

4. Circular Flow of Income in a Two Sector Economy

Let us now describe the functioning of a simplified two sector economy.

Assumptions

- (i) There are only two sectors in the economy, namely, households and firms.
- (ii) Households supply factor services to firms and firms hire factor services from households.
- (iii) Households spend their entire income on consumption.
- (iv) Firms sell all that is produced to the households.
- (v) There is no government or foreign trade.

Such an economy as described above has two types of markets. First, market for goods and services i.e. **product market**; and second, market for factors of production i.e. **factor market**.

In simple economy, factors of production use their remunerations to buy the goods and services which they assisted in producing. The aggregate consumption by the households of the economy is equal to the aggregate expenditure on goods and services produced by the firms in the economy. The entire income of the economy, thus, comes back to the firms in form of sales revenue. Since there is no leakage (in form of tax or saving etc.) from the system, total factor payments by firms and total consumption expenditure by households are equal.

In the next period, the firms will once again produce goods and services and again pay remuneration to the factors of production for their continuous services. These remunerations will once again be used to buy goods and services. Hence year after year, aggregate income of this simple economy will be flowing in a circular way. This is shown in Fig.2.3. The inner two arrows indicate real flows which show flow of factor services from households to the firms and corresponding flow of goods and services from firms to households. The outer two arrows reflect money flows which show flow of factor payments from firms to households and the corresponding flow of consumption expenditure from households to the firms. The circular flows in the diagram clearly prove that income flows in the form of factor income and consumption expenditure, and product flows in the form of factor services and final goods and services are equal.

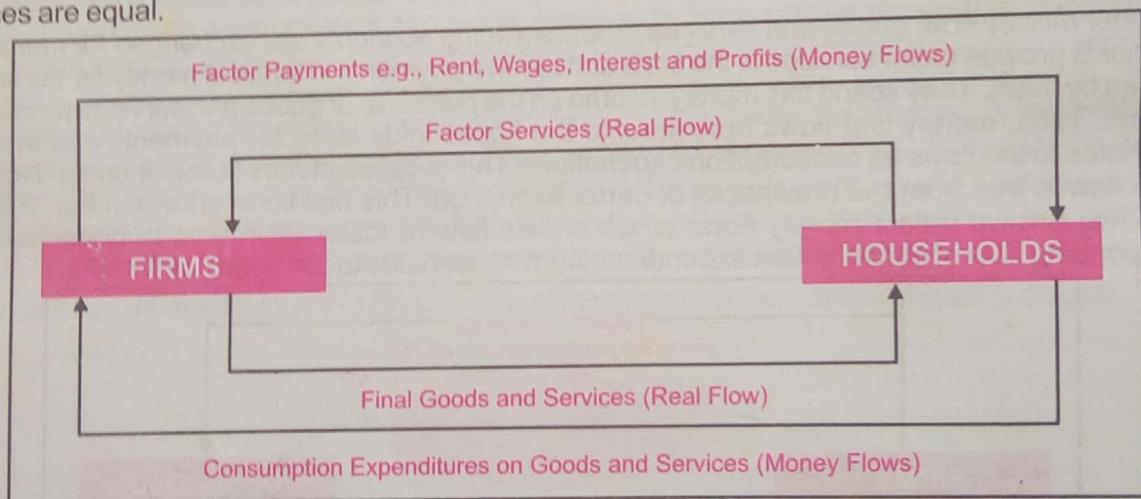


Fig. 2.3 : Circular flow of income in a Two sector economy

As a result, we can derive the following observations:

- (i) Total production of goods and services by firms = Total consumption of goods and services by the households.
- (ii) Factor payments by firms = Factor incomes of the households.
- (iii) Consumption expenditure by households = Sales Revenue of firms.
- (iv) Real flows in form of factor services and final goods and services = Money flows of income and expenditures of firms and households.

Circular Flow of Income with Financial System

So far in our presentation of circular flow of income, we have not taken into account the role of saving and investment. This is for the simple reason that we have assumed that the two sectors—households and firms do not save at all. But in fact, households and firms save a part of their income, which constitutes a leakage from the circular flow of income. The saved amount is made available in the financial system. Firms borrow for purposes of investment, which becomes injection into the circular flow. Financial institutions act as intermediaries between savers and investors or lenders and borrowers. They play a very important role in the development of an economy. Hence, the understanding of macroeconomic activities will be incomplete without inclusion of financial system in our circular flow model.

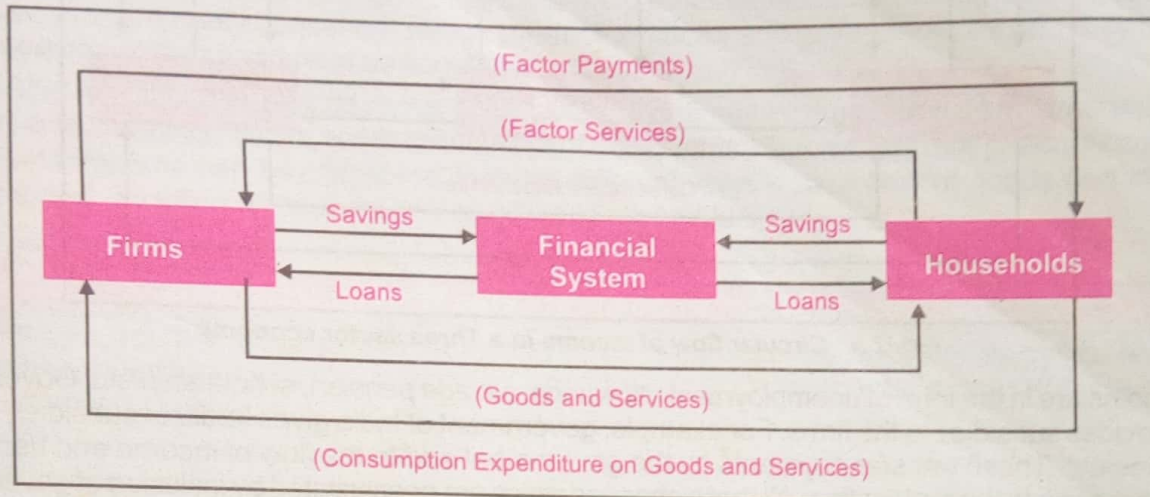


Fig. 2.4 : Flow of Income in a Two Sector Economy with Financial System

Households are the net lenders. This is because of generation of personal savings which is the difference between household income and consumption. **Firms, on the other hand, are net borrowers** as they have to borrow for new investments. All lenders and borrowers are canalized through the financial system. So long as lendings and borrowings are equal, the circular flow of income will continue indefinitely. When lendings and borrowings are equal, leakages must be equal to injections.

Assuming $S=I$ in the economy in a year we derive the following conclusions.

- (i) Since all income is not spent on consumption and a part of it is saved, income is divided into consumption (C) and saving (s)

$$\text{Thus } y = c + s \text{ ----- (i)}$$

- (ii) Savings (s) are equal to investments (I).

$$\text{Thus } S = I \text{ ----- (ii)}$$

- (iii) By substituting I for S in equation (i), we get

$$Y = C + I$$

Y in terms of C+S shows factor incomes generated in the economy during a year. And y in terms of C+I reflects aggregate expenditure of the economy on goods and services produced. Since income generated is identical with production, we can thus conclude.

Production = Income generated (C+S) = Aggregate expenditure.

This, **triple identity** corresponds to three phases of the circular flow of income.

5. Circular Flow of Income in a Three Sector Economy

Let us now introduce the government sector and obtain a three sector model. The role of government is important. It acts as regulator and as an agent of promoting public welfare in the country. The relationships between households and the government and between firms and government can be

leakages from the circular flow of income. Government also purchases goods and services from households and firms. These government purchases are **injections** into the circular flow of income. Apart from purchases, government also makes transfer payments. Transfer payments to

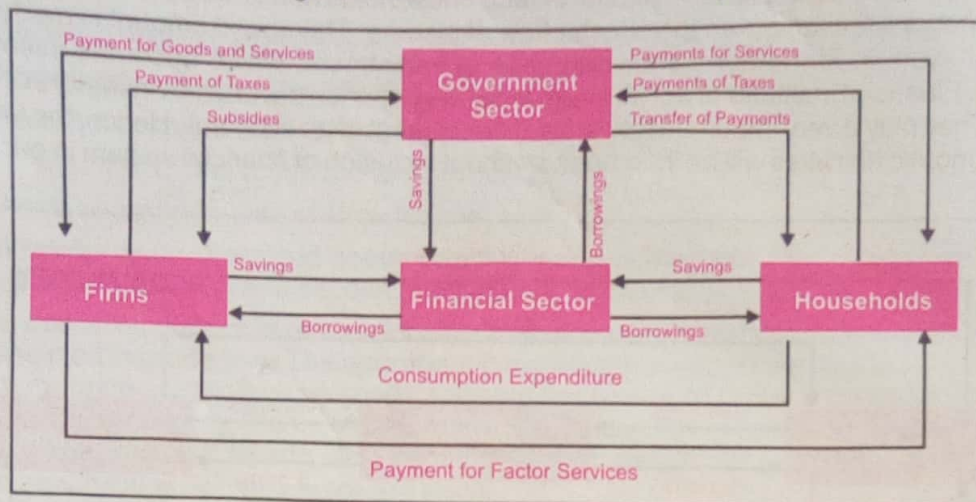


Fig. 2.5 : Circular flow of income in a Three sector economy

households are in the form of unemployment allowance, old age pension, scholarship etc. Government also provides subsidies to the firms. For example, government of India gives fertilizer subsidies, power subsidies etc. These transfer payments by the government add to the flow of income and hence are also injections into the circular flow. All these changes which are necessitated by inclusion of government sector are shown in Fig.2.5

6. Circular Flow of Income in a Four Sector Economy

So far we have studied the circular flow of income in a closed economy. A *closed economy* is one which has no economic relations with other countries of the world. But in actual world situations, all modern economies do have transactions with **the rest of the world** i.e. **the external sector**. The domestic economy is connected with the rest of the world through international trade and capital flows. Firms and households buy goods and services from other countries which are called **imports**. When payments are made for these imports, less money income is left to spend on goods and services

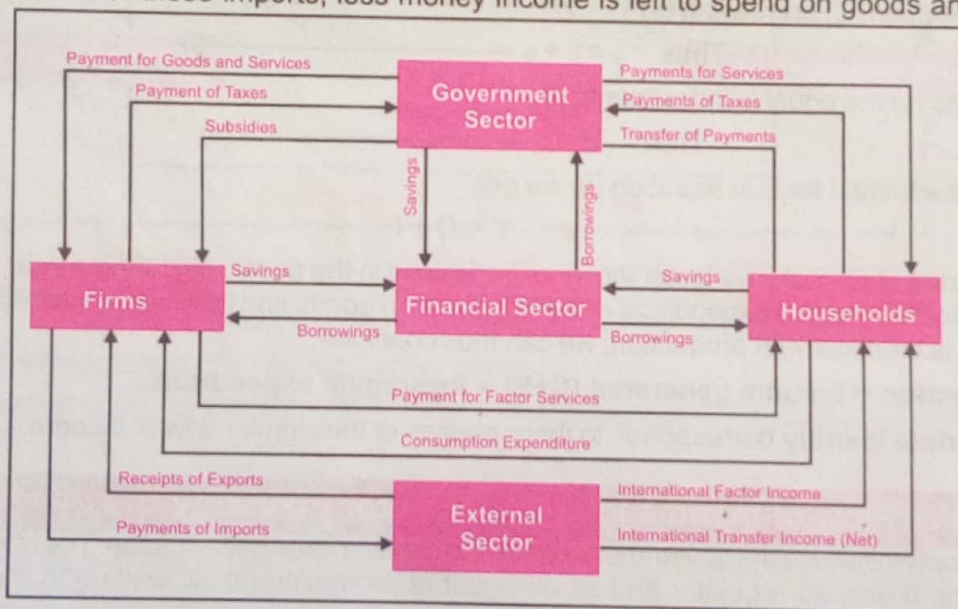


Fig. 2.6 : The Circular Flow of Income in a Four-Sector Economy

produced in the domestic economy. Hence, imports are leakages from the circular flow of income. In the same way, exports are injections to the circular flow of income in the domestic economy.

Apart from trade, factor payments are received from and made to the rest of the world. Further, transfer payments are received from and made to the rest of the world. All these external transactions are shown in Fig 2.6

7. Importance of the Study of Circular Flow of Income Models

The study of circular flow of income is important in the following ways:

- (i) Circular flow models help us to understand the mutual interdependence among different sectors of the economy namely household sector, production sector and government sector. They provide knowledge of the structure of an economy.
- (ii) Circular flow of income facilitates the estimation of national income. There are three phases in circular flow of income viz, production phase, income phase and expenditure phase. Accordingly national income can be measured in three different ways – as a flow of goods and services produced, as a flow of incomes and as a flow of expenditures.
- (iii) Circular flow models give information regarding injections and withdrawals also.

Box 2.1 Income is a flow and flow of Income is circular

Income is a flow concept as it is estimated per unit of time period. For example, national income is measured per year, income of a household is measured per month etc. Thus, it is measured periodically.

Flow of income is circular. It flows in a circular way across the different sectors of the economy. In a two sector economy, income received by the owners of factors of production (that is households) is spent by them on the purchase of goods and services produced by the producers. Thus, income goes back from where it had come. This flow of income is circular forever because producers would always require factor services from the households and the households would always depend upon the producers for the supply of goods and services for the satisfaction of their demand.

Box- 2.2 Leakages and Injections

Leakage means withdrawal from the flow. When households and firms save (S) part of their incomes it constitutes leakages. They may be in form of tax payments (T) and imports (M) also. Leakages reduce the flow of income. Injections, on the other hand, means introduction of income into the flow. When households and firms borrow the savings, they constitute injections. Injections increase the flow of income. Injections can take the forms of investment (I), government spending (G) and exports (X). So long as leakages (i.e. savings) are equal to injections (i.e. lendings) circular flow of income continue indefinitely. Financial institutions play the role of intermediaries. Thus, the major sources of leakages and injections can be summed up as under:

1. Two-sector Economy:

Leakage : Saving (S)
Injection : Investment (I)

2. Three-sector Economy:

Leakage : Saving (S) + Taxes (T)
Injection : Investment + Government Expenditure (G)

3. Four-sector Economy:

Leakage : Saving + Taxes + Imports (M)
Injection : Investment + Government Expenditure + Exports (X)

Thus, in a four-sector economy, the condition of equilibrium of an economy is

Leakages = Injections (or withdrawals)

$$S + T + M = I + G + X$$