অর্থনীতি বিভাগ
কার্মাইকেল কলেজ, রংপুর।
টেলিফোন : ০৫২১-৬৭৩৮৩

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স্মারক নং:-
Memo No.

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Date:

to be added with national income and foreigner's income in the country is to exclude.

(b) Transferred income - such as- Pension, relief etc will be excluded from national income.

(c) undistributed profit of the firms and industries are to be included in the national income.

(d) while computing national income dual counting should carefully be avoided.

(e) Net income from international trade have to include.

(3) Cost/Expenditure method:

In this method national income is computed by adding up all consumption expenditure and investment expenditure of the people in the society.

i.e, $Y = C + I$

Some steps should be taken also while computing national income following expenditure method. Such as —

(a) While calculating total expenditure, interest paid on unproductive govt. debt should be excluded.

(b) Transfer payment should exclude from total expenditure.

(c) Indirect tax and subsidy also have to exclude from total cost.

(d) Depreciation cost of the capital goods have to be excluded from total cost.

Finally, it can be noted that, what ever method is followed in the compution of national income the result will be the same - so to say.

— x —

MAC 2nd A

Q: (a) What is National Income?
(b) What are the methods of NI-accounting?

Date

Ans: National income is the total monetary value of all goods and services produced in a country in a particular period (one year)

some important definitions of NI are given below:

(i) According to Marshall, "The Labourer and capital of a country acting on its natural resources produce annually a certain net aggregate of commodities, material and immaterial including services of all kinds. This is the true net annual income or revenue of the country or national dividend."

(ii) Pigou defined NI as - "National income is that part of objective income of the community, including of course income derived from abroad which can be measured in money."

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(3) According to Fisher, "The national dividend or income consists solely of services as received by ultimate consumers, whether from their material or from the human environments."

Mar — Q. What is meant by- Circular Flow of Income?

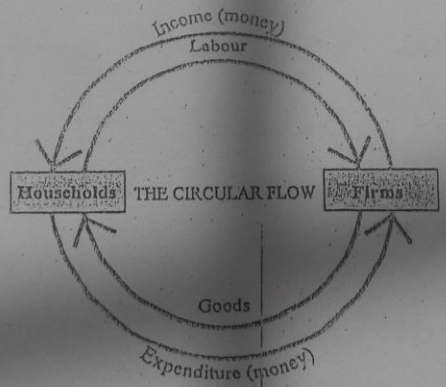
Ans.

CIRCULAR FLOW OF INCOME

The circular flow of income or circular flow is a model of the economy in which the major exchanges are represented as flows of money, goods and services, etc. between economic agents. The circular flow of income describes the movement of expenditure and income throughout the economy.

In an economy households provide factors of production, such as labour, to firms. Firms use these factors to produce goods and services which they sell to the households. ~~(This is represented by the red, inner loop in the diagram below.)~~

The households then spend money on the goods and services produced by firms. This money is then used by firms to pay the households for their work, through wages. ~~(This is represented by the green, outer loop in the diagram below.)~~ This process repeats itself and forms the circular flow of income.



In the diagram above, the expenditure on goods and services is equal to the income received by households. Therefore in an economy:

National income = National expenditure

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Methods of Computing National Income:

There are three methods of computing National Income. eg. Production Method, Income Method and Expenditure Method.

(1) Production Method: According to this method national income can be computed by adding up the money value of all the goods and Service produced in a particular period of time.

While following this method the following pre-cautionary measure should be taken:

(a) To avoid double counting only final products should be added.

(b) while computing money value indirect tax must be excluded from the market price.

(c) Depreciation cost should exclude from national income.

(d) while measuring national income, income from abroad must be included.

(e) Goods and services that bears no money value should be excluded from the compution of national income.

(2) Income Method: under this method national income is computed by adding up the remuneration or income of the different factors used in a particular period - i.e, one year. So, national income is equal to The summation of total rent, total wage, total interest and total profit.

While following this method some factors should carefully be considered. e.g.

(a) Income of the citizen living abroad

Mac-2

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Q. Give example of Macro Economic Model -

A hypothetical Macro Economic Model is given below as for example :

Suppose, $Y = C + I$; Here,

C = Consumption
I = Investment
Y = National Income.

If,

$C = 50 + .5Y$

$I = 100$

Then find the value of Y.

Now, we can find the value of Y with the given value of C and I, as —

$Y = C + I$

or $y = 50 + .5Y + 100$

~~or $y = 60$~~

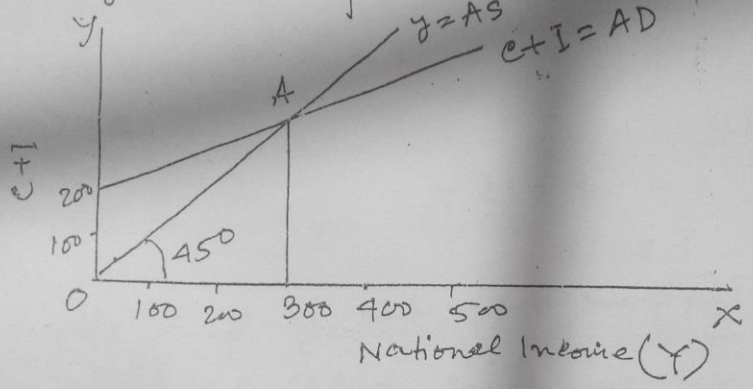
or $y - .5y = 150$

or $.5y = 150$

$\therefore y = 150 / .5$

$= 300$

also
The model can ~~also~~ be shown diagramatically as follows:



In the above diagram Consumption and Investment is expressed/measured on the axis oy and national income on ox axis.

C+I = AD indicates aggregate demand curve. 45° angled ~~Goode~~ line shows aggregate supply. A is the equilibrium point, where, C+I = AD curve intersects Y = AS curve. Here equilibrium y is 300.

Aggregate Supply Curve: The As means the total money value of goods and services produced in an economy in a year. Two important constitutes of AS are

1. The SS of output of final consumer goods & services in a year
2. The output of capital goods which are also called invest goods or producer goods because they help in producing further goods.

Graphical Representation:

Depending on the above mentioned concepts we can draw the Keynesian cross, diagram such as:

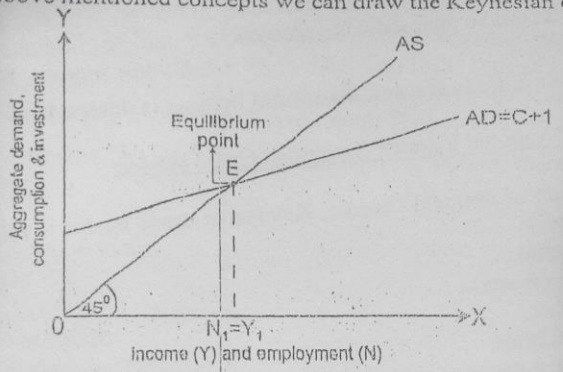


Fig: Determination of NI: Simple Keynesian model employment

All points on 45^0 lines have the property that along with this distance, measured on the vertical axis equals the distance, measured on the horizontal axis. Our considered AS curve is 45^0 because it shows that valve of Aggregate output increases at constant a rate.

In the above figure two curves intersect at point E.

- So E in the equilibrium point and
- Oy_1 represents the equilibrium level of NI.

Now income can't be in equilibrium at levels smaller or greater than oy_1 because in these cases,

- AD>AS and
- AD<AS respectively, which are not equilibrium condition. So our equilibrium condition is AD= AS which is satisfied at point E .So oy_1 is our equilibrium NI. Point E shows "economy wide equilibrium".

Q. What do you mean by "GNP GAP"? Discuss it by using appropriate Graph? What is the way to solve this problem?

Ans:

GNP Gap:

Definition: We know that the "GNP GAP" is the difference between "potential GNP" and "Actual GNP" .It "GNP GAP" persists overtime, there is unemployment. So output has not grown at a rate it should be i.e.

GNP GAP= Potential GNP- Actual GNP

2. Thus all the incomes generated by firms' supply will be transformed into demand for their products, either directly in the form of consumption or indirectly via withdrawals and then injections. There will thus be no deficiency of demand.

3. Although aggregate demand might equal aggregate supply, consumers may shift their demand away form some industries in favors of others. Unemployment may then temporarily occur. But then wages would fall in the declining industries and rise in the expanding industries. Equilibrium would be restored. Unemployment would be eliminated.

(Ref: John solman, Economics, 3rd /471-472)

Q: Explain how equilibrium level of national income is determined by a Keynesian model.

Ans:

Determination of National Income: Keynesian Cross Model:

Assumption:

In the determination of national income, Keynesian cross model is relevant in the context of the short run only since –

1. the stock of capital,
2. techniques of production
3. efficiency of lobar,
4. The size of population
5. Forms of business org ----------have been assumed to remain constant in this model.

Further in the model of income determination, Keynes assumed that price level in the economy remains unchanged.

Now we will show how how the equilibrium level of NI is determined through the intersection of AD and AS:

Aggregate Demand:

We know,

AD = C+I,

Where, C = Consumption demand and I = Investment demand

Consumption demand (c) again depends upon

- The "propensity to consume" of the commodity and
- The level of national income.

And investment demand (I) depends upon

- The " Marginal efficiency of capital" and
- The Rate of interest.

So AD curve is upward slopping like:

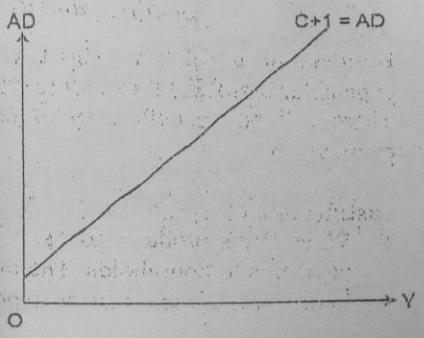


Fig: Aggregate Demand Curve

In the above figure: 1- The 45^0 line shows that the level of aggregate demand is equal to the level of output & constant AD curve is parallel to horizontal axis.

Equilibrium point is E & both output & AD are equal to 6 (trillion dollars).

Point E is equilibrium output, at which the quantity of output produced is exactly equal to the quantity demanded.

Two Situations:

Situations -1: Suppose that firms were producing some other amount, say 8 units expecting on be able to sell that amount. However AD is only 6 units. The firms thus sell 6 units of output. Firms would be unable to sell all the produce and would find their warehouses; filling with inventories of unsold goods & this is not planned or desired investment. They would then cut their output.

When AD – The amount people want to buy is not equal to output, there is unplanned inventory investment or disinvestment.

We summarize this as:

$$IU = Y - AD$$

Where,
IU = Unplanned investment
Y = Output &
AD= Aggregate Demand

This is shown by the vertical arrows in fig-1, we see that

- When Y>6, There is unplanned inventory Investment
- When Y<6, There are unplanned reduction in inventories

Situations-2: if output were less than 6, say 4, firms would either run out of goods or be running down their inventories. They would therefore increase output.

Thus at point E, the equilibrium level of output, firms are selling as much as they produce, people are buying the amount they want to purchase & there is no tendency for the level of output to change.

∴ Output is at its equilibrium when

$$Y = AD \rightarrow \text{this is National income Identity}$$

(Ref: Rudiger Dornbusch, Macroeconomics, 6th/57-58)

Nice to know:

There are three essential points:-

1. The economy is in equilibrium when there are no unintended changes in inventories; firms invest what they plan to invest & households consume what they wish of consume.
2. Unintended inventory changes are a signal to firms of a mismatch between AD & AS
3. Equilibrium output is influenced by AD

14-A

Q: Explain how is equilibrium level of National income determined?
Q. How is determined National equilibrium output by using 45^0 line & AD curve?
Q. Write short notes on "National income identity".

Ans.

National equilibrium output:

Definition: National equilibrium output (income) as the level of output at which aggregate demand for goods is equal to output.

Equilibrium condition:

$$Y = AD \text{ ---------- (1)}$$

We know that Aggregate demand is the total amount of goods demanded in the economy.

$$AD = C+I+G+Nx$$
$$= C+I+G+(X-M) \text{ ---------- (11)}$$

Where,

C = Consumption Expenditures
I = Investment Expenditures
G = Government purchase of goods and services
N_x = Net Export
X = Export & M = Import

From equation (1) and (11), we get

$Y = C+I+G+(X-M)$ ---- This is Equilibrium Condition or national income identity.

Determining National equilibrium output by using 45^0 line & AD curve: AD is the amount of goods people want to buy where as investment & Consumption in the national income accounts the amounts of the goods are actually bought.

The investment measured in the national accounts includes involuntary or unintended (undesired) inventory changes, which occur when firms find themselves selling more of fewer goods than they had planned to sell.

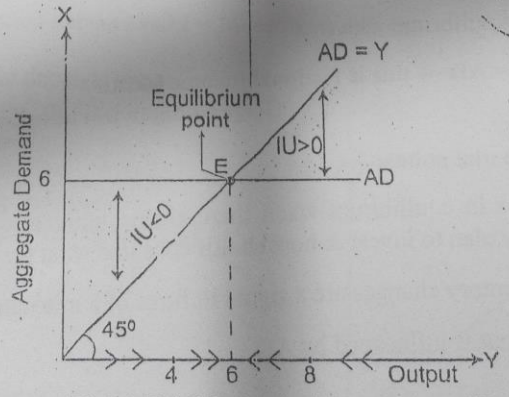


Fig: 1-Equilibrium with constant AD

resource services. Individuals receive wages, interest, and rent for the use of resource services, and profits for entrepreneurial talents. In the lower portion of the outer flow, individuals spend their money income purchasing goods and services produced by the business sector.

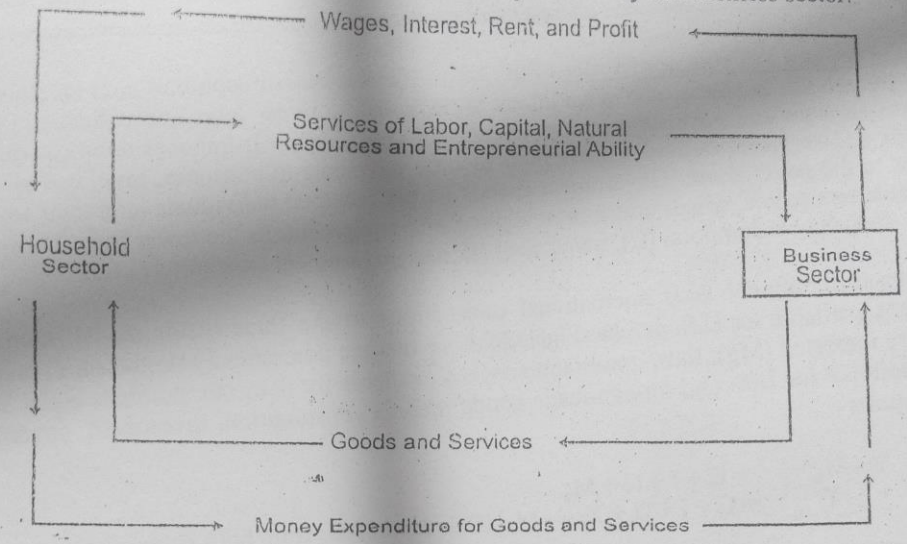


Fig: 2-1: Two-sector circular model

Fig. 2-2 presents the circular flow of financial payments associated with the production and sale of final output; it differs from the financial payments in the outer flow in Fig. 2-1 in that individuals save a portion of their money income. The amount that individuals save equals the amount of new plant and or equipment purchased by the business sector. Household saving is a leakage from the circular flow: saving leakages are reinjected into the circular flow by investment spending. i.e., by the business sector's purchase of plant and equipment.

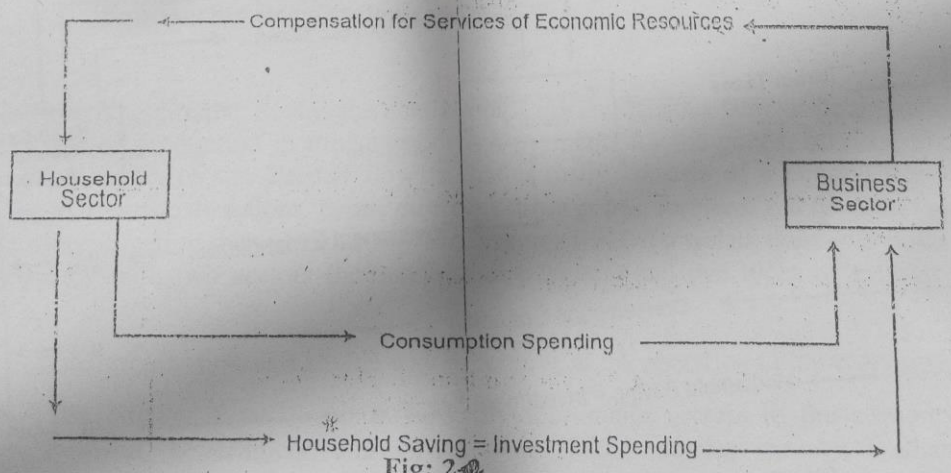


Fig: 2-2

2. **A Three- and Four Sector Model:** Fig. 2-3 presents a closed economy circular flow among the household, business, and government sectors. In the upper loop, individuals are paid for factor services and government receives indirect taxes, which it imposes upon the output of goods and services. Individuals use their income payments to consume, save, and pa income taxes to the government. Government spends its tax receipts; individuals lend their savings to the business sector, which invest in new plant and equipment. In the lower loop, the spending flow includes consumption (C), investment (I), and government expenditures (G).

A four-sector model adds international transactions to the three-sector model. Goods and services available for U.S. purchase include those that ate domestically produced(Y) and those that are imported (Mg); thus, goods and services available for domestic purchase equal $Y + M_g$. Expenditures for U.S. and foreign-made goods include consumption, investment, government, and exports

Thus,

$$Y - M_g = C + I + G + M_g.$$

$$Y = C + I + G + X_g - M_g. \text{ (Subtracting } M_g \text{ from both sides of the equation).}$$

Where,

Y represents domestic output.

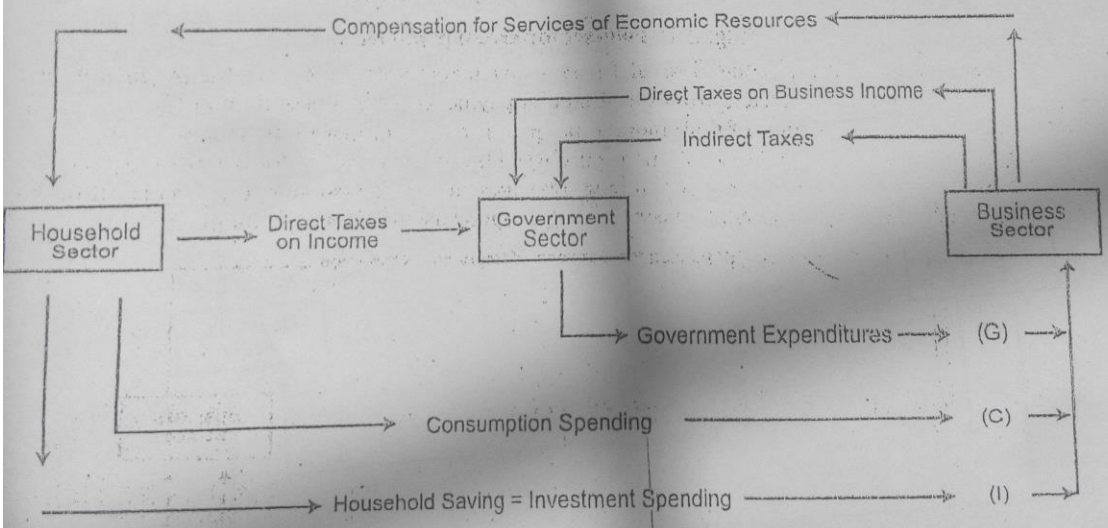


Fig: 2.3: A Three- and Four Sector Model:

(Ref: Schaum's Outlines, Macroeconomics, P. No.-)

Mac 3(87)

Macro Economics

Q: What do you mean by Circular Flow? Draw a Two-sector circular flow model.

Q: Short note on the following topics:

1. **Two-sector circular flow model**
2. **Three-sector circular flow model**
3. **Four-sector circular flow model**

Ans:

Circular Flow:

Definition: The circular flow is the continuous and simultaneous flow of final goods and services and factors of production in exchange for the payments for the goods, services, and factors. An interesting aspect of the circular flow is that it really consists of a combination of two flows moving in opposite directions. In one direction flows goods, services, and factors of production and in the other direction the payments for these commodities. To isolate these two flows, let's look at an economy with two sectors (household and business) and two types of markets (product and factor).

- The circular flow is a simple way of looking at the operation of the economy.
- The circular flow illustrates how the four major sectors in the economy—household, business, government, and foreign—are linked together through product, factor, and financial markets.

- While the circular flow represents the physical flow of commodities in one direction, more importantly it represents the circular flow of payments for the commodities in the other direction

Assumption: The basic circular flow of income model consists of some assumptions:

I. The economy consists of two sectors: households and firms.
II. Households spend all of their income (Y) on goods and services or consumption (C). There is no saving (S).
III. All output (O) produced by firms is purchased by households through their expenditure (E).
IV. There is no financial sector.
V. There is no government sector.
VI. There is no overseas sector.
VII. It is a closed economy with no exports or imports.

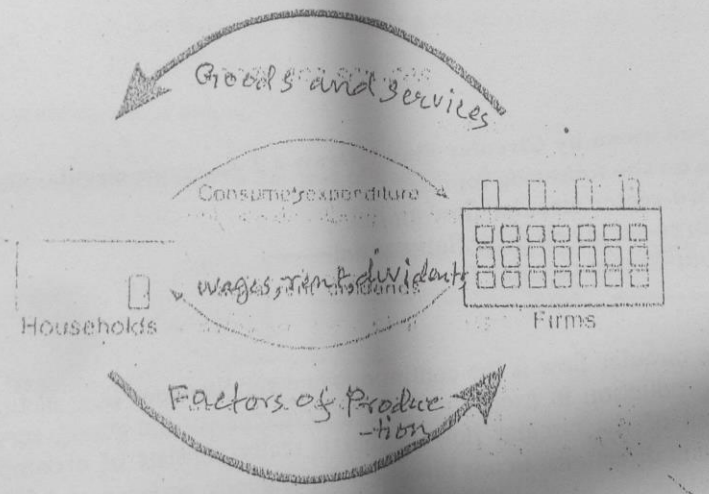


Fig: Circular-flow

In this simplified image, the relationship between the decision-makers in the circular flow model is shown. Larger arrows show primary factors, whilst the red smaller arrows show subsequent or secondary factors.

1. **A Two-sector Model:** A two-sector model consists of a business sector, which hires resources and produces goods and services, and a household sector, which supplies resource services to the business sector and purchases the goods and services produced by them. Presented as a circular flow (Fig. 2-I), the upper portion of the inner flow shows the household sector providing resource services to the business sector; the lower portion of the inner loop shows the flow of output to individuals (the household sector). The upper portion of the outer loop traces the financial payments made by the business sector to individuals for the use of