

NATIONAL INCOME (NI)

It is the summation of market value of all final goods and services /rewards of factors of production /expenditures of both private and public sectors in an economy during a year within and outside of its national border provided that depreciation allowance and indirect taxes are subtracted from GNP and subsidies¹ are added in GNP. In other words, if we subtract indirect taxes (IT) from NNP and add subsidies (S) in NNP, we find national income Thus:

$$NI = NNP - IT + S$$

KEYNESIAN THEORY OF INCOME AND EMPLOYMENT

INTRODUCTION.

The classical model of full employment and Laissez-Fair got much more importance during the late 19th century and in early 20th century. The salient feature of this model was *existence of full employment* which could only be obtained through the automatic adjustment mechanism in labor market, goods market and credit market. In other words, the full employment of human and natural resources is brought through the competitive forces of demand and supply in the presence of a free enterprise economy. But this ideal situation of full employment collapsed during 1930's "Great Depression" when there was not only general over-production but a mass unemployment was also observed. Then John Maynard Keynes wrote his esteemed book "General Theory" in 1936. In such book he not only criticised the classcists but also presented his own theory of income and employment. Here, first of all we present salient features of Keynes Theory of income and employment. Afterwards we will see certain extensions of such theory.

Salient Features of Keynes Theory of Income and Employment

1. Keynes presented the concept of determination of equilibrium level of NI. According to Keynes, equilibrium level of NI takes place where aggregate demand (aggregate expenditures) is equal to aggregate supply (aggregate output).
2. The equilibrium level of NI may be at full employment, may be at above full employment and may be at below full employment. According to Keynes the full employment corresponds to the situation of maximum possible level of NI. In other words, full employment represents the maximum level of output which could be obtained by utilizing all the natural and human resources of the economy. Thus, if at the level of full employment, aggregate demand (AD) is equal to aggregate supply (AS), the equilibrium level of NI will be maintained at full employment. If at the level of full employment, AD is more than AS, the equilibrium level of NI will take place at above full employment. It is explained as : Whenever at the level of full employment, aggregate expenditures exceed the aggregate output, the demand for

goods and services will increase. In this situation, the profit of producers will increase. For the sake of more profits, they will increase investment. As a result NI, etc. will increase. But at the level of full employment, the output and NI is at its maximum. The increase in NI after full employment is just in monetary terms. Its actual value is same to that of NI at full employment. The monetary increase in NI represents inflationary gap in the economy.

If at the level of full employment, AD is less than AS, the equilibrium level of NI will take place at below full employment. It is explained as : Whenever at the level of full employment aggregate expenditures are less than aggregate output, then the demand for goods and services will decrease. The prices will decrease; the producers will face losses. They will decrease investment. As a result, NI will decrease. In this situation, there will be deflation or deflationary gap in the economy.

3. Keynes introduced the idea of "Effective Demand". By effective demand he means the aggregate demand, the aggregate supply and the level of national income. Keynes says that *higher the level of effective demand in the country, higher will be the level of income and employment in the country.* This also means that *it is the deficiency of effective demand which is responsible for unemployment in the country.* While the excessive effective demand results in inflation or over-full employment in the economy.

4. Contrary to classical utopianism of "Laissez-Fair", Keynes advocated for state intervention to remove inflationary and deflationary gap. Particularly, he emphasized upon deficit budgets to remove unemployment. He suggests to launch the public works programmes by printing new money. This remedy will have the effect of increasing the level of employment. The increased employment will result in increasing the effective demand. Hence, the unsold goods will be sold out. All this means that fiscal action on the part of state will have the effect of removing unemployment and depression.

After considering certain salient features of Keynes theory of income, we present how the level of NI is determined in Keynes theory of income and employment.

DETERMINATION OF EQUILIBRIUM LEVEL OF INCOME AND EMPLOYMENT IN TWO-SECTOR ECONOMY

Assumptions of the model :

1. A two sector economy, i.e. the economy which consists of consumers and producers. Hence, there is no government and no foreign trade. Accordingly NI, will be as:

$$Y = C + I$$

while G (government expenditures) and T (Taxes) are zero, i.e., $G = 0, T = 0$

2. The consumption expenditures (C) has the following equation

$$C = C_0 + cY$$

where C_0 = autonomous consumption and cY = induced consumption,

while $c = MPC$. Moreover $C_0 > 0$ and $c < 1$.

3. The investment expenditures (I) consist of autonomous investment

$I = I_0$. This shows that investment is not influenced by changes in income.

4. The saving equation is as ; $S = -S_0 + sY$ where ' $-S_0$ ' are the autonomous savings and sY represents induced savings.
5. The output side of NI will be as : $Y = C + S$.

Basic Thesis of the Model

According to Keynes: "The equilibrium level of NI and employment is determined where aggregate demand (aggregate expenditures) is equal to aggregate supply (aggregate output)". It is as : $C + I = C + S$

From the above proposition one can deduce that the equilibrium level of NI will also be determined where investment is equal to saving. It is as : $I = S$

Thus, we see that there are two approaches to present equilibrium level of NI. i.e.,

- (1) AD and AS method,
- (2) Leakages (savings) and injections (investment) method

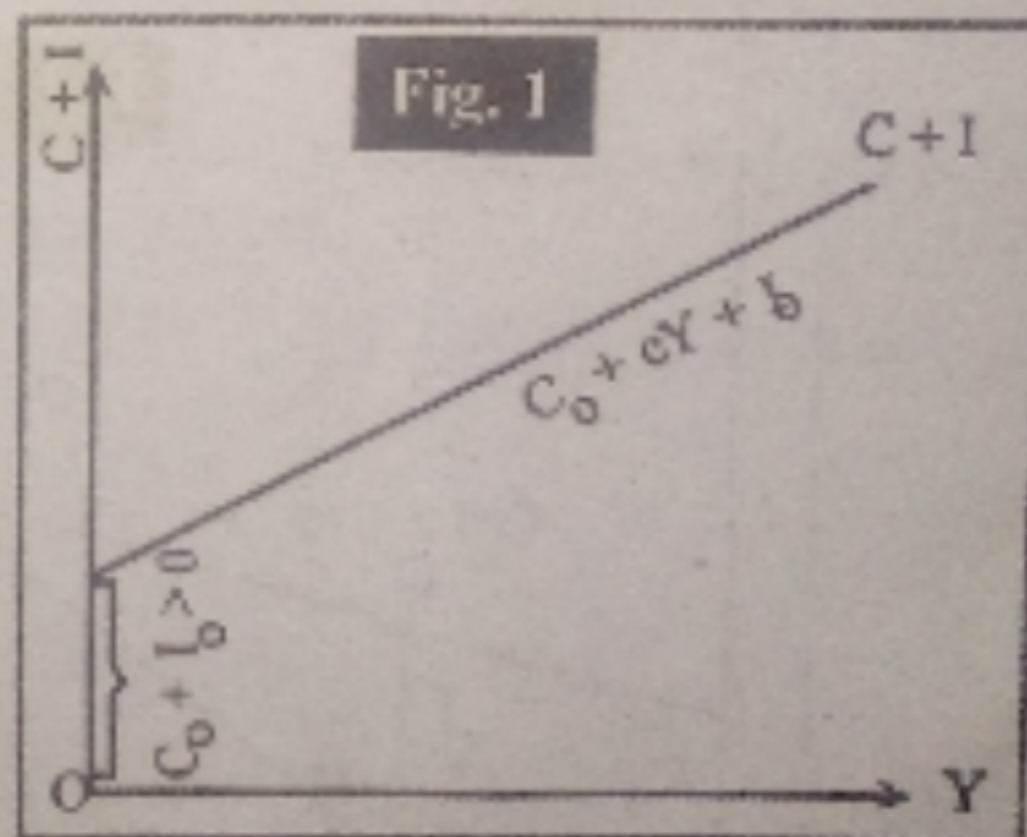
Now we present them in turn.

1. EQUILIBRIUM LEVEL OF NI — AD/AS METHOD

Aggregate Demand (AD), $Y = C + I$.

In a two sector economy, AD consists of total demand for goods and services. In other words, AD is national income which has been earned by the factors of production against rendering of their services. Such earnings will be spent by them on consumption goods and on investment goods. Thus, on the one side, AD represents total income earned, while, on the other side, AD consists of total expenditures of the economy. Alongwith increase in NI, the AD or aggregate expenditures for C and I go on to increase. It is shown in Fig. 1.

In Fig. 1, we see that alongwith increase in NI, $AD = C + I$ goes on to increase. We also see that at zero income there are fixed consumption expenditures as well as fixed or autonomous investment, i.e., $(C_0 + I_0)$.

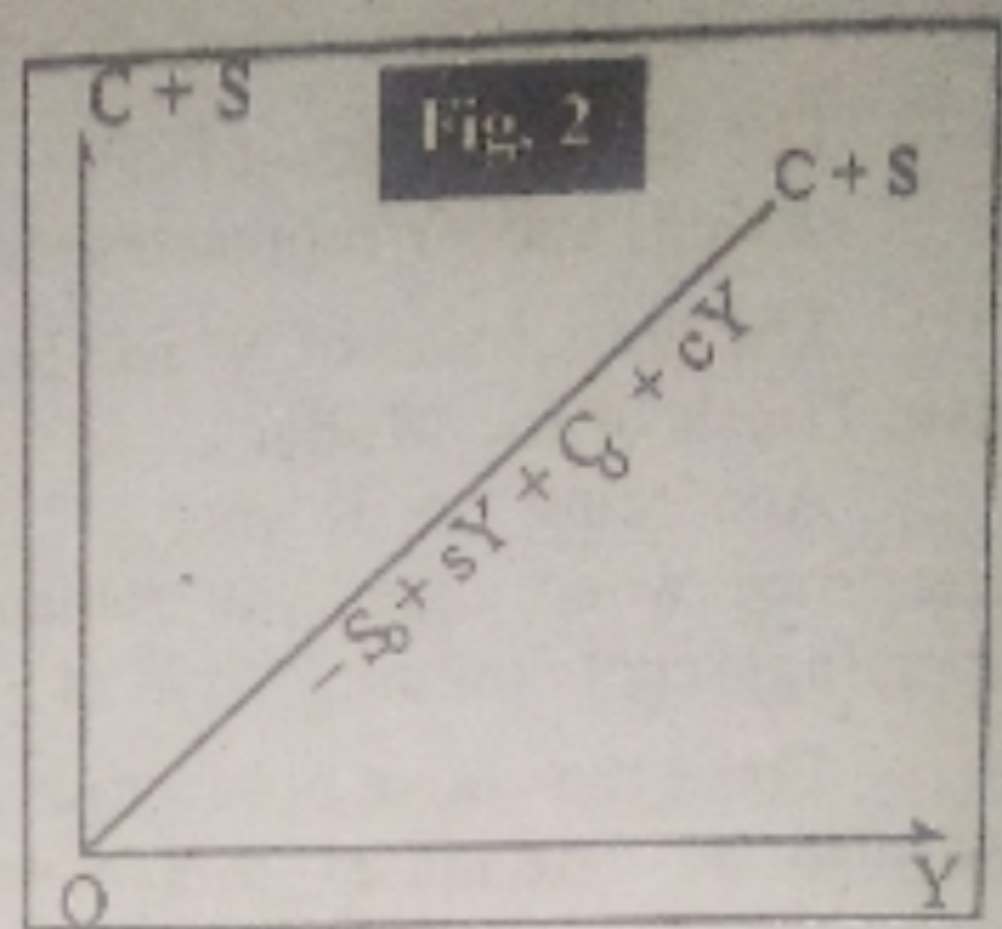


Aggregate Supply (AS) $Y = C + S$

In a two sector economy, AS consists of total output produced in the economy. In other words, AS is national income which has been produced by the factors of production. When the factors of production produce the goods and services they

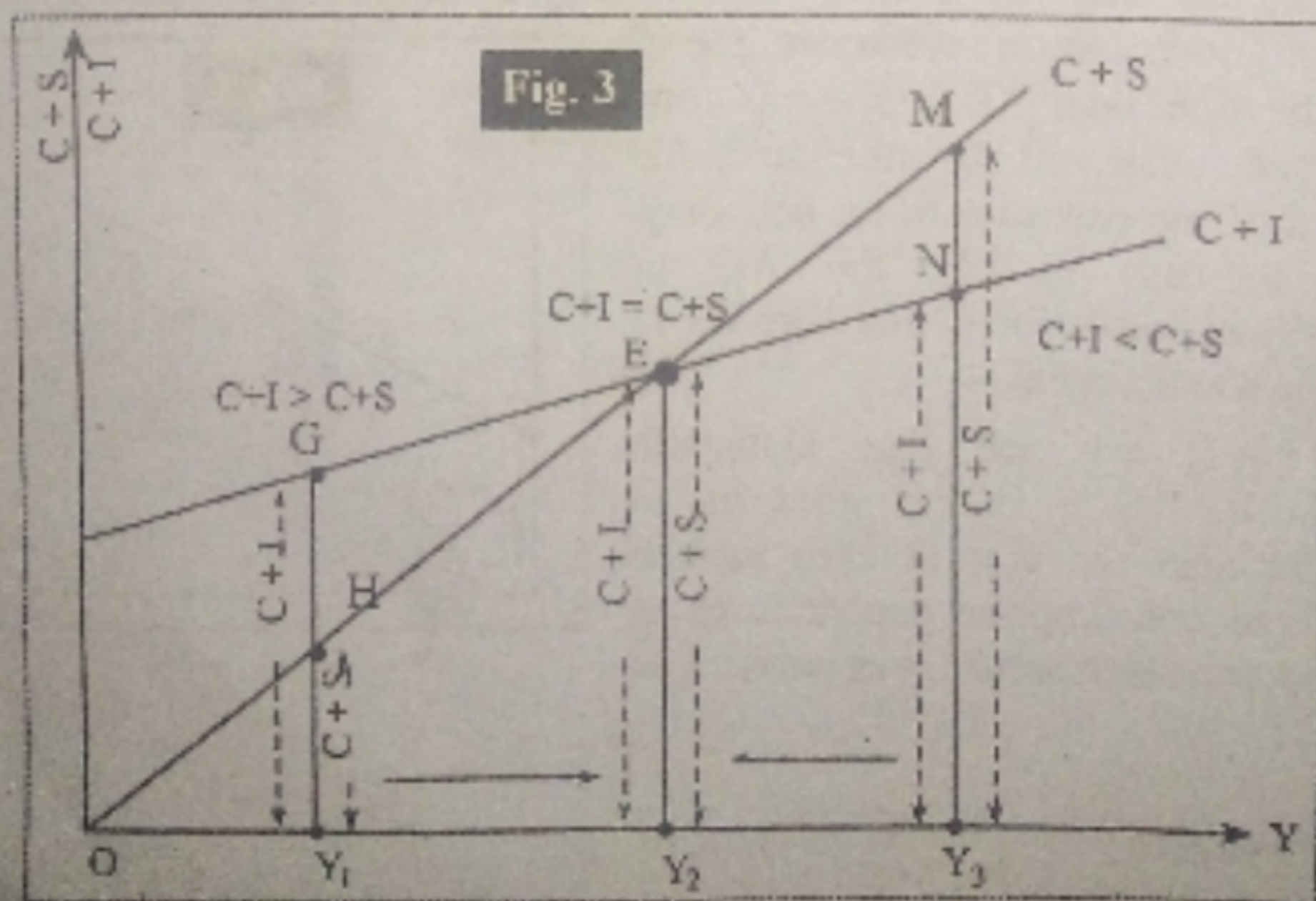
get payments against their services. A part of such earnings will be spent by the earners on consumption goods and a part will be saved. Thus, on the one side, AS represents total goods and services produced while, on the other side, AS consists of total factor payments. Alongwith increase in output of the economy, the factors payments also increase. It is shown in Fig. 2.

The Fig. 2 shows that as the level of produced goods and services increases, the level of factor earnings also increases which will be split in consumption and savings.



Determination of Equilibrium Level of NI

According to Keynes, the equilibrium level of NI in a two sector economy will be determined when $AD = AS$. Such equality of AD and AS is also known as *Keynesian cross I*. The point where AD and AS are equal is known as *Effective Demand Point*. The effective demand means the aggregate expenditures of the economy, the aggregate output of the economy and the level of national income of the economy. According to Keynes, higher the level of effective demand of the economy, higher will be the level of income and employment of the economy. Now with the help of Fig. 3, we represent the equilibrium level of NI.



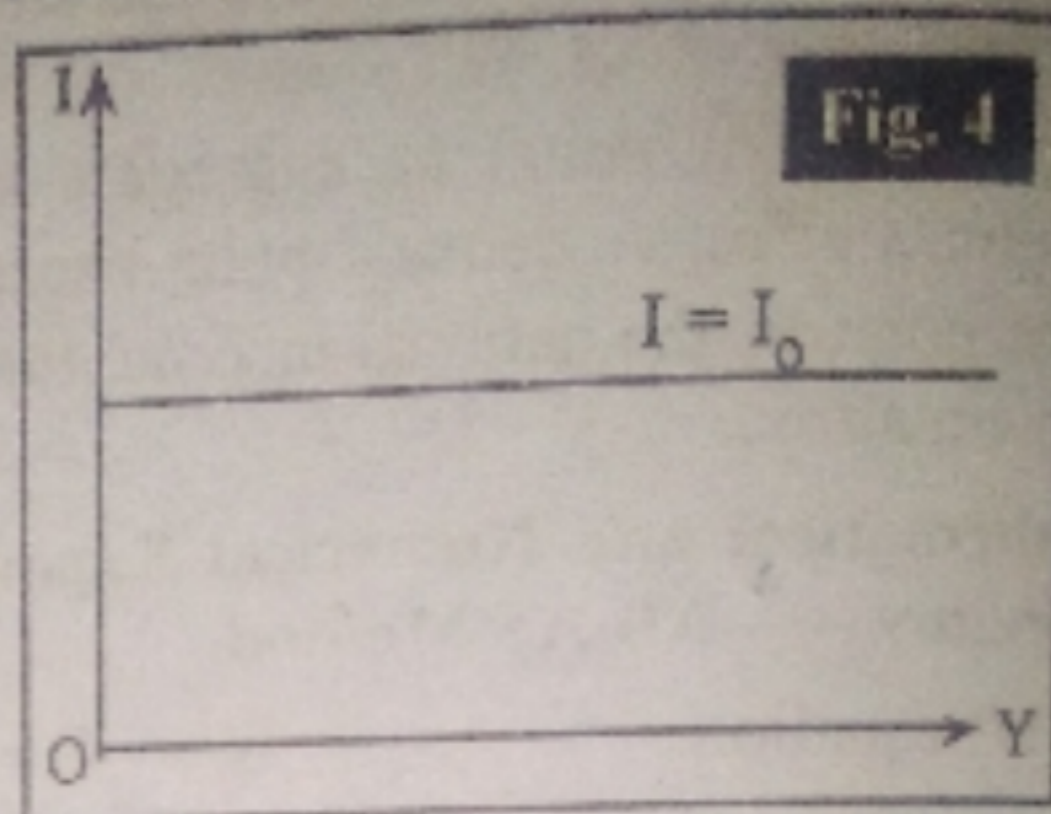
In Fig. 3, the equilibrium level of NI is determined at E where $C + I = C + S$. Accordingly, OY_2 is the equilibrium level of NI. The equilibrium does not take place at OY_1 because, here $C + I > C + S$. This would have the effect of increasing the income. Again the level of NI will not be determined at OY_3 . It is because that

$C + I < C + S$. This would have the effect of reducing the income of the country. Thus we find that it is OY_2 level of income where aggregate demand (aggregate expenditures) is equal to aggregate supply (aggregate product). The point E also represents effective demand point because here $C + I = C + S = OY_3$. In other words, at the point E, the national income, the expenditures and output of the economy have been equalized.

2. Equilibrium Level of NI — Savings-Investment Method

Investment (I).

As we told earlier, that $Y = C + I$. Accordingly $Y - C = I$. In other words, that part of income which is spent on the purposes other than consumption is called *investment*. Keynes assumed that investment is autonomous, i.e., $I = I_0$. This means that the level of investment is not influenced by the changes in the level of NI. It is shown in Fig. 4.

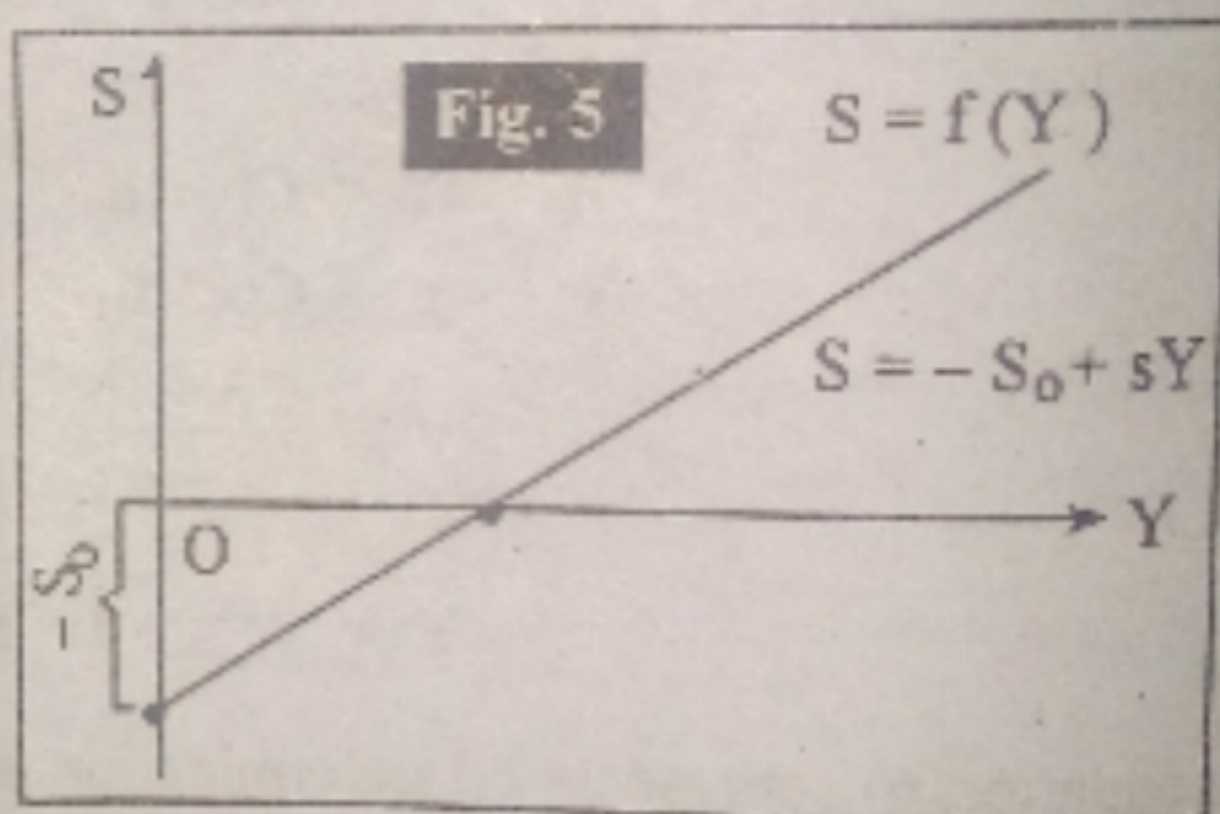


Savings (S)

As we told earlier, that $Y = C + S$. Accordingly, $Y - C = S$. In other words, the part of income which is not consumed is called *saving*. According to Keynes, savings depend upon income, i.e., $S = f(Y)$.

The saving function, in the standard form, is written as $S = -S_0 + sY$.

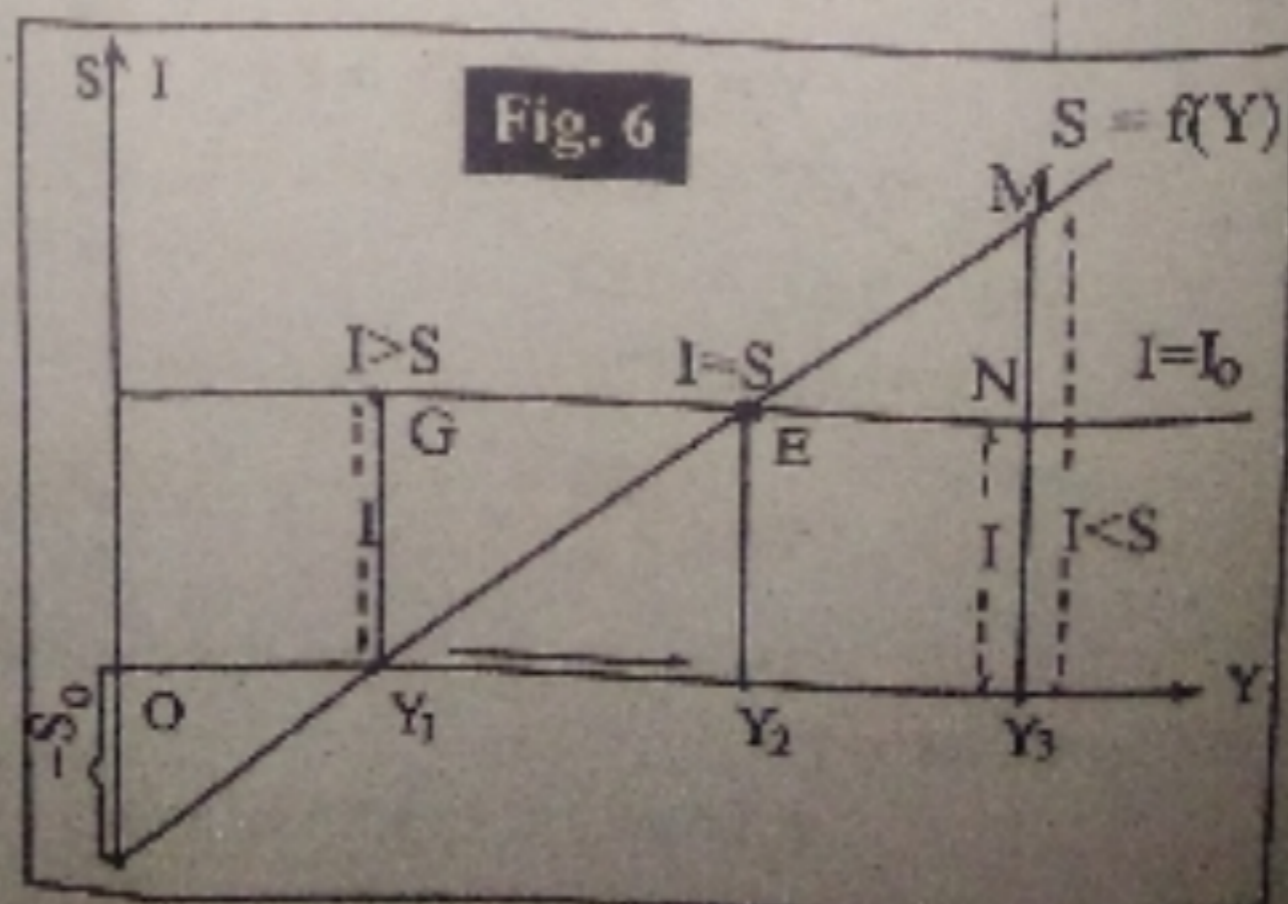
The first term of the saving function represents the -ve Y-intercept of savings schedule. While the second term of saving function represents induced savings, i.e., savings increase along with increase in income. It is shown in Fig. 5.



Determination of Equilibrium Level Of NI

According to Keynes, the Equilibrium Level Of NI, in a two sector economy, will also be determined where $I = S$. Such equality of I and S is known as *Keynesian Cross II*. It is shown in Fig. 6.

In Fig. 6, the equilibrium level Of NI is determined where $I = S$. Accordingly, OY_2 is the equilibrium level Of NI. The equilibrium does not take place at OY_1 , because, here $I > S$. This would result in increasing the level of NI. Again, OY_3 is not equilibrium level Of NI, because here $I < S$. This would result in decreasing the level of NI. Thus,



we find that OY_2 is the equilibrium level Of NI.

CIRCULAR FLOW OF NATIONAL INCOME

Earlier we presented three methods of NI measurement, i.e., NI at market prices, NI at factor costs and NI at total expenditure method. If we analyse these methods, we will come to know that three methods of NI measurement give the same result. They are like different flows which ultimately merge. Better explanation of this is made with the help of the concept of circular flow of national income. Before constructing a circular flow, it is told that an economy may consist of two sectors, i.e., the economy is consisting of consumers and producers. Accordingly, NI equations will be as

$$Y = C + I \quad \text{and} \quad Y = C + S$$

An economy may consist of three sectors, i.e., the economy is consisting of consumers, producers and government. Accordingly, NI equations will be

$$Y = C + I + G \quad \text{and} \quad Y = C + S + T$$

An economy may consist of four sectors, i.e., the economy is consisting of consumers, producers, government and foreign trade. Accordingly, NI equations will be as

$$Y = C + I + G + M \quad \text{and} \quad Y = C + S + T + X$$

We will show circular flow of NI in two sector and three sector economies.

Circular Flow of NI in Two Sector Economy

The circular flow of NI is based upon two principles.

1. As a result of each economic transaction the seller gets how much is spent by the buyer.
2. If goods and services have a flow towards a particular direction, the money has also a flow towards the other direction.

As we are constructing the circular flow of NI in two sector economy, then whatsoever is produced by the producers is sold out to the consumers. (The goods produced represent NI) while the consumers spend all of their earnings on the consumption of goods produced by the producers (Such expenditures also represent NI). The consumers or household provide the services of four factors to the producers. Against such services, the factors of production get the remunerations (Such earnings also represent NI).

Now we formulate a circular flow of NI in a two-sector economy where $Y = C$. Accordingly, there are neither savings nor investments.

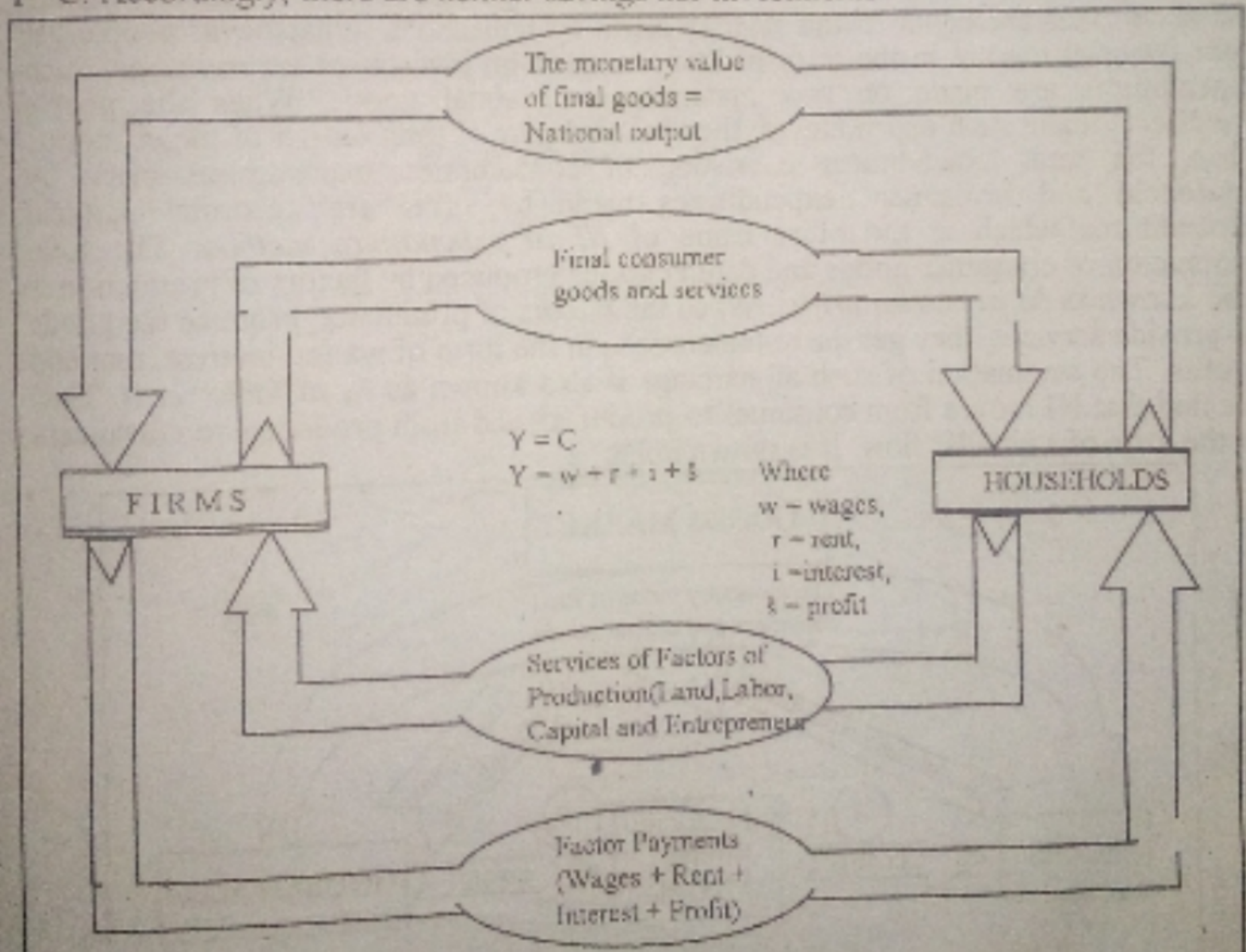


Fig. 1

In Fig. 1, we have assumed an economy where there are households and firms. The flows in the upper part of the figure represent goods market. Here the firms provide final goods to the consumers. While the households make the payments to the producers of such goods and services in the form of money. While the flows in the

lower part of the figure represent factor market. Here, the households provide services of factors of production to the firms. Against such services, the firms make payments to the factors of production in the form of money. Whatsoever the factors earn against their services, its summation represents NI. The summation of goods produced also represents NI. Again the total expenditures made by household also represent NI.

Thus, we find that NI in a flow moves from household to firms and from firms to household. The such movement of income is given the name of *Circular Flow of NI*.