

INTRODUCTORY MACRO ECONOMICS- XII

CHAPTER .1 INTRODUCTION

EMERGENCE OF MACRO ECONOMICS

- Macroeconomics, as a separate branch of economics, emerged after the British Economist John Maynard Keynes published his celebrated book The General Theory of Employment, Interest and Money in 1936.
- Classical Thinking: The dominant thinking in economics before Keynes was that all the labourers who are ready to work will find employment and all the factories will be working at their full capacity. This school of thought is known as the classical tradition.
- The Great Depression of 1929 and the subsequent years saw the output and employment levels in the countries of Europe and North America fall by huge amounts.
- Unemployment rate may be defined as the number of people who are not working and are looking for jobs divided by the total number of people who are working or looking for jobs.
- Approach of Keynes: approach was to examine the working of the economy in its entirety and examine the interdependence of the different sectors. This is how Macro Economics was born.

CONTEXT OF THE PRESENT BOOK OF MACROECONOMICS

- Production in a Capitalist country: production activities are mainly carried out by capitalist enterprises.
- Natural resources: a part consumed in the process of production (e.g. raw materials) and a part fixed (e.g. plots of land).
- Labour: The most important factor to carry the production is human labor.
- After producing output with the help of these three factors of production, namely capital, land and labour, the Entrepreneur sells the product in the market. The money that is earned is called revenue.
- After paying rent for services, interest, and wages to labor, the remaining part of income left is known as Profit.
- Investment expenditure: When producer keep his profit in order to buy new machinery, factors of production, new factories in order to expand its productivity, this process is called as Investment Expenditure.
- In short, a capitalist economy can be defined as an economy in which most of the economic activities have the following characteristics
 - There is private ownership of means of production
 - Production takes place for selling the output in the market

- There is sale and purchase of labour services at a price which is called the wage rate (the labour which is sold and purchased against wages is referred to as wage labour).

Firms: Also known as Production Units.

- In both the developed and developing countries, apart from the private capitalist sector, there is the institution of State. The role of the state includes framing laws, enforcing them and delivering justice. We shall use the term “Government” to denote state.
- The state, in many instances, undertakes production – apart from imposing taxes and spending money on building public infrastructure, running schools, colleges, providing health services etc. These economic functions of the state have to be taken into account when we want to describe the economy of the country.
- There is another section in an economy which is called as Household sectors. By a household we mean a single individual who takes decisions relating to her own consumption, or a group of individuals for whom decisions relating to consumption are jointly determined.
- We must remember that the households consist of people. These people work in firms as workers and earn wages. They are the ones who work in the government departments and earn salaries, or they are

the owners of firms and earn profits. Indeed the market in which the firms sell their products could not have been functioning without the demand coming from the households.

- Fourth Important sector of economy: External Sector.
- Trade with external sector is of two types: Imports and Exports.
- All those goes out = Exports. And All those comes in = imports.
- So we discussed four important factors: Production in capitalist economy, About State role, about household sector & External Sector.

Chapter. 2

National Income Accounting

SOME BASIC CONCEPTS OF MACROECONOMICS

- The economic wealth, or well-being, of a country thus does not necessarily depend on the mere possession of resources; the point is how these resources are used in generating a flow of production and how, as a consequence, income and wealth are generated from that process.
- from the smallest items like pins or buttons to the largest ones like airplanes, automobiles, giant machinery or any saleable service like that of the doctor, the lawyer or the financial consultant – the goods and services produced are to be sold to the consumers.
- The consumer may, in turn, be an individual or an enterprise and the good or service purchased by that entity might be for final use or for use in further production. When it is used in further production it often loses its characteristic as that specific good and is transformed through a productive process into another good.
- An item that is meant for final use and will not pass through any more stages of production or transformations is called a final good.

- Two types in final goods: Consumption Goods and Capital Goods.

Consumption Goods:

- Goods like food and clothing, and services like recreation that are consumed when purchased by their ultimate consumers
- Are called consumer goods also.
- includes services which are consumed but for convenience we may refer to them as consumer goods.

Capital Goods:

- goods that are of durable character which are used in the production process.
- E.g. tools, implements and machines.
- they make production of other commodities feasible
- don't get transformed in the production process.
- They are also final goods yet they are not final goods to be ultimately consumed.

Consumer durables:

- some commodities like television sets, automobiles or home computers,
- they are for ultimate consumption, have one characteristic in common with capital goods – also durable
- are not extinguished by immediate or even short period consumption;
- have a relatively long life as compared to articles such as food or even clothing.
- also undergo wear and tear with gradual use and often need repairs and replacements of parts, i.e., like machines they also need to be preserved, maintained and renewed.

Intermediate goods:

- Of the total production taking place in the economy a large number of products don't end up in final consumption and are not capital goods either. Such goods may be used by other producers as material inputs. Examples are steel sheets used for making automobiles and copper used for making utensils.
- Intermediate Goods are not Final Goods.
- The sum total of the monetary value of these diverse commodities gives us a measure of final output.
- Question: Why we measure only final goods not intermediate goods?

Answer: since we are dealing with value of output, we should realize that the value of the final goods already includes the value of the intermediate goods that have entered into their production as inputs. Counting them separately will lead to the error of double counting. Whereas considering intermediate goods may give a fuller description of total economic activity, counting them will highly exaggerate the final value of our economic activity.

- Flows are defined over a period of time. Income, or output, or profits are concepts that make sense only when a time period is specified. These are called flows because they occur in a period of time. Therefore we need to delineate a time period to get a quantitative measure of these.
- Stocks are defined at a particular point of time. The buildings or machines in a factory are there irrespective of the specific time period. There can be addition to, or deduction from, these if a new machine is added or a machine falls in disuse and is not replaced. These are called stocks.
- **Wear and tear of capital is called depreciation.**
- New addition to capital stock in an economy is measured by net investment or new capital formation, which is expressed as

$$\text{Net Investment} = \text{Gross investment} - \text{Depreciation.}$$

- Depreciation is it is the cost of the good divided by number of years of its useful life.

Founding father of modern economics: Adam Smith

CIRCULAR FLOW OF INCOME AND METHODS OF CALCULATING NATIONAL INCOME

- Four kinds of contributions that can be during the production of goods and services (a) contribution made by human labour, remuneration for which is called wage (b) contribution made by capital, remuneration for which is called interest (c) contribution made by entrepreneurship, remuneration of which is profit (d) contribution made by fixed natural resources (called „land“), remuneration for which is called rent.

Simplified economy,

- there is only one way in which the households may dispose of their earnings – by spending their entire income on the goods and services produced by the domestic firms.
- other channels of disposing their income are closed: we have assumed that the households do not save, they do not pay taxes to the government – since there is no government, and neither do they buy imported goods since there is no external trade in this simple economy.
- 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, therefore, comes back to the producers in the form of sales revenue.
- When the income is being spent on the goods and services produced by the firms, it takes the form of aggregate expenditure received by the firms.
- Since the value of expenditure must be equal to the value of goods and services, we can equivalently measure the aggregate income by “calculating the aggregate value of goods and services produced by the firms”.
- When the aggregate revenue received by the firms is paid out to the factors of production it takes the form of aggregate income.

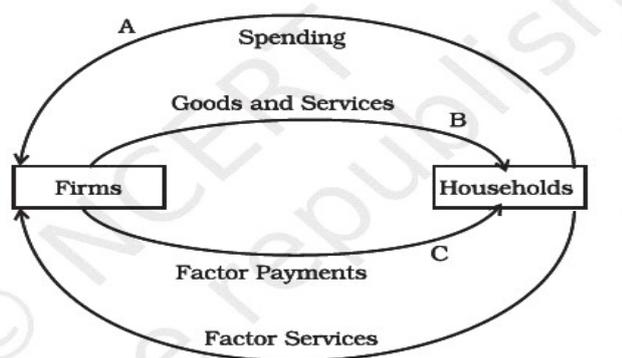


Fig. 2.1: Circular Flow of Income in a Simple Economy

- The uppermost arrow, going from the households to the firms, represents the spending the households undertake to buy goods and services produced by the firms.
- The second arrow going from the firms to the households is the counterpart of the arrow above. It stands for the goods and services which are flowing from the firms to the households. In other words, this flow is what the households are getting from the Fig. 2.1:

- Circular Flow of Income in a Simple Economy firms, for which they are making the expenditures.
- In short, the two arrows on the top represent the goods and services market – the arrow above represents the flow of payments for the goods and services, the arrow below represents the flow of goods and services.
- The two arrows at the bottom of the diagram similarly represent the factors of production market.
- The lower most arrow going from the households to the firms symbolises the services that the households are rendering to the firms.
- Using these services the firms are manufacturing the output.
- The arrow above this, going from the firms to the households, represents the payments made by the firms to the households for the services provided by the latter.
- Since the same amount of money, representing the aggregate value of goods and services, is moving in a circular way, if we want to estimate the aggregate value of goods and services produced during a year we can measure the annual value of the flows at any of the dotted lines indicated in the diagram. We can measure the uppermost flow (at point A) by measuring the aggregate value of spending that the firms receive for the final goods and services which they produce. This method will be called the expenditure method. If we measure the flow at B by measuring the aggregate value of final goods and services produced by all the firms, it will be called product method. At C, measuring the sum total of all factor payments will be called income method.

The Product or Value Added Method

- In Product or Value Added Method we calculate the aggregate annual value of goods and services produced (if a year is the unit of time).
- The term that is used to denote the net contribution made by a firm is called its value added.
- We have seen that the raw materials that a firm buys from another firm which are completely used up in the process of production are called „intermediate goods“.
- Therefore the value added of a firm is, value of production of the firm – value of intermediate goods used by the firm.
- The value added of a firm is distributed among its four factors of production, namely, labour, capital, entrepreneurship and land.
- Therefore wages, interest, profits and rents paid out by the firm must add up to the value added of the firm.
- Value added is a flow variable.
- depreciation, is also known as consumption of fixed capital.
- Since the capital which is used to carry out production undergoes wear and tear, the producer has to undertake replacement investments to keep the value of capital constant.
- The replacement investment is same as depreciation of capital.
- If we include depreciation in value added then the measure of value added that we obtain is called **Gross Value Added**.
- If we deduct the value of depreciation from gross value added we obtain **Net Value Added**.
- In economics, the stock of unsold finished goods, or semi-finished goods, or raw materials which a firm carries from one year to the next is called inventory.

- Inventory is a stock variable. It may have a value at the beginning of the year; it may have a higher value at the end of the year.
- In such a case inventories have increased (or accumulated). If the value of inventories is less at the end of the year compared to the beginning of the year, inventories have decreased (decumulated).
- the change of inventories of a firm during a year \equiv production of the firm during the year – sale of the firm during the year.
- Inventories are treated as capital.
- Addition to the stock of capital of a firm is known as investment.
- change in the inventory of a firm is treated as investment.
- three major categories of investment.
- First is the rise in the value of inventories of a firm over a year which is treated as investment expenditure undertaken by the firm.
- Second category of investment is the fixed business investment, which is defined as the addition to the machinery, factory buildings, and equipments employed by the firms.
- last category of investment is the residential investment, which refers to the addition of housing facilities.
- Change in inventories may be planned or unplanned.
- In case of an unexpected fall in sales, the firm will have unsold stock of goods which it had not anticipated. Hence there will be unplanned accumulation of inventories. In the opposite case where there is unexpected rise in the sales there will be unplanned decumulation of inventories.
- If we sum the gross value added of all the firms of the economy in a year, we get a measure of the value of aggregate amount of goods and services produced by the economy in a year (just as we had done in the wheat-bread example). Such an estimate is called **Gross Domestic Product (GDP)**. Thus $GDP \equiv$ Sum total of gross value added of all the firms in the economy.

Expenditure Method

- An alternative way to calculate the GDP is by looking at the demand side of the products known as Expenditure Method.
- (a) the final consumption expenditure on the goods and services produced by the firm.
- (b) the final investment expenditure, incurred by other firms on the capital goods produced by firm
- (c) the expenditure that the government makes on the final goods and services produced by firm.
- (d) the export revenues that firm i earns by selling its goods and services abroad.

Income Method

- the sum of final expenditures in the economy must be equal to the incomes received by all the factors of production taken together (final expenditure is the spending on final goods, it does not include spending on intermediate goods).
- follows from the simple idea that the revenues earned by all the firms put together must be distributed among the factors of production as salaries, wages, profits, interest earnings and rents.

$GNP \equiv GDP +$ Factor income earned by the domestic factors of production employed in the rest of the world – Factor income earned by the factors of production of the rest of the world employed in

the domestic economy Hence, $GNP \equiv GDP + \text{Net factor income from abroad}$
 (Net factor income from abroad = Factor income earned by the domestic factors of production employed in the rest of the world – Factor income earned by the factors of production of the rest of the world employed in the domestic economy).

- depreciation does not become part of anybody's income.
- If we deduct depreciation from GNP the measure of aggregate income that we obtain is called Net National Product (NNP). Thus $NNP \equiv GNP - \text{Depreciation}$.
- Net National Product at factor cost or National Income. Thus, $NNP \text{ at factor cost} \equiv \text{National Income (NI)} \equiv NNP \text{ at market prices} - (\text{Indirect taxes} - \text{Subsidies}) \equiv NNP \text{ at market prices} - \text{Net indirect taxes}$ (Net indirect taxes \equiv Indirect taxes – Subsidies)
- Thus, Personal Income (PI) $\equiv NI - \text{Undistributed profits} - \text{Net interest payments made by households}$
– Corporate tax + Transfer payments to the households from the government and firms
- However, even PI is not the income over which the households have complete say. They have to pay taxes from PI. If we deduct the Personal Tax Payments (income tax, for example) and Non-tax Payments (such as fines) from PI, we obtain what is known as the Personal Disposable Income.

Thus

Personal Disposable Income (PDI) \equiv PI – Personal tax payments – Non-tax payments.
National Disposable Income and Private Income

- Apart from these categories of aggregate macroeconomic variables, in India, a few other aggregate income categories are also used in National Income accounting.
- **National Disposable Income** = Net National Product at market prices + Other current transfers from the rest of the world.
- National Disposable Income is that it gives an idea of what is the maximum amount of goods and services the domestic economy has at its disposal.
- Current transfers from the rest of the world include items such as gifts, aids, etc.
- **Private Income** = Factor income from net domestic product accruing to the private sector + National debt interest + Net factor income from abroad + Current transfers from government + Other net transfers from the rest of the world.
- Many commodities have two sets of prices.
- One is the retail price which the consumer actually pays.
- other is the wholesale price, the price at which goods are traded in bulk.
- These two may differ in value because of the margin kept by traders.
- Goods which are traded in bulk (such as raw materials or semi-finished goods) are not purchased by ordinary consumers. Like CPI, the index for wholesale prices is called **Wholesale Price Index (WPI)**.
- In countries like USA it is referred to as Producer Price Index (PPI).
- Notice CPI (and analogously WPI) may differ from GDP deflator because
- The goods purchased by consumers do not represent all the goods which are produced in a country. GDP deflator takes into account all such goods and services.
- CPI includes prices of goods consumed by the representative consumer, hence it includes prices of imported goods. GDP deflator does not include prices of imported goods.

- The weights are constant in CPI – but they differ according to production level of each good in GDP deflator.

GDP AND WELFARE

- GDP is the sum total of value of goods and services created within the geographical boundary of a country in a particular year.
- It gets distributed among the people as incomes (except for retained earnings).
- So we may be tempted to treat higher level of GDP of a country as an index of greater well-being of the people of that country (to account for price changes, we may take the value of real GDP instead of nominal GDP). But there are at least three reasons why this may not be correct
- **Distribution of GDP – how uniform is it**
- **Non-monetary exchanges**
- **Externalities:** Externalities refer to the benefits (or harms) a firm or an individual causes to another for which they are not paid (or penalised).

Chapter 3

Money and Banking

Introduction:

- commonly accepted medium of exchange.
- Economic exchanges without the mediation of money are referred to as barter exchanges. However, they presume the rather improbable double coincidence of wants.
- To smoothen the transaction, an intermediate good is necessary which is acceptable to both parties. Such a good is called money.

FUNCTIONS OF MONEY

- acts as a *medium of exchange*.
- acts as a convenient *unit of account*.
- A barter system has other deficiencies. It is difficult to carry forward one's wealth under the barter system.
- act as a *store of value* for individuals. Wealth can be stored in the form of money for future use.

DEMAND FOR MONEY

- Money is the most liquid of all assets in the sense that it is universally acceptable and hence can be exchanged for other commodities very easily.
- On the other hand, it has an opportunity cost. If, instead of holding on to a certain cash balance, you put the money in a fixed deposits in some bank you can earn interest on that money.

The Transaction Motive

- The principal motive for holding money is to carry out transactions.

- The number of times a unit of money changes hands during the unit period is called the **velocity of**

circulation of money.

- We are ultimately interested in learning the relationship between the aggregate transaction demand for money of an economy and the (nominal) GDP in a given year.
- The total value of annual transactions in an economy includes transactions in all intermediate goods and services and is clearly much greater than the nominal GDP.
- However, normally, there exists a stable, positive relationship between value of transactions and the nominal GDP.
- An increase in nominal GDP implies an increase in the total value of transactions and hence a greater transaction demand for money from equation.
- that transaction demand for money is positively related to the real income of an economy and also to its average price level.

The Speculative Motive

- An individual may hold her wealth in the form of landed property, bullion, bonds, money etc.
- For simplicity, let us club all forms of assets other than money together into a single category called „bonds“. Typically, bonds are papers bearing the promise of a future stream of monetary returns over a certain period of time. These papers are issued by governments or firms for borrowing money from the public and they are tradable in the market.
- Different people have different expectations regarding the future movements in the market rate of interest based on their private information regarding the economy. If you think that the market rate of interest should eventually settle down to 8 per cent per annum, then you may consider the current rate of 5 per cent too low to be sustainable over time. You expect interest rate to rise and consequently bond prices to fall. If you are a bond holder a decrease in bond price means a loss to you – similar to a loss you would suffer if the value of a property held by you suddenly depreciates in the market. Such a loss occurring from a falling bond price is called a capital loss to the bond holder. Under such circumstances, you will try to sell your bond and hold money instead. Thus speculations regarding future movements in interest rate and bond prices give rise to the speculative demand for money.
- When the interest rate is very high everyone expects it to fall in future and hence anticipates capital gains from bond-holding. Hence people convert their money into bonds. Thus, speculative demand for money is low. When interest rate comes down, more and more people expect it to rise in the future and anticipate capital loss. Thus they convert their bonds into money giving rise to a high speculative demand for money.
- Speculative demand for money is inversely related to the rate of interest.

THE SUPPLY OF MONEY

- In a modern economy money consists mainly of currency notes and coins issued by the monetary authority of the country. In India currency notes are issued by the Reserve Bank of India (RBI), which is the monetary authority in India.
- However, coins are issued by the Government of India.
- Apart from currency notes and coins, the balance in savings, or current account deposits, held by the public in commercial banks is also considered money since cheques drawn on

these accounts are used to settle transactions.

- Such deposits are called demand deposits as they are payable by the bank on demand from the account- holder. Other deposits, e.g. fixed deposits, have a fixed period to maturity and are referred to as time deposits.

Legal Definitions: Narrow and Broad Money

- Money supply, like money demand, is a stock variable.
- The total stock of money in circulation among the public at a particular point of time is called money supply.
- RBI publishes figures for four alternative measures of money supply, viz. M1, M2, M3 and M4. They are defined as follows;
M1 = CU + DD
M2 = M1 + Savings deposits with Post Office savings banks
M3 = M1 + Net time deposits of commercial banks
M4 = M3 + Total deposits with Post Office savings organisations (excluding National Savings Certificates)
- CU is currency (notes plus coins) held by the public and DD is net demand deposits held by commercial banks.
- The word „net“ implies that only deposits of the public held by the banks are to be included in money supply.
- The interbank deposits, which a commercial bank holds in other commercial banks, are not to be regarded as part of money supply.
- M1 and M2 are known as **narrow money**.
- M3 and M4 are known as **broad money**.
- M1 is most liquid and easiest for transactions whereas M4 is least liquid of all. M3 is the most commonly used measure of money supply.
- It is also known as **aggregate monetary resources**.

Money Creation by the Banking System

- Money supply will change if the value of any of its components such as CU, DD or Time Deposits changes.
- The most liquid definition of money, viz. M1 = CU + DD, as the measure of money supply in the economy.
These influences on money supply can be summarised by the following key ratios

The Currency Deposit Ratio :

- is the ratio of money held by the public in currency to that they hold in bank deposits. $cdr = CU/DD$.
- If a person gets Re 1 she will put Rs $1/(1 + cdr)$ in her bank account and keep Rs $cdr/(1 + cdr)$ in cash.

The Reserve Deposit Ratio:

- Banks hold a part of the money people keep in their bank deposits as reserve money and loan out the rest to various investment projects.
- Reserve money consists of two things – vault cash in banks and deposits of commercial banks with RBI.

- Banks use this reserve to meet the demand for cash by account holders.
- Reserve deposit ratio (**rdr**) is the proportion of the total deposits commercial banks keep as reserves.
- Keeping reserves is costly for banks, as, otherwise, they could lend this balance to interest earning investment projects.
- However, RBI requires commercial banks to keep reserves in order to ensure that banks have a safe cushion of assets to draw on when account holders want to be paid.
- RBI uses various policy instruments to bring forth a healthy rdr in commercial banks.
- The first instrument is the **Cash Reserve Ratio** which specifies the fraction of their deposits that banks

must keep with RBI.

- There is another tool called **Statutory Liquidity Ratio** which requires the banks to maintain

High Powered Money:

- The total liability of the monetary authority of the country, RBI, is called the monetary base or high powered money.
- It consists of currency (notes and coins in circulation with the public and vault cash of commercial banks) and deposits held by the Government of India and commercial banks with RBI.

By definition, money supply is equal to currency plus deposits

$$M = CU + DD = (1 + cdr)DD$$

where, $cdr = CU/DD$.

- The Reserve Bank of India plays a crucial role here.
- In case of a crisis like the above it stands by the commercial banks as a guarantor and extends loans to ensure the solvency of the latter.
- This system of guarantee assures individual account-holders that their banks will be able to pay their money back in case of a crisis and there is no need to panic thus avoiding bank runs. This role of the monetary authority is known as the lender of last resort.
- Apart from acting as a banker to the commercial banks, RBI also acts as a banker to the Government of India, and also, to the state governments.
- It is commonly held that the government, sometimes, „prints money“ in case of a budget deficit, i.e., when it cannot meet its expenses (e.g. salaries to the government employees, purchase of defense equipment from a manufacturer of such goods etc.) from the tax revenue it has earned.
- The government, however, has no legal authority to issue currency in this fashion.
- So it borrows money by selling treasury bills or government securities to RBI, which issues currency to the government in return.
- Financing of budget deficits by the governments in this fashion is called **Deficit Financing through Central Bank Borrowing**.
- However, the most important role of RBI is as the controller of money supply and credit creation in the economy.
- RBI is the independent authority for conducting monetary policy in the best interests of the economy.

Open Market Operations:

- RBI purchases (or sells) government securities to the general public in a bid to increase (or decrease) the stock of high powered money in the economy.

Bank Rate Policy:

- RBI can affect the reserve deposit ratio of commercial banks by adjusting the value of the bank rate – which is the rate of interest commercial banks have to pay RBI – if they borrow money from it in case of shortage of reserves.
- A low (or high) bank rate encourages banks to keep smaller (or greater) proportion of their deposits as reserves, since borrowing from RBI is now less (or more) costly than before.
- As a result banks use a greater (or smaller) proportion of their resources for giving out loans to borrowers or investors, thereby enhancing (or depressing) the multiplier process via assisting (or resisting) secondary money creation.
- In short, a low (or high) bank rate reduces (or increases) rdr and hence increases (or decreases) the value

of the money multiplier, which is $(1 + cdr)/(cdr + rdr)$.

- Thus, for any given amount of high powered money, H , total money supply goes up.

Varying Reserve Requirements:

- Cash Reserve Ratio (CRR) and Statutory Liquidity Ratio (SLR) also work through the rdr -route.
- A high (or low) value of CRR or SLR helps increase (or decrease) the value of reserve deposit ratio, thus diminishing (or increasing) the value of the money multiplier and money supply in the economy in a similar fashion.

Sterilization by RBI :

- RBI often uses its instruments of money creation for stabilising the stock of money in the economy from external shocks.

Chapter. 4

Income Determination

- The basic objective of macroeconomics is to develop theoretical tools, called models, capable of describing the processes which determine the values of these variables.
- Specifically, the models attempt to provide theoretical explanation to questions such as what causes periods of slow growth or recessions in the economy, or increment in the price level, or a rise in unemployment.
- difficult to account for all the variables at the same time.
- on the determination of a particular variable, we must hold the values of all other variables constant.
- This is a stylisation typical of almost any theoretical exercise and is called the assumption of *ceteris paribus*, which literally means „other things remaining equal“.

EX ANTE AND X POST

- In a theoretical model of the economy the ex-ante values of these variables should be our primary concern. „If anybody wants to predict what the equilibrium value of the final goods output or GDP will be, it is important for her to know what quantities of the final goods people plan to demand or supply“.

Ex-Ante Consumption:

- Different people plan to save different fractions of their additional incomes (with the rich typically saving a greater proportion of their income than the poor), and if we average these we may arrive at a fraction which will give us an idea of what proportion of the total additional income of the economy people wish to save as a whole.
- We call this fraction the marginal propensity to save (mps).
- It gives us the ratio of total additional planned savings in an economy to the total additional income of the economy.
- Since consumption is the complement of savings (additional income of the economy is either put into additional savings or used for extra consumption by the people), if we subtract the mps from 1, we get the marginal propensity to consume (mpc), which, in a similar way, is the fraction of total additional income that people use for consumption. Suppose, mpc of an economy is c , where $0 < c < 1$. If the total income of the economy increases from 0 to Y , then total consumption of the economy should be $C = c(Y - 0) = c.Y$.
- If the income of the economy in a certain year is zero, the above equation tells us that the economy has to starve for an entire year, which is, obviously, an outrageous idea.
- If your income is zero in a certain period you use your past savings to buy certain minimum consumption items in order to survive.
- Hence we must add the minimum or subsistence level of consumption of the economy in the above equation, which, therefore, becomes $C = C + c.Y$
- Where $C > 0$ is the minimum consumption level and is a given or exogenous item to our model, which, therefore, is treated as a constant. The equation tells us that as the income of the economy increases above zero, the economy uses c proportion of this extra income to increase its consumption above the minimum level.

Ex Ante Investment:

- Investment is defined as addition to the stock of physical capital (such as machines, buildings, roads etc., i.e. anything that adds to the future productive capacity of the economy) and changes in the inventory (or the stock of finished goods) of a producer.
- Note that „investment goods“ (such as machines) are also part of the final goods – they are not intermediate goods like raw materials.
- Investment decisions by producers, such as whether to buy a new machine, depend, to a large extent, on the market rate of interest. However, for simplicity, we assume here that firms plan to invest the same amount every year.
- Where I is a positive constant which represents the autonomous (given or exogenous) investment in the economy in a given year.

Ex Ante Aggregate Demand for Final Goods:

- In an economy without a government, the ex ante aggregate demand for final goods is the sum total of the ex ante consumption expenditure and ex ante investment expenditure on such goods

- Ex ante supply is equal to ex ante demand only when the final goods market, and hence the economy, is in equilibrium.

The Multiplier Mechanism:

- In the absence of a government imposing indirect taxes or disbursing subsidies, the value of the total output of final goods or GDP is equal to National Income.
- The production of final goods employs factors such as labour, capital, land and entrepreneurship.
- In the absence of indirect taxes or subsidies, the total value of the final goods output is disbursed among different factors of production – wages to labour, interest to capital, rent to land etc.
- Whatever is left over is appropriated by the entrepreneur and is called profit.
- Thus the sum total of aggregate factor payments in the economy, National Income, is equal to the aggregate value of the output of final goods, GDP.
- When process goes on, round after round, with producers increasing their output to clear the excess demand in each round and consumers spending a part of their additional income from this extra production on consumption items – thereby creating further excess demand in the next round.

Chapter. 5

Government Budget and the Economy

COMPONENTS OF THE GOVERNMENT BUDGET

- There is a constitutional requirement in India (Article 112) to present before the Parliament a statement of estimated receipts and expenditures of the government in respect of every financial year which runs from 1 April to 31 March.
- This „Annual Financial Statement“ constitutes the main budget document.
- Further, the budget must distinguish expenditure on the revenue account from other expenditures. Therefore, the budget comprises of the (a) Revenue Budget and the (b) Capital Budget (Refer Chart 1).

The Revenue Account

- The Revenue Budget shows the current receipts of the government and the expenditure that can be met from these receipts.
- Revenue Receipts: Revenue receipts are receipts of the government which are non-redeemable, that is, they cannot be reclaimed from the government. They are divided into tax and non-tax revenues.
- Tax revenues consist of the proceeds of taxes and other duties levied by the central government.
- Tax revenues, an important component of revenue receipts, comprise of direct taxes – which fall directly on individuals (personal income tax) and firms (corporation tax), and indirect taxes like excise taxes (duties levied on goods produced within the country), customs duties (taxes imposed on goods imported into and exported out of India) and service tax.
- Other direct taxes like wealth tax, gift tax and estate duty (now abolished) have never been of much significance in terms of revenue yield and have thus been referred to as „paper taxes“.

- Non-tax revenue of the central government mainly consists of interest receipts on account of loans by the central government, dividends and profits on investments made by the government, fees and other receipts for services rendered by the government.
- Cash grants-in-aid from foreign countries and international organizations are also included.
- The estimates of revenue receipts take into account the effects of tax proposals made in the Finance Bill.

Revenue		Capital		
Budget		Budget		
Revenue	Revenue		Capital	Capital
Receipts	Expenditure		Receipts	Expenditure

Revenue Expenditure:

- expenditure incurred for purposes other than the creation of physical or financial assets of the central government.
- relates to those expenses incurred for the normal functioning of the government departments and various services, interest payments on debt incurred by the government, and grants given to state governments and other parties (even though some of the grants may be meant for creation of assets).
- Budget documents classify total expenditure into plan and non-plan expenditure.
- Plan revenue expenditure relates to central Plans (the Five-Year Plans) and central assistance for State and Union Territory plans.
- Non-plan expenditure, the more important component of revenue expenditure, covers a vast range of general, economic and social services of the government.
- The main items of non-plan expenditure are interest payments, defence services, subsidies, salaries and pensions.
- Interest payments on market loans, external loans and from various reserve funds constitute the single largest component of non-plan revenue expenditure.
- Defence expenditure, is committed expenditure in the sense that given the national security concerns, there exists little scope for drastic reduction.
- Subsidies are an important policy instrument which aim at increasing welfare

The Capital Account

- The Capital Budget is an account of the assets as well as liabilities of the central government, which takes into consideration changes in capital.
- It consists of capital receipts and capital expenditure of the government.

Capital Receipts:

- All those receipts of the government which create liability or reduce financial assets are termed as capital receipts.
- The main items of capital receipts are loans raised by the government from the public which are called market borrowings, borrowing by the government from the Reserve Bank and commercial banks and other financial institutions through the sale of treasury bills,

loans received from foreign governments and international organisations, and recoveries of loans granted by the central government.

Capital Expenditure:

- There are expenditures of the government which result in creation of physical or financial assets or reduction in financial liabilities.
- This includes expenditure on the acquisition of land, building, machinery, equipment, investment in shares, and loans and advances by the central government to state and union territory governments, PSUs and other parties.
- Capital expenditure is also categorised as plan and non-plan in the budget documents.
- Plan capital expenditure, like its revenue counterpart, relates to central plan and central assistance for state and union territory plans.
- Non-plan capital expenditure covers various general, social and economic services provided by the government.

Measures of Government Deficit

- When a government spends more than it collects by way of revenue, it incurs a budget deficit.
- There are various measures that capture government deficit and they have their own implications for the economy.

Revenue Deficit:

- The revenue deficit refers to the excess of government's revenue expenditure over revenue receipts
- Revenue deficit = Revenue expenditure – Revenue receipts

Fiscal Deficit:

- Fiscal deficit is the difference between the government's total expenditure and its total receipts excluding borrowing.
 - Gross fiscal deficit = Total expenditure – (Revenue receipts + Non-debt creating capital receipts)
 - Gross fiscal deficit = Net borrowing at home + Borrowing from RBI + Borrowing from abroad
- Revenue deficit is a part of fiscal deficit (Fiscal Deficit = Revenue Deficit + Capital Expenditure - non- debt creating capital receipts).
- A large share of revenue deficit in fiscal deficit indicated that a large part of borrowing is being used to meet its consumption expenditure needs rather than investment.

Primary Deficit:

- borrowing requirement of the government includes interest obligations on accumulated debt.
- The goal of measuring primary deficit is to focus on present fiscal imbalances.
- To obtain an estimate of borrowing on account of current expenditures exceeding revenues, we need to calculate what has been called the primary deficit.
- It is simply the fiscal deficit minus the interest payments
- Gross primary deficit = Gross fiscal deficit – Net interest liabilities
- Net interest liabilities consist of interest payments minus interest receipts by the government on net domestic lending.

FISCAL POLICY:

- One of Keynes's main ideas in *The General Theory of Employment, Interest and Money* was that government fiscal policy should be used to stabilise the level of output and employment.
- Through changes in its expenditure and taxes, the government attempts to increase output and income and seeks to stabilise the ups and downs in the economy.
- In the process, fiscal policy creates a *surplus* (when total receipts exceed expenditure) or a *deficit budget* (when total expenditure exceed receipts) rather than a *balanced budget* (when expenditure equals receipts).
- In what follows, we study the effects of introducing the government sector in our earlier analysis of the determination of income.
- The government directly affects the level of equilibrium income in two specific ways – government purchases of goods and services (G) increase aggregate demand and taxes, and transfers affect the relation between income (Y) and disposable income (YD) – the income available for consumption and saving with the households.
- We take taxes first.
- We assume that the government imposes taxes that do not depend on income, called **lump-sum taxes** equal to T . We assume throughout the analysis that government makes a constant amount of transfers,

Debt:

- Budgetary deficits must be financed by either taxation, borrowing or printing money.
- Governments have mostly relied on borrowing, giving rise to what is called government debt.
- The concepts of deficits and debt are closely related.
- Deficits can be thought of as a *flow* which add to the *stock* of debt.
- If the government continues to borrow year after year, it leads to the accumulation of debt and the government has to pay more and more by way of interest.
- These interest payments themselves contribute to the debt.

Deficits of debt:

- Whether government debt is a burden and two, the issue of financing the debt.
- The burden of debt must be discussed keeping in mind that what is true of one small trader's debt may not be true for the government's debt, and one must deal with the „whole“ differently from the „part“. Unlike any one trader, the government can raise resources through taxation and printing money.
- By borrowing, the government transfers the burden of reduced consumption on future generations.
- This is because it borrows by issuing bonds to the people living at present but may decide to pay off the bonds some twenty years later by raising taxes.
- These may be levied on the young population that have just entered the work force, whose disposable income will go down and hence consumption. Thus, national savings, it was argued, would fall
- Traditionally, it has been argued that when a government cuts taxes and runs a budget deficit, consumers respond to their after -tax income by spending more.
- It is possible that these people are short-sighted and do not understand the implications of budget deficits.

- They may not realise that at some point in the future, the government will have to raise taxes to pay off the debt and accumulated interest. Even if they comprehend this, they may expect the future taxes to fall not on them but on future generations.
- One of the main criticisms of deficits is that they are inflationary.
- This is because when government increases spending or cuts taxes, aggregate demand increases. Firms may not be able to produce higher quantities that are being demanded at the ongoing prices. Prices will, therefore, have to rise.
- However, if there are unutilised resources, output is held back by lack of demand.
- A high fiscal deficit is accompanied by higher demand and greater output and, therefore, need not be inflationary.
- there is a decrease in investment due to a reduction in the amount of savings available to the private sector.
- This is because if the government decides to borrow from private citizens by issuing bonds to finance its deficits, these bonds will compete with corporate bonds and other financial instruments for the available supply of funds.
- If some private savers decide to buy bonds, the funds remaining to be invested in private hands will be smaller.
- Thus, some private borrowers will get „crowded out“ of the financial markets as the government claims an increasing share of the economy“s total savings.
- Also, if the government invests in infrastructure, future generations may be better off, provided the return on such investments is greater than the rate of interest. The actual debt could be paid off by the growth in output. The debt should not then be considered burdensome. The growth in debt will have to be judged by the growth of the economy as a whole.

Deficit Reduction:

- Government deficit can be reduced by an increase in taxes or reduction in expenditure.
- In India, the government has been trying to increase tax revenue with greater reliance on direct taxes (indirect taxes are regressive in nature – they impact all income groups equally).
- There has also been an attempt to raise receipts through the sale of shares in PSUs.
- However, the major thrust has been towards reduction in government expenditure.
- This could be achieved through making government activities more efficient through better planning of programmes and better administration

Chapter. 6

OPEN ECONOMY MACROECONOMICS

- An **open economy** is one that trades with other nations in goods and services and, most often, also in financial assets.
- Indians, for instance, enjoy using products produced around the world and some of our production is exported to foreign countries. Foreign trade, therefore, influences Indian aggregate demand in two ways;
- First, when Indians buy foreign goods, this spending escapes as a **leakage** from the circular flow of income decreasing aggregate demand.

- Second, our exports to foreigners enter as an **injection** into the circular flow, increasing aggregate demand for domestically produced goods. Total foreign trade (exports + imports) as a proportion of GDP is a common measure of the **degree of openness** of an economy. There are several countries whose foreign trade proportions are above 50 per cent of GDP.
- When goods move across national borders, money must move in the opposite direction. At the

international level, there is no single currency that is issued by a central authority. Foreign economic agents will accept a national currency only if they are convinced that the currency will maintain a stable purchasing power.

- The **international monetary system** has been set up to handle these issues and ensure stability in international transactions

THE BALANCE OF PAYMENTS

- The balance of payments (BoP) record the transactions in goods, services and assets between residents of a country with the rest of the world for a specified time period typically a year.

There are two main accounts in the BoP – the current account and the capital account.

- The **current account** records exports and imports in goods and services and transfer payments.
- When exports exceed imports, there is a **trade surplus** and when imports exceed exports there is a **trade deficit**.
- Trade in services denoted as invisible trade (because they are not seen to cross national borders) includes both factor income (net income from compensation of employees and net investment income, the latter equals, the interest, profits and dividends on our assets abroad minus the income foreigners earn on assets they own in India) and net non-factor income (shipping, banking, insurance, tourism, software services, etc.).
- Transfer payments are receipts which the residents of a country receive „for free“, without having to make any present or future payments in return.
- They consist of remittances, gifts and grants. They could be official or private. The balance of exports and imports of goods is referred to as the **trade balance**.
- Adding trade in services and net transfers to the trade balance, we get the **current account balance**
- The **capital account** records all international purchases and sales of assets such as money, stocks, bonds, etc. We note that any transaction resulting in a payment to foreigners is entered as a **debit** and is given a negative sign. Any transaction resulting in a receipt from foreigners is entered as a **credit** and is given a positive sign.

BoP Surplus and Deficit

- Any current account deficit is of necessity **financed** by a net capital inflow.
- Alternatively, the country could engage in **official reserve transactions**, running down its reserves of foreign exchange, in the case of a deficit by selling foreign currency in the foreign exchange market.
- The decrease (increase) in official reserves is called the overall **balance of payments deficit (surplus)**.
- The balance of payments deficit or surplus is obtained after adding the current and capital account balances.

Autonomous and Accommodating Transactions:

- International economic transactions are called **autonomous** when transactions are made independently of the state of the BoP (for instance due to profit motive). These items are called „above the line“ items in the BoP.
- The balance of payments is said to be in surplus (deficit) if autonomous receipts are greater (less) than autonomous payments.
- **Accommodating transactions** (termed „below the line“ items), on the other hand, are determined by the net consequences of the autonomous items, that is, whether the BoP is in surplus or deficit.
- The official reserve transactions are seen as the accommodating item in the BoP (all others being autonomous).

- **Errors and Omissions** constitute the third element in the BoP (apart from the current and capital accounts) which is the „balancing item“ reflecting our inability to record all international transactions accurately.

THE FOREIGN EXCHANGE MARKET

- Demand for pounds would constitute a demand for *foreign exchange* which would be supplied in the *foreign exchange market* – the market in which national currencies are traded for one another.
- The major participants in this market are commercial banks, foreign exchange brokers and other authorized dealers and the monetary authorities.
- It is important to note that, although the participants themselves may have their own trading centers, the market itself is world-wide.
- There is close and continuous contact between the trading centers and the participants deal in more than one market.
- The price of one currency in terms of the other is known as the **exchange rate**. Since there is a symmetry between the two currencies, the exchange rate may be defined in one of the two ways.
- First, as the amount of domestic currency required to buy one unit of foreign currency and second, as the cost in foreign currency of purchasing one unit of domestic currency.
- This is the bilateral **nominal exchange rate** – bilateral in the sense that they are exchange rates for one currency against another and they are nominal because they quote the exchange rate in money terms, i.e. so many rupees per dollar or per pound.
- The **real exchange rate** – the ratio of foreign to domestic prices, measured in the same currency.
- If the real exchange rate is equal to one, currencies are at **purchasing power parity**. This means that goods cost the same in two countries when measured in the same currency.
- The real exchange rate is often taken as a measure of a country’s **international competitiveness**.
- Since a country interacts with many countries, we may want to see the movement of the domestic currency relative to all other currencies in a single number rather than by looking at bilateral rates. That is, we would want an index for the exchange rate against other currencies, just as we use a price index to show how the prices of goods in general have changed. This is calculated as the **Nominal Effective Exchange Rate (NEER)** which a multilateral rate is representing the price of a representative basket of foreign currencies,

each weighted by its importance to the domestic country in international trade (the average of export and import shares is taken as an indicator of this).

- The **Real Effective Exchange Rate (REER)** is calculated as the weighted average of the real exchange rates of all its trade partners, the weights being the shares of the respective countries in its foreign trade.
- It is interpreted as the quantity of domestic goods required to purchase one unit of a given basket of foreign goods.

Determination of the Exchange Rate

Flexible Exchange Rates

- In a system of **flexible exchange rates** (also known as **floating exchange rates**), the exchange rate is determined by the forces of market demand and supply.
- In a completely flexible system, the central banks follow a simple set of rules – they do nothing to directly affect the level of the exchange rate, in other words they do not intervene in the foreign exchange market.

Speculation:

- Exchange rates in the market depend not only on the demand and supply of exports and imports, and investment in assets, but also on foreign exchange speculation where foreign exchange is demanded for the possible gains from appreciation of the currency.

Interest Rates and the Exchange Rate:

- In the short run, another factor that is important in determining exchange rate movements is the **interest rate differential** i.e. the difference between interest rates between countries.
- There are huge funds owned by banks, multinational corporations and wealthy individuals which move around the world in search of the highest interest rates.
- Thus, *a rise in the interest rates at home often leads to an appreciation of the domestic currency.*
- Here, the implicit assumption is that no restrictions exist in buying bonds issued by foreign governments

Income and the Exchange Rate:

- When income increases, consumer spending increases. Spending on imported goods is also likely to increase.
- When imports increase, the demand curve for foreign exchange shifts to the right. There is a depreciation of the domestic currency.
- If there is an increase in income abroad as well, domestic exports will rise and the supply curve of foreign exchange shifts outward. On balance, the domestic currency may or may not depreciate. What happens will depend on whether exports are growing faster than imports.

Exchange Rates in the Long Run:

- The Purchasing Power Parity (PPP) theory is used to make long-run predictions about exchange rates in a flexible exchange rate system.
- As long as there are no barriers to trade like tariffs (taxes on trade) and quotas (quantitative limits on imports), exchange rates should eventually adjust so that the same product costs the same whether measured in rupees in India, or dollars in the US, yen in Japan and so on, except for differences in transportation.
- Over the long run, therefore, exchange rates between any two national currencies adjust to reflect differences in the price levels in the two countries

Fixed Exchange Rates

- Countries have had flexible exchange rate system ever since the breakdown of the Bretton Woods system in the early 1970s.
- Prior to that, most countries had fixed or what is called **pegged exchange rate system**, in which the exchange rate is pegged at a particular level.
- Sometimes, a distinction is made between the fixed and pegged exchange rates.
- It is argued that while the former is fixed, the latter is maintained by the monetary authorities, in that the value at which the exchange rate is pegged (the par value) is a policy variable – it may be changed.
- There is a common element between the two systems.
- Under a fixed exchange rate system, such as the gold standard, adjustment to BoP surpluses or deficits cannot be brought about through changes in the exchange rate.
- Adjustment must either come about „automatically“ through the workings of the economic system (through the mechanism explained by Hume, given below) or be brought about by the government.
- A pegged exchange rate system may, as long as the exchange rate is not changed, and is not expected to change, display the same characteristics.
- However, there is another option open to the government – it may change the exchange rate.
- A **devaluation** is said to occur when the exchange rate is increased by social action under a pegged exchange rate system.

Managed Floating

- Without any formal international agreement, the world has moved on to what can be best described as a **managed floating** exchange rate system.
- It is a mixture of a flexible exchange rate system (the float part) and a fixed rate system (the managed part).
- Under this system, also called **dirty floating**, central banks intervene to buy and sell foreign currencies in an attempt to moderate exchange rate movements whenever they feel that such actions are appropriate.
- Official reserve transactions are, therefore, not equal to zero.

THE DETERMINATION OF INCOME IN AN OPEN ECONOMY

National Income Identity for an Open Economy

- In a closed economy, there are three sources of demand for domestic goods –Consumption (C), government spending (G), and domestic investment (I).
- In an open economy, exports constitute an additional source of demand for domestic goods and services that comes from abroad and therefore must be added to aggregate demand.
- Imports supplement supplies in domestic markets and constitute that part of domestic demand that falls on foreign goods and services. Therefore, the national income identity for an open economy is where, NX is **net exports** (exports – imports).
- A positive NX (with exports greater than imports) implies a trade surplus and a negative NX (with imports exceeding exports) implies a trade deficit.

Equilibrium Output and the Trade Balance

EXCHANGE RATE

Changes:

- Changes in nominal exchange rates would change the real exchange rate and hence international relative prices.
- A depreciation of the rupee will raise the cost of buying foreign goods and make domestic goods less costly.
- This will raise net exports and therefore increase aggregate demand. Conversely, a currency appreciation would reduce net exports and, therefore, decrease aggregate demand.
- However, we must note that international trade patterns take time to respond to changes in exchange rates.
- A considerable period of time may elapse before any improvement in net exports is apparent

TRADE DEFICITS, SAVINGS AND INVESTMENT

- There is reason to worry about a country's long-run prospects if the trade deficit reflects smaller saving or a larger budget deficit (when the economy has both trade deficit and budget deficit, it is said to be facing twin deficits).
- The deficit could reflect higher private or government consumption.
- In such cases, the country's capital stock will not rise rapidly enough to yield enough growth (called the „growth dividend“) it needs to repay its debt.
- There is less cause to worry if the trade deficit reflects a rise in investment, which will build the capital stock more quickly and increase future output.
- However, we must note that since private saving, investment and the trade deficit are jointly determined, other factors too must be taken into account.