there is no joint production.
- Each sector (or industry) use fixed input ratio (or factor combination)
- The production of each sector (or industry) is subject to constant return to scale.

Based on the above assumptions, the input output accounting deals with the problem of internal consistency in terms of equality of demand and supply of sectoral output. The output of a sector is used as intermediate inputs for other sectors of the economy as well as for final consumption. The final consumption includes household consumption, government consumption, investment demand, inventory demand and export demand of a particular output. But a part of the internal demand of a commodity for intermediate and final demand use is also met through import. Let us suppose that we have an economy with different sectors. Each sector produces 1 unit of a single homogeneous good. Assume that the sector, in order to produce 1 unit must use 1 units of input from other sector. Furthermore, assume that each sector sells some of its output to other sectors (intermediate output) and some of its output to consumers (final output, or final demand).

The input-output accounting of national income is usually presented in an input-output table which is based on a transaction matrix. A transaction matrix shows how the total output of one industry is distributed to all other industries as inputs and for final demand. It is required to be mention here that sometimes, a particular sector does supply inputs to itself such as agriculture provides itself

inputs such as seeds to sow in the next season. Similarly, other sectors also provide inputs to themselves. A simple input output matrix of an economy is shown in Table 2.1. Here, it is assumed that a particular sector is not supplying inputs to itself.

Table 2.1: Input-output Transaction Matrix

Sectors	→ Inputs				Output 5 (1+2+3+4)
	Agriculture 1	Manufacturing 2	Others 3	Final Demand 4	
Agriculture	-	15	5	22	42
Manufacturing	12	-	17	16	45
Others	8	12	-	30	50
Imports	7	5	8	7	27
Primary inputs	15	13	20	-	48
Total Gross Input	42	45	50	75	212

In Table 2.1, the total gross output of the agricultural sector of the economy is set in the first row. It consists of Rs 15 crores to the manufacturing sector, Rs 5 crores to the other sectors, and Rs 22 crores to satisfy the final demand which comprises exports (X), capital (K), government consumption (G) and personal consumption (C). Thus the total gross output of the agriculture sector is Rs 42 crores consisting of 20 crores of intermediate products (manufacturing and others) and 22 crores of final demand. Similarly out of the total output of Rs 45 crores of manufacturing sector, Rs 29 crores is used for self consumption, and rest of the Rs 16 crores is used for final demand. Likewise, other rows of the input matrix show the distribution of output of other sectors and from imports and primary inputs. Primary inputs are the sum of payments as wages, profits, etc, and depreciation. They are also called value added.

If we analyze the input matrix column wise, the first column shows inputs to the agricultural sector coming from the various sectors of the economy. For example, inputs worth Rs 15 crores from the agriculture sector, Rs 12 crores from the other sectors, 5

crores from import and Rs 13 crores of primary inputs are used in the manufacturing sector.

The input output accounting model is of tremendous practical value and importance. The importance of the input output accounting has been mentioned below:

- With the help of input-output model, one can know the varieties and quantities of goods which the producer and the other firms buy and sell to each other. In this way, he can make the necessary adjustments and thus improve his business prospect vis-à-vis other producers.
- It is possible to analyze the effects of prolonged strike, of a war and of a business cycle.
- Input-output model provides a more detailed breakdown of the macro aggregates and money flows. As a result, it is used extensively for national income accounting.
- The input-output accounting is considered useful in national economic planning. It provides necessary information about the structural coefficients of the various sectors of the economy during a period of time or at a point of time which can be utilized for the optimum allocation of the economy's resources towards end.
- The input-output accounting model gives information regarding inter-relations among firms and industries about possible trends toward combination.
- But there are some limitations of the input output accounting analysis. The limitation of the input-output model has been provided below:
- Constancy of Input Coefficient: This assumption of constant input coefficient is unrealistic as some industries may have identical capital structure and some may have heavy capital requirements while others may use no capital.

- The assumption of fixed coefficient of production ignores the possibility of factor substitution. There is always the possibility of some substitutions even in the short period, while substitution possibilities are likely to be relatively greater over a longer period.
- The rigidity of input output model cannot reflect such phenomenon as bottlenecks, increasing costs etc.
- The input output model is considered as restricted model as it lays exclusive emphasis on the production side of the economy. It does not tell us why the inputs and output are of a particular pattern in the economy.
- This analysis operates on the basis of a fixed quantity of an input for the production of per-unit of output. As factors are mostly indivisible, the increases in outputs are not expected to be in proportion to the increase in inputs.
- The input output model works on the equation which cannot be solved easily. Here, the models of equations are prepared and then large numbers of data are collected. Equations require through knowledge of higher mathematics and the collection of data is not so easy. This makes the construction of input-output model difficult.



CHECK YOUR PROGRESS

Q 3: What does a transaction matrix exhibit? Answer in about 20 words.

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2.4.3 Flow of Fund Accounting

The national income accounts as discussed above do not tell anything about monetary or financial transactions whereby one sector places its savings at the disposal of the other sectors of the economy by means of loans, capital transfers, etc.

In fact, the national income accounts do not take into consideration the financial dimensions of economic activity and they describe product accounts as if they are operated through barter system. The flow of funds accounts are meant to supplement national income and product accounts. The flow of funds accounts was developed by the economist from United States Prof. Morris Albert Copeland to overcome the weaknesses of national income accounting. He criticized 20th century macroeconomic theory and contributed to the development of modern flow of fund theory.

The flow of funds accounts list the sources of all funds received and the uses to which they are put within the economy. They show the financial transactions among different sectors of the economy and the link between saving and investment aggregates with lending and borrowing by them. The account for each sector reveals all the sources of funds whether from income or borrowing and all the uses to which they are put whether for spending or lending. This way of looking at financial transactions is known as the flow of funds approach or sources and uses of funds. In the flow of funds accounts, all changes in assets are recorded as uses and all changes in liabilities are recorded as sources. Uses of funds are increases in assets if positive or decreases in assets if negative. They refer to capital expenditures or real investment spending which involve the purchase of real assets. The flow of fund account can be explained with the help of a hypothetical example as produced in Table 2.2.

Table 2.2: Flow of Fund Account Matrix

Receipt from	Accounts					(6) Total
	(1) Production	(2) Consumption	(3) Government	(4) Capital	(5) Foreign	
Payment to						
Production	-	279	12	9	9	309
Consumption	219	-	45	15	6	285
Government	30	6	-	15	6	57
Capital	36	-	-	-	3	39
Foreign	24	-	-	-	-	24
Total	309	285	57	39	24	714

In Table 2.2, each account has one row which shows the payments, and one column which shows the receipts. Row 1 shows payments made by the business sector to the tune of Rs 279 crores to the consumption sector as wages, salaries, etc., Rs 12 crore to the government as taxes, Rs 9 crores as corporate saving to the capital account of firms and Rs 9 crores for importing goods and services from abroad. Similarly row 2 shows the payment made to the business sector by the household sector amounting to Rs 219 for buying goods and services from it, Rs 45 crore to the government in paying taxes, and insurance contribution, Rs 15 crore to the investment sector in the form of saving by household consumers and Rs 6 crore as investment in foreign securities, expenses in education, travel etc. in foreign countries. Outflow of the government sector has been shown by row 3. Row 4 reveal the capital account of the economy where Rs 36 crore is made to the business sector for capital goods and net change in inventories, and Rs 3 crores are net foreign inventories. The foreign account or rest of the world account has been shown in row 5. Similarly, the receipt from each sector can be explained column wise.

The importance of flow of fund account lies in the fact that it presents a comprehensive and systematic analysis of the financial transaction of the economy.

- The flow of fund account is generally considered as superior to national income accounts as the latter do not reveal the financial transaction in the economy.
- The flow of fund account is used extensively for studying the behavior of the individual financial institutions of the economy.
- Professor Goldsmith is of the view that flow of fund accounts brings the various activities of an economy into explicit statistical relationship with one another.
- The flow of fund account traces the financial flows that interact with and influence the real saving-investment process. They also

record various financial transaction underlying saving and investment.

- The flow of fund account provides essential raw materials for any comprehensive analysis of capital market behavior and thus helps to identify the role of financial institution in the generation of income, savings and expenditure.
- The financing pattern of government deficit and generation of surplus budget can be known from the flow of fund accounting.
- The flow of fund account also provides information regarding results of transaction in government and corporate securities, net increase in deposits and foreign assets in the economy.
- They help in analyzing the impact of monetary policies in bringing stability in an economy
- But although it has a number of advantages over national income accounts, the flow of fund accounts are beset with a number of problems which have been discussed below:
- The flow of fund account are considered as more complicated as compared to national income accounts as they involve the detailed financial aggregation of large number of sectors.
- Valuation of assets is another problem of flow of fund accounts as many assets, claims and obligations have no fixed value.
- The problem of inclusion of non-producible real asset arises in the flow of fund accounts as economist has not been able to decide as to the type of non-producible real asset to include in the flow of fund accounts. Economists have failed to decide about the inclusion of human wealth in flow of fund accounts.

But despite these limitations, the flow of fund accounts has utility in economic analysis and it supplements the national income accounts. It also helps in understanding the social accounts of an economy.

2.4.4 Balance of Payment Accounting

In the previous section of the chapter, we have discussed about flow of fund accounts. In this section of the chapter, a discussion is carried out about balance of payments accounts.

The balance of payments accounts abbreviated as B.O.P. or BoP of a country is the record of all economic transactions between the residents of the country and the rest of world in a particular period usually over a quarter of a year or more commonly over a year. Here, residents' means businesses, individuals and government agencies, including citizens temporarily living abroad but excluding local subsidiaries of foreign corporations. The balance of payments accounting is double entry where all transactions are either debit or credit transactions. Credit transactions result in receipt of payment from foreigners such as merchandise exports, transportation and travel receipts, income received from investments abroad, gifts received from foreign residents, remittances from abroad, foreign portfolio investment, foreign direct investment and aid received from foreign governments etc. Debit transactions involve payments to foreigners such as merchandise imports, transportation and travel expenditures, and income paid on investments of foreigners, gifts to foreign residents, aid given by home government, overseas investments by home country residents, repayment of loans etc. Each credit transaction has a balancing debit transaction, and vice versa, so the overall balance of payments is always in balance. The current Account (all real transfers) of balance of payments includes merchandise trade, service trade and transfers. The Capital and Financial Account (transfers of ownership and financial assets and liabilities) broadly includes transaction in real assets, financial instruments and central bank reserve. The BOP (Current Account) is the flow component while BOP (Capital Account) is the stock component. Both can be positive or negative. But collectively they become balanced or zero. Due to the double entry

book keeping system a surplus (deficit) in the current account will be exactly balanced by a deficit (surplus) in the capital account. As a result, a BOP always balances. The study of balance of payments has become a matter of great interest to all concerned as it reveals the financial condition of a country. Other uses of balance of payments of a country are as follows:

- Balance of payment accounts has great value in forecasting and evaluating business and economic conditions of a country.
- Balance of payments accounts are used to determine the appropriateness of the exchange value of currency. It can also give information about economic solvency of a country.
- The most important use of balance of payment account is that it reveals the nature, size, composition and direction of a country's international trade.
- It clarifies the foreign exchange position of a country and thus helps the businessmen in selecting market for their products.
- It helps the government to decide the trade, industrial and economic policies of the country.
- A simple example of balance of payments accounts has been provided below in Table 2.3. The credits are generally shown on the left hand side and debits are shown on the right hand side.

Table 2.3: A hypothetical example Balance of Payment Accounts

Credits	Amount (in Rs)	Debits	Amount (in Rs)
Exports of goods(visible)	600	Imports of Goods	800
Export of services (invisible)	200	Import of service	100
Unilateral transfers (gifts, remittances, indemnities, etc. received from foreigners)	100	Unilateral transfers(gifts, indemnities etc. paid to foreigners)	150
Capital Receipts (borrowings from abroad, capital repayments by, or sale of assets to the foreigners)	200	Capital payments(lending to, capital repayments to, or purchase of assets from foreigners)	50
Total receipt	1100	Total Payments	1100

As shown in Table 2.3, the sum of all transaction recorded in the balance of payments must be equal to zero. In our example, total receipts of Rs 1100 crore are equal to total payments of Rs 1100. This is because every credit appearing in the current account has a corresponding debit in the capital account and vice-versa. As we can see above, the current account deficit is Rs.150 (Rs.900-Rs.1050) while capital account surplus is exactly Rs.150 (Rs.200-Rs.150).



CHECK YOUR PROGRESS

Q 4: State whether the following statements are True (T) or False (F).

- (a) In flow of fund accounting, uses of funds are considered increases in assets if positive or decreases in assets if negative. (True/False).
- (b) The current Account (all real transfers) of balance of payments includes Merchandise trade. (True/False)

Q 5: Why the overall balance in a balance of payments statements is always balanced? Answer in about 40 words.

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2.5 LET US SUM UP

- The circular flow of income or circular flow is a model of the economy where exchanges between economic agents are represented by flows of money, goods as well as services etc.
- National Income Accounting provides a set of procedures and techniques for measurement of income and output at an aggregate level.

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- Social Accounting is the process of communicating the social and environmental effects of organizations' economic actions to particular interest groups within society and to society at large.
 - In economics, an input-output model is a quantitative economic technique that represents the interdependencies between different branches of a national economy or different regional economies.
 - The flow of funds accounts list the sources of all funds received and the uses to which they are put within the economy. They show the financial transactions among different sectors of the economy and the link between saving and investment aggregates with lending and borrowing by them.
 - BoP of a country is the record of all economic transactions between the residents of the country and the rest of world in a particular period usually over a quarter of a year or more commonly over a year.



2.6 FURTHER READING

- 1) Ajuja, H. L. (2007). Macroeconomics: Theory and Policy. New Delhi: S.Chand & Co.
- 2) Baumol, W. J. and Alan, S. B. (2006). Macroeconomics: Principles and Policy. New Delhi: Cengage Learning.
- 3) Jhingan, M. L. (2003). Macro-economic Theory. New Delhi: Vinda Publications Limited.



2.7 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q No 1: (a) True (b) True.

Ans to Q No 2: Social accounting is an approach to reporting a firm's activities which reflects its socially relevant behaviour, the determination of those to whom the company is accountable for its social performance and the development of appropriate measures and reporting techniques. It is an important step in helping companies independently develop Corporate Social Responsibility programs which are shown to be much more effective than government mandated CSR.

Ans to Q No 3: A transaction matrix shows how the total output of one industry is distributed to all other industries as inputs and for final demand.

Ans to Q No 4: The balance of payments accounting is double entry where all transactions are either debit or credit transactions. In a BOP statement, each credit transaction has a balancing debit transaction, and vice versa. As a result, the overall balance of payments is always in a BOP statement is always balanced.

Ans to Q No 5: (a) True (b) True.



2.8 MODEL QUESTIONS

A) Short Questions (Answer the following questions in about 150 words)

Q 1: Briefly discuss the concept and social accounting.

Q 2: Discuss the importance of social accounting.

B) Essay type Questions (Answer the following questions in about 300 - 500 words)

Q 1: Explain in detail the importance of flow of fund accounts of an economy.

Q 2: Discuss the balance of payments accounts with a hypothetical example.

Q 3: What is input output accounting? Make a detailed analysis of input output accounting.

Q 4: Explain the concept and importance of social accounting.

Q 5: Discuss the limitation and importance of balance of payment accounts of a country.

Q 6: Explain the components of Balance of Payments.

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