

Week 9

Introduction to Macroeconomics

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Definition

- The study of the behaviour of an economy at the aggregate level, as opposed to the level of a specific subgroups or individuals (which is called microeconomics).
- For example, a macroeconomist might consider the industrial sector, the services sector or the farm sector, but he/she will not consider specific parts of any of these sectors.
- Factors studies include inflation, unemployment, and industrial production, often with the aim of studying the effect of government policy on these factors.

Definition

- Macroeconomics is a branch of economics that deals with the performance, structure, and behaviour of a national economy as a whole.
- Macroeconomists seek to understand the determinants of aggregate trends in an economy with particular focus on national income, unemployment, inflation, investment, and international trade.
- In contrast, microeconomics is primarily focused on the determination of prices and the role of prices in allocating scarce resources.

Definition

- While macroeconomics is a broad field of study, there are two areas of research that are emblematic of the discipline: The attempt to understand the causes and consequences of short-run fluctuations in national income (the business cycle), and the attempt to understand the determinants of long-run economic growth (increases in national income).
- Macroeconomic models and their forecasts are used by both governments and large corporations to assist in the development and evaluation of economic policy and business strategy.

Circular Flow Models

- The circular flow of income, or simply the circular flow, is a simple economic model showing the relationship between money income and spending for the economy as a whole.
- The circle of money flowing through the economy is as follows: total income is spent (with the exception of "leakages" such as consumer saving), while that expenditure allows the sale of goods and services, which in turn allows the payment of income (such as wages and salaries).
- Expenditure based on borrowings and existing wealth – i.e., "injections" such as fixed investment – can add to total spending.

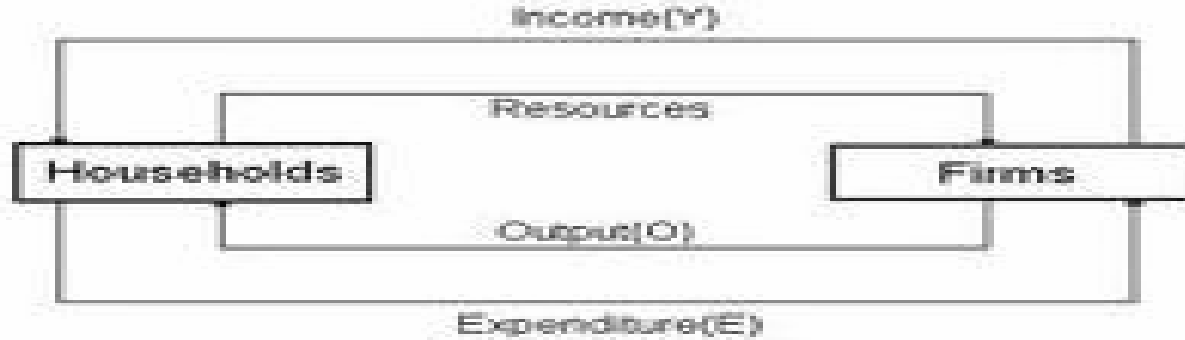


Figure 1: 2 sector circular flow model

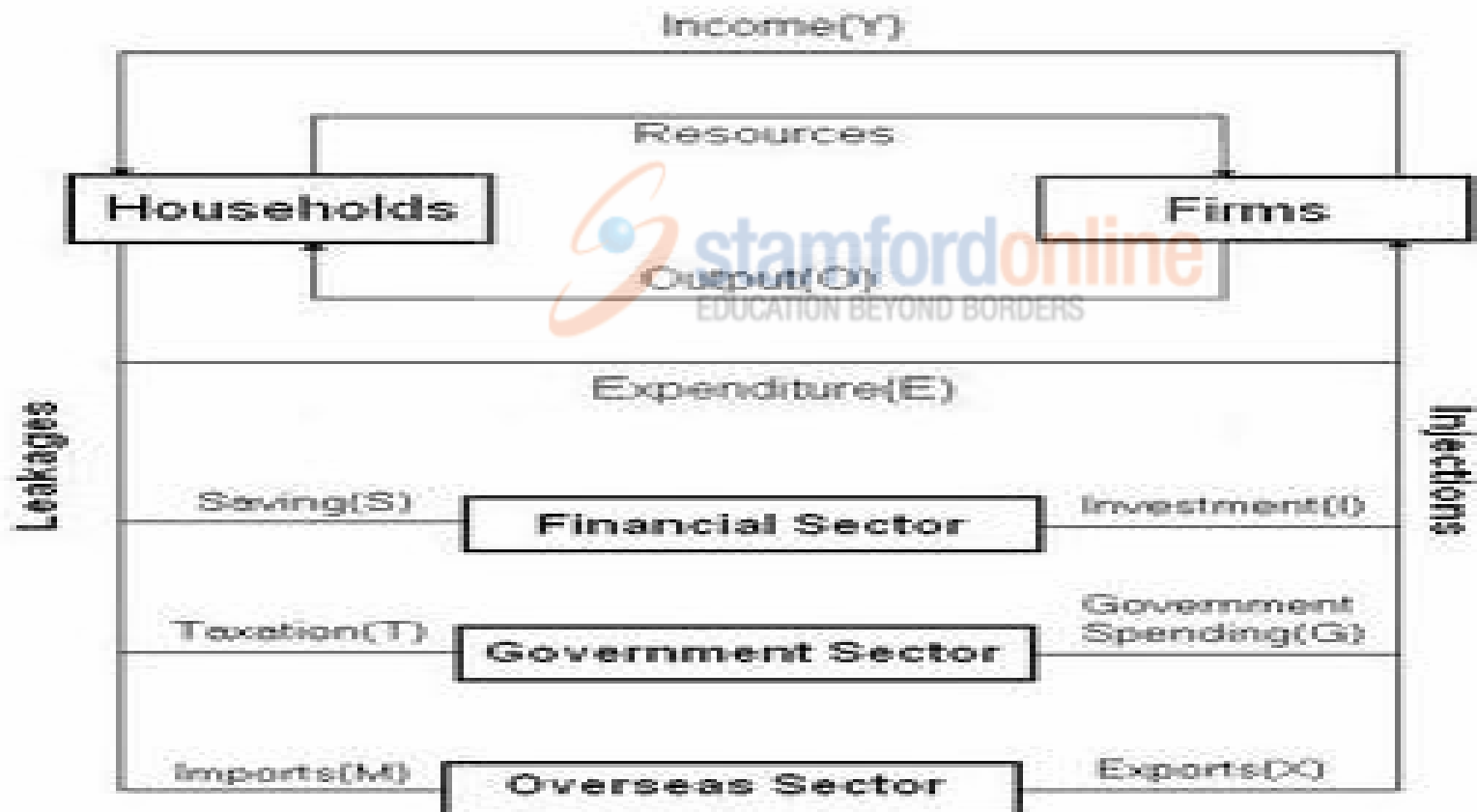


Figure 2: Five Sector Circular Flow of Income Model

Circular Flow Models

- The basic circular flow of income model consists of six assumptions:
- The economy consists of two sectors: households and firms.
- Households spend all of their income (Y) on goods and services or consumption (C). There is no saving (S).
- All output (O) produced by firms is purchased by households through their expenditure (E).
- There is no financial sector.
- There is no government sector.
- There is no overseas sector.

Two Sector Model

- In the simple **two sector circular flow of income model** the state of equilibrium is defined as a situation in which there is no tendency for the levels of income (Y), expenditure (E) and output (O) to change, that is:

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$$Y = E = O$$

- This means that the expenditure of buyers (households) becomes income for sellers (firms). The firms then spend this income on factors of production such as labour, capital and raw materials, "transferring" their income to the factor owners. The factor owners spend this income on goods which leads to a circular flow of income.

Five Sector Model

- LEAKAGES

- Saving (S), Taxes (T), Imports (M)

- INJECTION

- Investment (I), Government Spending (G), Exports (X)



Five Sector Model

- The five sector model of the circular flow of income is a more realistic representation of the economy.
- Unlike the two sector model where there are six assumptions the five sector circular flow relaxes all six assumptions.
- Since the first assumption is relaxed there are three more sectors introduced. The first is the Financial Sector that consists of banks and non-bank intermediaries who engage in the borrowing (savings from households) and lending of money.
- In terms of the circular flow of income model the leakage that financial institutions provide in the economy is the option for households to save their money.
- This is a leakage because the saved money can not be spent in the economy and thus is an idle asset that means not all output will be purchased.
- The injection that the financial sector provides into the economy is investment (I) into the business/firms sector.

Five Sector Model

- The next sector introduced into the circular flow of income is the Government Sector that consists of the economic activities of local, state and federal governments.
- The leakage that the Government sector provides is through the collection of revenue through Taxes (T) that is provided by households and firms to the government.
- For this reason they are a leakage because it is a leakage out of the current income thus reducing the expenditure on current goods and services.
- The injection provided by the government sector is Government spending (G) that provides collective services and welfare payments to the community.
- An example of a tax collected by the government as a leakage is income tax and an injection into the economy can be when the government redistributes this income in the form of welfare payments, that is a form of government spending back into the economy.

Five Sector Model

- The final sector in the circular flow of income model is the overseas sector which transforms the model from a closed economy to an open economy.
- The main leakage from this sector are imports (M), which represent spending by residents into the rest of the world.
- The main injection provided by this sector is the exports of goods and services which generate income for the exporters from overseas residents.
- An example of the use of the overseas sector is Australia exporting wool to China, China pays the exporter of the wool (the farmer) therefore more money enters the economy thus making it an injection.
- Another example is China processing the wool into items such as coats and Australia importing the product by paying the Chinese exporter; since the money paying for the coat leaves the economy it is a leakage.

Five Sector Model

- In terms of the **five sector circular flow of income model** the state of equilibrium occurs when the total leakages are equal to the total injections that occur in the economy. This can be shown as:

Savings + Taxes + Imports = Investment + Government
Spending + Exports

OR


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

- This can be further illustrated through the fictitious economy of Noka where:

$$\begin{aligned} S + T + M &= I + G + X \\ \$100 + \$150 + \$50 &= \$50 + \$100 + \$150 \\ \$300 &= \$300 \end{aligned}$$

Five Sector Model

- Therefore since the leakages are equal to the injections the economy is in a stable state of equilibrium.
- This state can be contrasted to the state of disequilibrium where unlike that of equilibrium the sum of total leakages does not equal the sum of total injections.
- By giving values to the leakages and injections the circular flow of income can be used to show the state of disequilibrium. Disequilibrium can be shown as:

$$S + T + M \neq I + G + X$$

- Therefore it can be shown as one of the below equations where:

Total leakages > Total injections

$$\$150 (S) + \$250 (T) + \$150 (M) > \$75 (I) + \$200 (G) + 150 (X)$$

Or

Total Leakages < Total injections

$$\$50 (S) + \$200 (T) + \$125 (M) < \$75 (I) + \$200 (G) + 150 (X)$$

Five Sector Model

- The effects of disequilibrium vary according to which of the above equations they belong to.
- If $S + T + M > I + G + X$ the levels of income, output, expenditure and employment will fall causing a recession or contraction in the overall economic activity. But if $S + T + M < I + G + X$ the levels of income, output, expenditure and employment will rise causing a boom or expansion in economic activity.
- To manage this problem, if disequilibrium were to occur in the five sector circular flow of income model, changes in expenditure and output will lead to equilibrium being regained. An example of this is if:
- $S + T + M > I + G + X$ the levels of income, expenditure and output will fall causing a contraction or recession in the overall economic activity.

Consumption

- In economics, consumption refers to the final use of goods and services to provide utility.
- In economics, the consumption function calculates the amount of total consumption in an economy. It is made up of autonomous consumption that is not influenced by current income and induced consumption that is influenced by the economy's income level.
- The simple consumption function is shown as the linear function:

$$C = a + bY_d$$

where C = total consumption, a = autonomous consumption, b = the marginal propensity to consume, and Y_d = disposable income (income after taxes and transfer payments).

Consumption

- Autonomous consumption represents consumption when income is zero. In estimation, this is usually assumed to be positive. The marginal propensity to consume (MPC), on the other hand, measures the rate at which consumption is changing when income is changing. In a geometric fashion, the MPC is actually the slope of the consumption function.
- The MPC is assumed to be positive. Thus, as income increases, consumption increases. However, Keynes mentioned that the increases (for income and consumption) are not equal. According to him, "as income increases, consumption increases but not by as much as the increase in income".

Saving

- In economics, personal saving has been defined as personal disposable income minus personal consumption expenditure.
- In other words, income that is not consumed by immediately buying goods and services is saved.
- Other kinds of saving can occur, as with corporate retained earnings (profits minus dividend and tax payments) and a government budget surplus.

Saving

- Saving is closely related to investment. By not using income to buy consumer goods and services, it is possible for resources to instead be invested by being used to produce fixed capital, such as factories and machinery.
- Saving can therefore be vital to increase the amount of fixed capital available, which contributes to economic growth.
- However, increased saving does not always correspond to increased investment, if savings are stashed in a mattress or otherwise not deposited into a financial intermediary like a bank there is no chance for those savings to be recycled as investment by business.

Saving

- This means that saving may increase without increasing investment, possibly causing a short-fall of demand (a pile-up of inventories, a cut-back of production, employment, and income, and thus a recession) rather than to economic growth. (This is often called the "paradox of thrift.")
- In the short term, if saving falls below investment, it can lead to a growth of aggregate demand and an economic boom. In the long term, if saving falls below investment, it eventually reduces investment and detracts from future growth. Future growth is made possible by foregoing present consumption to increase investment.

Consumption and Saving Factors

1. Disposable income
2. Expected future income
3. Wealth
4. Stage in life
5. Degree of patience
6. Interest rates



Investment

- In economics, investment is the production per unit time of goods which are not consumed but are to be used for future production.
- Examples include tangibles (such as building a railroad or factory) and intangibles (such as a year of schooling or on-the-job training).
- In measures of national income and output, gross investment I is also a component of Gross domestic product (GDP), given in the formula $GDP = C + I + G + NX$. I is divided into non-residential investment (such as factories) and residential investment (new houses). "Net" investment deducts depreciation from gross investment. It is the value of the net increase in the capital stock per year.
- Investment, as production over a period of time ("per year"), is not capital. The time dimension of investment makes it a flow. By contrast, capital is a stock, that is, an accumulation measurable at a point in time (say December 31st).

Investment

- Investment is often modelled as a function of income and interest rates, given by the relation $I = f(Y, r)$.
- An increase in income encourages higher investment, whereas a higher interest rate may discourage investment as it becomes more costly to borrow money.
- Even if a firm chooses to use its own funds in an investment, the interest rate represents an opportunity cost of investing those funds rather than loaning them out for interest.

Investment

The main influences on firms' investment decisions are:

- Real interest rates
- Profit expectations
- Existing capital