Block-III

Economics for Managers

Macroeconomics-I

Block

III

MACROECONOMICS – I

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BLOCK III: MACROECONOMICS – I

The third block to the course on Economics for Managers deals with the fundamental concepts relevant to macroeconomics. The block contains six units. The first four units are about basics of macroeconomics, including different schools of economics and a clear idea about national income, consumption and investment. The last two units discuss policies in macroeconomics.

The first unit, *Introduction to Macroeconomics*, deals with the elementary concepts of macroeconomics. As macroeconomics is the study of the economy as a whole, this unit helps us to understand the economy and issues like economic growth, inflation, unemployment etc.

The second unit, *National Income*, provides an idea about national income. National income, which is the aggregate income of an economy, is affected by government taxes, subsidies, expenditures, etc. Therefore, to know the factors that influence national income, a clear idea of the components of national income is necessary. The unit discusses the concept of circular flow of income, and the measurement of national income.

The third unit, *Consumption and Investment Function*, explains how an economy can reach equilibrium without government intervention, with government intervention and in the presence of international trade.

The fourth unit, *Classical and Keynesian Economics*, deals with a different concept. It provides opinions of different schools of economics on whether the government should play an active role in managing an economy or not.

The fifth unit, *Fiscal Policy and Budget Deficit*, provides different aspects of fiscal policy. Fiscal policy involves minimizing the effects of business cycles and maintaining stable price levels by using public expenditure and determining tax structure. The unit deals with objectives of fiscal policy and its components. The unit also provides an idea of budget and budgetary policy.

The sixth unit, *Banking and Money Supply*, introduces you to the role of financial system in an economy. Financial system which foster savings and channel them to their most efficient uses, is vital for the development of the economy. The unit also discusses the creation of money supply in an economy and components of money supply.

Unit 11

Introduction to Macroeconomics

Structure

11.1 Introduction

Till now, we have discussed about different theories in microeconomics like theories of demand and supply, theories of production and cost and theories of factors of production. We also understood different market structures and the importance of forecasting and decision making in business. From this unit onwards, we will discuss about macroeconomics and different issues related to it.

The economic environment keeps changing both at national and international level. Macroeconomics is the study of economy as a whole. It analyzes the various causes of problems like unemployment, low economic growth, fluctuation in business cycles, etc. as they relate to the economy as a whole. It also explains issues like: what is economic growth, how it can be measured, how it helps an economy, what is inflation and deflation, how economic growth reverses deflationary trends, how inflation can be controlled, how a nation's economy is related to the international economy, etc.

This unit will discuss the importance of macroeconomics, its objectives and instruments and the basic concepts of macroeconomics.

11.2 Objectives

By the end of this unit, students should be able to:

- Explain the development of macroeconomics;
- Recognize the objectives of macroeconomic policies;
- Explain different instruments of macroeconomic policies and select suitable policies to achieve a specific macroeconomic objective;
- Discuss some of the basic concepts of macroeconomics.

11.3 Development of Macroeconomics

Macroeconomics has undergone two distinct phases in its evolution. The classical school of economics, beginning with Adam Smith in the eighteenth century, has contributed the older version of the subject. This approach is famously associated with the twin ideas of the 'invisible hand doctrine' & 'laissez faire'. It is useful to understand the implications of these two terms in the context of macroeconomics. The 'invisible hand' doctrine is fundamental to understanding Adam Smith's economic worldview while the idea of 'laissez faire' sums up the ideological position of his classical school with regard to economic role of government in a market-based economy. In his famous book entitled, "An Enquiry into the Nature & Causes of Wealth of Nations", which he authored in the year 1776 while teaching sociology at the University of Glasgow, he begins his analysis by referring to the working of an economic system as the unintended consequence of individual self-interests of different professions within it. Specifically, he states that it is not the 'benevolence' of different traders but their desire for individual profit-maximization which causes the nation's collective economic progress as though an invisible hand were at work to plan it that way. This is his famous 'invisible hand doctrine'.

When compared to various fields of economics, the study of macroeconomics is a relatively new development. Before Keynes looked at the macro economy, there was only one school of economic thought i.e. the classical school of economic thought. The classical school of economic thought emphasized only microeconomics. Due to their emphasis on micro-level analysis, classical economists believed there was a natural tendency towards an equilibrium position due to the interaction of individual economic agents. Therefore, in their opinion, there was no need for any kind of government intervention in the economy; market forces guided by the price mechanism would lead the economy to a full employment level within a short period of time.

Keynes published the book '*The General Theory of Employment, Interest and Money'* in 1936. The book was an attempt to understand the Great Depression of the 1930s, during which a prolonged high unemployment rate gripped the western capitalist economies. Keynes had a different perspective on the situation in the industrial economies of the time. In his *General Theory,* he explained the reasons for prolonged unemployment and also provided various suggestions to overcome the problems the industrial economies were facing at the time. He advocated the intervention of governments to deal with macroeconomic problems such as inadequate aggregate demand. However, his prescriptions were not useful for solving problems that gripped industrial economies in the post-World War II period. This led to the refurbishment of the Classical Theory by Neo-classical economists in the 1950s.

Between World War II and the 1970s, economic policies were concerned only with inflation and unemployment. Governments used fiscal and monetary policies

to reduce unemployment and inflation. This led some economists to argue that economic policy had become concerned only with short-run management of aggregate demand. Some of them proposed that instead of changing fiscal policies from time to time, the money supply in the economy should be allowed to grow at a fixed rate and this would address issues like inflation and unemployment. These economists were called Monetarists because of the importance they gave to money supply as a determinant of economic activity. In the 1970s, a new theoretical approach named the Theory of Rational Expectations came into existence. This theory had its foundations in Classical Theory. In the 1980s, another new school of economic thought called supply-side economics gained prominence. Supply-side economists stressed the importance of providing incentives to people to work and save, there by using supply as a factor to control inflation and unemployment.

Check Your Progress - 1

1. Which of the following groups of economists focused primarily on microeconomics?
   a. Classical
   b. Keynesian
   c. Neo-Keynesian
   d. Modern
2. The Theory of Rational Expectations came into existence in _____
   a. 1950s
   b. 1960s
   c. 1970s
   d. 1980s

11.4 Objectives and Instruments of Macroeconomics

It is necessary to learn about the objectives of macroeconomic policy, before studying macroeconomic theory and the alternative policies available. The objectives of macroeconomic policy are to achieve high level of output (GDP), price stability, full employment, sustainable balance of payment and rapid economic growth.

Some key variables like Gross Domestic Product, inflation and unemployment rate help economists to measure the macroeconomic performance of an economy.

11.4.1 Gross Domestic Product (GDP)

The GDP is the most complete measure of the value of economic activity in an economy. It measures the market value of all products produced using factors of production during a specified period of time and within the boundaries of a country. If nominal GDP is adjusted for price changes (inflation), we get real GDP. The maximum output that an economy produces at full employment level

is its potential GDP. The amount by which actual GDP falls short of potential GDP is called the GDP gap.

Exhibit 11.1 shows the GDP annual growth rate in India from 2010 to 2020

Exhibit 11.1: India's Annual GDP Growth Rate 2010-2020

Year	Growth Rate (%)
2010	8.498
2011	5.241
2012	5.456
2013	6.386
2014	7.410
2015	7.996
2016	8.256
2017	6.795
2018	6.533
2019	4.042
2020	(7.965)

Source: World Bank national accounts data https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?end=2020&locations=IN&start=2010

11.4.2 Full employment level

One of the primary objectives of macroeconomic policies is to achieve full employment level by minimization of unemployment. The unemployment rate can be described as the percentage of people in an economy who are unemployed as a fraction of the total working population. The unemployment rate gets affected by business cycles. The unemployment rate can be kept in check by ensuring stable economic growth.

11.4.3 Price stability

The purchase power of money is determined by prices. If there is movement in the price level of products, the purchasing power of money also changes. An overall increase in prices is called an inflationary trend, while decreasing prices characterize deflation. An extreme form of inflation, where prices rise by thousands of percentage points in a year is known as hyperinflation. Constant movements in the price level make things difficult for both ordinary citizens and policy makers. Further, rapid price changes disturb the economy as a whole.

11.4.4 Sustainable balance of payment

Due to globalization, increasing significance is being attached to business transactions between countries. The transactions consist of imports and exports of products, investments, borrowings, etc. In order to monitor all these transactions, countries keep a track of these transactions by maintaining Balance

of Payments (BoP) statistics. The Balance of Payments of a country is a systematic record of all economic transactions between that country and the rest of the world. The difference between the value of imports and exports is known as net exports; this is also called "balance of trade." If imports exceed exports, then it is termed negative net exports. With reduced trade barriers and better transportation and communication facilities, international trade has been facilitated, and the world economy has become increasingly integrated. Therefore, policy makers should understand the implications of globalization and develop strategies accordingly to provide competitive advantage for their countries.

11.4.5 Economic growth

The economic performance of a nation is judged by the rate of growth it achieves. Every nation would like to have a high rate of economic growth. Usually economic growth refers to an outward shift in the production possibility curve due to improvements in existing technology and certain factors of production leading to growth in real output and real per capita output. The rate of growth of real per capita output depends on the population growth rate.

If the GDP is growing at g% per annum and population at p% per annum, per capita GDP must be growing by

$$= \left[\frac{1+g}{1+p}\right] - 1$$

The objective of macroeconomic policies is to raise economic growth to a higher level.

Exercises

A. In an economy, the GDP is growing by 10%, while exports are growing by 3%. If the growth of population is 5%, the per capita GDP of the country has increased by

   a. 3.5%
   b. 4.7%
   c. 5.2%
   d. 5.9%

B. The growth rate of population in a country is 4%. If the rate of inflation is 2% and growth rate of GDP is 6%, the growth rate in per capita nominal GDP is

   a. 2.0%
   b. 2.5%
   c. 3.0%
   d. 3.25%

Activity 11.1

Assume you are contesting for a Member of Parliament (MP) seat against the ruling party in one of the constituencies of India. In that particular constituency you noticed lot of anti-incumbency factors. After doing some assessment, you found that the people are not happy with the macroeconomic policies of the ruling government. Considering this, one of your supporters suggests that you should present a set of clear cut macroeconomic objectives of your party before people. Discuss the macroeconomic objectives you would consider including in your party's manifesto.

Answer:

Check Your Progress - 2

3. _____ is the maximum output level an economy can achieve when all its available resources are fully employed.
   a. Real GDP level
   b. Actual GDP level
   c. Potential GDP level
   d. Nominal GDP level
4. _____ is a systematic record of all economic transactions between a country and the rest of the world.
   a. Capital account
   b. Current account
   c. Balance of payments
   d. Balance of trade
5. What is the most comprehensive measure of the value of economic activity in an economy?
   a. GNP
   b. GDP
   c. NNP
   d. GNI

11.5 Instruments of Macroeconomic Policy

To achieve economic objectives, governments have to use various macroeconomic policies. They are fiscal and monetary policies, employment policy, international trade policy, exchange rate policy, and prices and income policy.

Instruments that can be used to achieve government objectives

Objectives	Instruments/ tools
High output level Low unemployment rate Stable price level Maintenance of BoP Steady economic growth	Monetary policy Fiscal policy Exchange rate policy International trade policy Prices and Incomes Policies Employment Policy

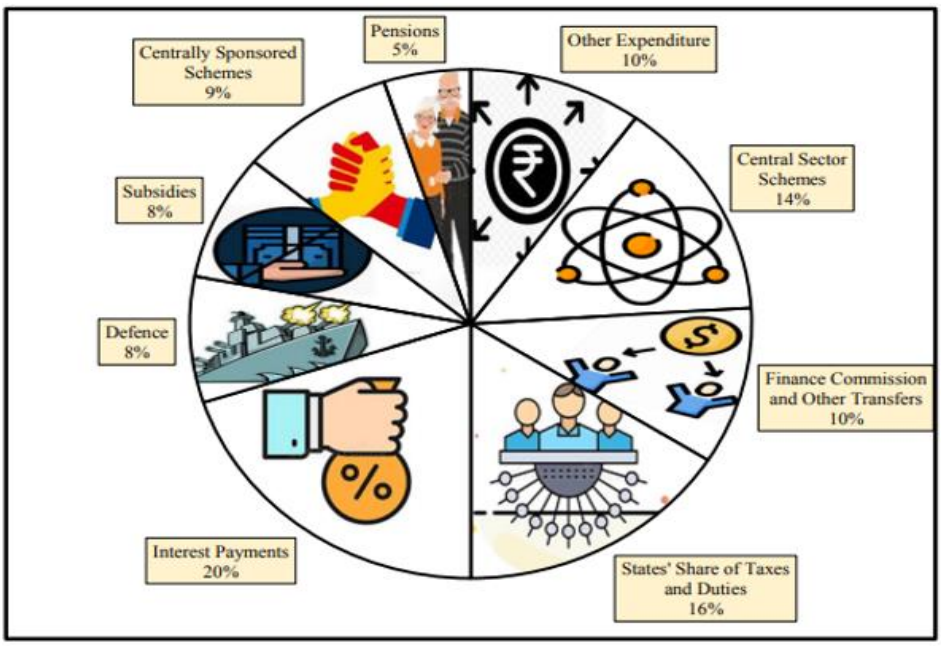
Source: ICFAI Research center

11.5.1 Fiscal policy

Fiscal policy refers to the government's program with regard to 1) expenditure like purchases of products and spending on transfer payments, and 2) mobilization of resources through the amount and type of taxes. As per the International Monetary Fund (IMF), Fiscal Policy is the use of government spending and taxation to influence the economy.

Government controls economic activity through its spending on infrastructure projects, financial assistance to elderly people and also to the unemployed, salaries to public servants, etc. thus influencing the GDP level. Figure 1.1 below shows how the purposes for which expenditure is to be incurred as per Union Budget 2021. The government can also either increase or decrease the rate of tax and this has a direct impact on people's disposable income. The change in disposable income in turn affects the spending and savings of people, which in turn affect the overall output and investment in the economy both in the short run and in the long run.

Figure 11.1: Budget Highlights 2021 – Government Spending (%)



Source: Union Budget 2021. https://www.indiabudget.gov.in/doc/bh1.pdf

11.5.2 Monetary policy

Money acts as a medium of exchange in all modern societies. Money can also be regarded as a financial asset as it can be exchanged for goods and services. Money can be any financial asset with a high degree of liquidity. There are various institutions, which create such financial assets. The amount of liquidity in the economy has an impact on credit conditions, interest rates, etc. Financial institutions are guided and controlled by the actions of the central bank of the country. Put in other words, the policies the central bank uses to guide and control money, interest rates and credit conditions are collectively referred to as monetary policy. The instruments of monetary policy include reserve requirements, bank rate, open-market operations, etc., which are dealt with in detail in a later unit.

Activity 11.2 Assume you have been appointed as the economic advisor to the Finance Minister by the Government of India. In one of the meetings with the finance minister, the finance minister asked what measures could be taken to reduce unemployment in the country. What fiscal measures do you suggest to the finance minister to reduce unemployment? **Answer:**

In India, the Reserve Bank of India being the central bank dons the role of controlling and guiding the financial institutions in the country in order to influence the total quantity of money, interest rates and total volume of credit in the economy.

11.5.3 International trade policy

For the last two decades, there has been an increase in international trade, and many economies have become highly dependent on it. Many countries started using their trade policies strategically to enhance economic growth. The severe economic crisis in India in 1991 forced the nation to adopt globalization and liberalization. The liberalization of Indian economy made the Government of India introduce some significant changes in its export-import (EXIM) policies. Exports and imports in India, come under the purview of Ministry of Commerce. The EXIM policy (1997-2002) emphasized on the importance of acceleration of exports and put forth various measures for restructuring the various export promotion schemes and bringing more transparency into the system.

Government of India evolved the Foreign Trade Policy (2015-2020) which came into force w.e.f. 05.12.2017. As per this policy, DGFT (Directorate General of Foreign Trade) was to function as a facilitator for exports from and imports into the country. The policy laid out the general provisions for conduct of exports and imports. IEC (Importer –Exporter Code) was made mandatory for any export or import transaction.

11.5.4 Exchange rate policy

The foreign exchange rate of a country influences the international trade of a country. The foreign exchange rate can be described as the rate at which one country's currency is exchanged against the currency of the other country. The exchange rate policy also falls under the purview of monetary policy. There are different types of exchange rate systems followed by different countries. The types of exchange rate system are fixed exchange rate system and floating exchange rate system. In the fixed exchange rate system, the exchange rate of the currency is fixed or stable against other currencies. In floating or flexible exchange rate system, the exchange rate of the currency is determined by supply and demand.

Before 1992, the exchange rate of Indian rupee was fixed, and was pegged against British pound and US dollar. After 1992, the Indian government adopted a market-based exchange rate system, where the market forces (and some amount of RBI intervention) determine the exchange rate. In 2000, the Foreign Exchange Regulation Act (FERA) was replaced by the Foreign Exchange Management Act (FEMA), to boost foreign investment in the country.

Countries may adopt different exchange rate systems based on the exchange rate arrangements with other currencies. Exhibit 11.2 captures the exchange rate arrangements as per its Annual Report 2018.

Exhibit 11.2: Exchange Rate Arrangements – 2018

IMF's classification of exchange rate arrangements is based on the members' arrangements. The system describes four major categories of exchange rate arrangements:

1. Hard Pegs: These are exchange rate arrangements with no separate legal tender and currency board arrangements. For example, Equador does not have a separate legal tender of its own. Instead, it has an arrangement with US Dollar, which is used as legal tender.
2. Soft pegs: These are pegged arrangements within which there are various categories such as conventional pegged arrangements, stabilized arrangements, crawling peg arrangements etc. In the soft peg arrangements, the countries may peg their currency to another currency or a basket of currencies. For instance, UAE's currency dirham is pegged to US Dollar.
3. Floating Regimes – These have market determined exchange rates. Countries like India, South Africa, USA, UK have floating exchange rate systems.
4. Residual Category – The residual category consists of other types of managed arrangements that countries adopt temporarily during periods of volatile foreign exchange market conditions.

Source: IMF's Annual Report on Exchange Arrangements and Exchange Restrictions, 2018
https://www.imf.org/en/Publications/Annual-Report-on-Exchange-Arrangements-and-Exchange-Restrictions/Issues/2019/04/24/Annual-Report-on-Exchange-Arrangements-and-Exchange-Restrictions-2018-46162

11.5.5 Prices and income policy

The working of the market economy is influenced by price and income policies. Here, government decides about the prices of certain products and determines the minimum wages. These measures are undertaken by the government to control inflation and protect jobs in the domestic market. However, many economists are of the view that these measures should be of temporary in nature as they may lead to distortions and inefficiencies in the economy if continued for long.

11.5.6 Employment policy

Policies that are aimed at generating more employment opportunities are referred to collectively as employment policy. In India, during the non-agriculture seasons, the government takes on projects that require huge amounts of manpower to absorb excess unemployed agricultural laborers. Similarly, the government sometimes provides free training facilities to unskilled labor, to make them fit for new skilled jobs.

Activity 11.3

In a particular nation, people are facing hardships due to the rapid increase in prices of various commodities. Their earnings are not sufficient to meet the growing increase in expenditure due to high inflation. In such situation, if you are appointed as the Governor of the central bank of that nation, which macroeconomic policy would you use as an instrument to control inflation? Also explain the different instruments that can be used under the chosen macroeconomic policy.

Answer:

11.6 Basic Concepts in Macroeconomics

In this section, we will briefly discuss some of the basic concepts in macroeconomics.

11.6.1 Stock and flow variables

In economics, while studying about a variable, it is important to know whether the variable is a stock variable or a flow variable. A stock variable is measured at a specific point of time while a flow variable is measured over a specified period of time. Put in other words, a stock variable measures the level of variable at a particular point of time, whereas a flow variable measures the change in variable for a particular period of time.

A stock variable represents the level of a variable. For instance, the rupee value of a firm, total number of people employed in India at a particular time, the

amount of water in a lake, etc. A flow variable signifies the change per unit of time. For instance, revenue and expenditure for a firm during a particular period, number of persons who were employed during a particular period, amount of water flown during a particular period, etc. Other examples are the accounting balance statement, which is a stock variable (balance sheet as on 31st December 20x1), whereas the profit and loss account is a flow variable (profit and loss account for the year 20xx-x1).

Macroeconomics variables such as money supply, consumer price index, unemployment level, and foreign exchange reserves are examples of stock variables. GDP, inflation, exports, imports, consumption and investment are examples of flow variables.

11.6.2 Equilibrium and disequilibrium

Equilibrium refers to a state of balance between two opposing forces or actions, whereas disequilibrium refers to a state of equilibrium or balance has not occurred. Economic equilibrium is a state where the actions are repeated in a manner that balances out, and it does not mean motionless state. Even if the forces acting on the system are in a continuous state of change, still equilibrium state exists as long as the net effect is not going to disturb the existing established equilibrium position.

11.6.3 Statics and dynamics

Economic models deal with stock and flow variables. At a particular point of time the variables can be in a state of equilibrium or disequilibrium. If the variables are in equilibrium and tend to be regenerated at the same level from one time period to another, they are said to be in a state of 'stationary equilibrium'. If the variables are in a state of disequilibrium, in all likelihood, they will have different values in the next time period.

Models which do not consider explicitly the behavior of variables from one time period to another are called 'static' models. Static models indicate the values of variables for a given time period, but cannot indicate what their values will be in the next period as they do not include the time dimension. Dynamic models explicitly consider the movement of variables over different time periods.

Check Your Progress - 3

6. Which of the following policies deal with the government's spending and mobilization of resources?

   a. Monetary policy

   b. Fiscal policy

   c. Trade policy

   d. Revenue policy

7. In which of the following economic models, variables do not have a time dimension?
   a. Static
   b. Dynamic
   c. Dated
   d. Flexible
8. Which of the following is an example of a flow variable?
   a. Change in money supply
   b. Foreign exchange reserves
   c. Consumer price index
   d. Gross capital stock

11.7 Summary

- In this unit, the role of macroeconomic variables in analyzing the problems in the economy is discussed. Macroeconomics gained importance after the Great Depression of the 1930s. The importance of macroeconomics led to the development of various schools of thought such as Keynesian economics, Monetarism, supply side economics etc.
- Gross domestic product (GDP) measures the economic performance of a country. The other indicators are level of employment in the economy and movements in the price level. Macroeconomic objectives like full employment, stable prices, economic growth, etc. are achieved by the government using both fiscal and monetary measures. Through fiscal policy, the government can monitor the government expenditure and revenues and accordingly mobilize the required resources.
- Monetary policy also plays a significant role in an economy as money is the medium of exchange. The flow of money in an economy is regulated through various monetary instruments like bank rates, open market operations, etc.
- Policies on exchange rate, international trade, employment, price and income also play an important role in achieving macroeconomic objectives. The unit also examined some basic concepts of macroeconomics such as statics and dynamics, stocks and flows, and equilibrium and disequilibrium.

11.8 Glossary

Balance of trade: The part of nation's balance of payments that deals with merchandise (or visible) imports or exports, including such items as foodstuffs, capital goods, and automobiles.

Business cycles: Fluctuations in total national output, income, and employment, usually lasting for a period of 2 to 10 years, marked by widespread and simultaneous expansion or contraction in many sectors of the economy.

Consumer price index: It is an economic statistic that measures the average change in the prices of goods and services consumed by the population of a country.

Deflation: A fall in the general level of prices.

Depression: A prolonged period characterized by high unemployment, low output and investment, depressed business confidence, falling prices, and widespread business failures.

Disposable income (*DI*): Roughly, take-home pay, or that part of the total national income that is available to households for consumption or saving.

Exchange rate: Exchange rate means the price of one currency in terms of another.

Foreign exchange rate: The rate, or price, at which one country's currency is exchanged for the currency for another country.

Foreign exchange reserves: Foreign exchange reserves refer to the amount of foreign currency (typically US dollars, German marks, Japanese yen, or other "hard" or "reserve" currency) held by a nation's banking system as a reserve base, or financial backup, for its international transactions and payments.

Nominal GDP: The value, at current market prices, of the total final output produced inside a country during a given year.

Real GDP: Nominal GDP corrected for inflation, i.e., real GDP = nominal GDP divided by the GDP deflator.

Keynesian economics: The body of thought developed by John Maynard Keynes holding that a capitalist system does not automatically tend toward a full-employment equilibrium. According to Keynes, the resulting underemployment equilibrium could be cured by fiscal or monetary policies to raise aggregate demand.

Net exports: The total value of goods and services exported during the accounting period minus the total value of goods and services imported.

Open market operations: Central bank purchases or sales of securities in the securities market.

Supply-side economics: A school of thought that emphasized the impact of *aggregate supply* on the economic growth of nations. The supply-side economists believed that incentives and tax-rates influence the economy's aggregate supply to a great extent.

Unemployment rate: The unemployment rate is the number of unemployed people as a percentage of the total labor force.

11.9 Self-Assessment Test

1. Explain the development of macroeconomics.
2. Describe some of the key objectives of macroeconomic policy.
3. Discuss some of the basic concepts in macroeconomics.

11.10 Suggested Reading/ Reference Material

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11.11 Answers to Check Your Progress Questions

11.11.1 Model Answers to Check Your Progress Questions

Following are the model answers to the Check Your Progress questions given in the Unit

1. (a) Classical

Classical economists felt that macro economic goals such as full employment, price stability, will be automatically achieved because of the operations of market forces – demand and supply forces, when there is no government interference. Hence, they gave most emphasis to microeconomics by advocating *laissez faire,* whereas economists belonging to other schools of thought emphasized the macro aspects of economics.

2. (c) 1970s

In the 1970s, a new theoretical approach named the Theory of Rational Expectations came into existence. This theory had its foundations in Classical Theory..

3. (c) Potential GDP level

Potential GDP is the maximum output an economy can produce when all its available resources are fully employed and economic activity is at its peak. This results in low unemployment rates and high production levels.

4. (c) Balance of payments

Balance of payments keeps a track of all the trading activities between a country and the rest of the world. Balance of Trade is the difference between the value of exports and the value of imports.

5. (b) GDP

GDP is calculated after deducting the net exports from the total expenditure. It takes into account factors like consumption expenditure, gross investment, government expenses and the net exports. Therefore, GDP gives a comprehensive picture of the economy.

6. (b) Fiscal policy

Fiscal policy is a macroeconomic policy instrument concerned with government expenses and revenues. Monetary policy is used to influence the total quantity of money, interest rates and total volume of credit in the economy.

7. (a) Static

Static models indicate the values of variables for a given time period, but cannot indicate what their values will be in the next period. Whereas in dynamic models which can also be called as dated models, movement of variables over different time periods is considered.

8. (a) Change in money supply

A flow variable is measured over a specified period of time, while a stock variable is measured at a specific point of time. A stock signifies the level of a variable at a point of time. A flow represents the change in the level of a variable over a period of time. As change in money supply is measured over a specified period of time, it is a flow variable and not a stock variable. The other given variables are measured at a specific point of time.

11.11.2 Model Answers to Exercises

Following are the model answers to the Exercises given in the unit.

A. (b) 4.7%

Growth in per capita income = $[(1 + g)/ (1 + p)] – 1$, where g = growth of GDP and p = growth of population. Thus, increase in per capital income = $[(1 + 0.1)/ (1 + 0.05)] – 1 = 0.047$ or 4.7%.

B. (a) 2.0%

$= (1.06)/ (1.04) – 1$

$= 0.192$ or 1.92%

Therefore, the nearest value in the options is 2.

Unit 12

National Income

Structure

12.1 Introduction

In the previous unit we discussed about the objectives of macroeconomics and different instruments of macroeconomic policies.

The national income statistics of a country encapsulate important data about the economy such as the level of output produced, the income generated in the economy as a whole, etc. The level and break-up of the national income provides insights into the working of the economy and its performance. It also helps in understanding how output relates to income and how government taxes, subsidies, expenditures, etc., affect the economy.

In this unit, we will discuss the circular flow of income, the various factors that influence the national income, different approaches to measure national income and the problems that arise in measuring it.

12.2 Objectives

By the end of this unit, students should be able to:

- Explain circular flow of income
- Identify various factors that determines the size of the national income
- Discuss and describe different approaches to measuring national income
- Calculate different components of national income from given data
- Recognize the problems involved in measuring national income
- Explain the uses of national income statistics

12.3 Circular Flow of Income

There are two flows in an economy – real flow and money flow. The real flow refers to the circular flow of goods and services between households and business firms. The production process and the exchange of products generate income. The money flow refers to the payment of cash made by firms to the households for their services, and the payments of cash by households to firms when they purchase goods and services from firms. Thus, there is a continuous flow of money and income between firms and households.

The circular flow of income can be explained through four models 1) in a closed economy, which consists of only two sectors – households and business firms without savings, 2) two sectors with savings, 3) three sector model and 4) four sector model.

The circular flow of income in the two sector model can be looked at in two ways – with savings and without savings.

12.3.1 Circular flow of income in the two-sector model without savings

In order to analyze the two-sector model, assume there are no savings in the two sector economy, which consists of only households and firms. Since households cannot produce all the goods and services they need, they buy it from firms. This generates income for firms. To produce products, firms have to engage factors of production like land, labor, capital and entrepreneurial skills. The firm has to pay for the factors of production and the factors of production belong to one household or other. So, there is a flow of money from firms to households in the form of income. In an economy that satisfies certain assumptions (e.g. that output is produced adequately without holding inventories and the whole income of the household is spent on consumer goods and services without any savings), the circular flow of money will continue as long as households spend all their income and firms keep distributing all their revenues. But in reality, the circular flow does not continue at the same level in the long run, as both households and firms have to comply with tax regulations, etc (i.e. there are diversions from the circular flow).

National Income & the Circular-Flow Model

In a circular-flow model of a modern mixed economy, the households are depicted as the owners of the four kinds of factors of production viz. labour, capital, land, & enterprise (also referred to as entrepreneurship). These four categories of factors of production are hired by the firms to efficiently organize the production of all final goods (including services). To efficiently organize such production activities means to produce goods at least possible total cost. Therefore, the households are owners of all factors of production you could imagine while firms are the producers & sellers of all the goods possible to produce.

The magnitude of economic activity within the economic system is gauged in national income estimation process as the aggregate money value of all the final goods that get produced in a year. Such an estimate is called the national income or national output/product of a country. While there are alternative methods & corresponding measures of national income, the Gross Domestic Product (GDP) is the most popular. It is often used as an indicator of the health of any country's economic condition. As contributors to the national income of a country, the four factor-types of labour, capital, land (also natural resources similar to it), & enterprise respectively earn their shares of compensation viz. wages, interest, rent, & profit. The sum of the value of these aggregates of incomes must logically be equal to the country's national income for a year.

As we move from a simple two-sector model without savings (explained above) to the subsequent more complex models with savings & with investments, & later on, to models including the government as a third sector, & finally to the most realistic four-sector model which includes contributions to the economic system by foreign trade, we will understand what are identified in macroeconomic theory as 'leakages' & 'injections'. Leakages are slippages of purchasing power out of the circular flow model referred to above. These happen in three possible ways:-

a. Savings(S) of households are incomes not being spent immediately on consumer goods. Households would not, realistically-speaking, spend all their factor-incomes explained above in the form of wages, interests, rents, & profits, at the same time as they earn. Human beings save part of their income for a rainy day. The following identities summarize the underlying logic of this phenomenon: Disposable Income (DI) = Gross Domestic Product (GDP)-Net Taxes (NT), where NT=Taxes-Transfers. Further, DI=Consumption Expenditures(C) +Savings(S). It must be remembered that all the variables in any macroeconomic discussion are aggregative or collective in nature, the value of which are statistically estimated for the entire nation (or a specified location). DI is the aggregate purchasing power of households in the circular flow model. The households either spend it on consumption now or save it for a future requirement. They actually do both. The Savings(S) are here the leakages i.e. the purchasing power slipping out of the circular flow at present. What happens to S afterwards? Macroeconomic theory assumes that all of it gets routed through the financial sector comprising of banks, non-banking financial companies, & the capital markets.

b. Taxes (T) comprise of all levies by governments at all levels-national, regional, & local-either on incomes & wealth or on consumption. Whatever be the nature of this levy, T is always a slippage of purchasing power out of the circular flow. Direct taxes are levied on incomes or wealth. Indirect taxes are levied on consumption activities. This is the second type of leakages. The government-sector is seen as the receptacle of the proceeds of all these levies.

c. Net Exports (symbolically, NX) is equal to the value of Exports (symbolically, X) minus the value of Imports (symbolically, M). This national income accounting entity is a component of national income measurement (GDP) compiled by the expenditure method. However, the magnitude of Imports (M) is what the nation as a whole spends on importing goods from the Rest of the World (ROW). This, therefore, is the purchasing power or money value leaving the economic system. Hence, M must be seen as a leakage from the circular flow to ROW. It contributes to the foreign exchange of the nations from whom our nation is sourcing its Imports.

12.3.2 Circular flow of income in the two sector model with savings

In the previous example, it was assumed that households spent their total income. But in reality, households do not spend all their income but save part of it. The unspent part is called savings.

Savings can be expressed mathematically as:

S = Y – C, where Y is income and C is consumption, and S is saving.

An increase in savings decreases the circular flow of money and there will be reduction in income as savings reduces expenditure. These savings are transferred to banks by households, and are then forwarded to business firms in the form of loans and advances. These transactions ensure money comes back into the circular flow. However, some people retain their savings in the form of cash with them instead of depositing in a bank. This is termed as a leakage from the circular flow of income. This leakage leads to a fall in overall income in the economy.

Expenditure on goods that are not directly consumed but help in the production process is called investment. These expenditures are made by firms. To raise funds, firms borrow money from banks and financial institutions. The firms' own retained earnings can also be used for investment. Investment results in an increase in the income in the circular flow and also raises the income level over a period of time. Households invest their savings in the capital market and firms borrow from the capital market to invest. However, savings and investments in an economy are not always equal. If savings exceed investments in an economy, it results in a decline in income flow and vice versa. When investments are more than savings, the income leakage in the form of savings from the circular flow of income is more than neutralized by new investments in the economy. Thus it pushes the income level up and after some time lag, savings and investments become equal at a higher income level.

12.3.3 Circular flow of income in a three-sector economy

In the three-sector model, the government is the additional sector. The government has many sources of revenue of which taxes are one of the major sources. Taxes are levied on both households and business firms. Personal tax is levied on households and corporate tax is levied on business firms. The revenue generated from both these sources forms the total revenue of the government. If

the tax revenue of the government is less than the expenditure incurred, the government borrows money from the capital market, thus causing a flow of money from the capital market to the government. But if the revenues exceed expenditure, money will flow from the government to the capital market. If the government retains the surplus, the circular flow of income will decline.

12.3.4 Circular flow of income in a four sector economy

Today, all countries trade with one another. The fourth sector included in this model is the external world with which the country carries on trade. Imports lead to outflows of income from the country and exports of a country cause inflows of income into the country to the factors of production provided by households. The country's income is increased by the amount of exports and there is also a rise in the income level in the circular flow. Therefore, exports cause inflows of income into the circular flow of income. If imports exceed exports, there will be a leakage of income, which will be equal to the deficit in the foreign trade. But, if exports exceed imports, there will be a favourable balance of trade and the surplus will increase the level of income in the circular flow of income.

Check Your Progress - 1

1. _____ helps in understanding how output relates to income and how government taxes, subsidies, expenditures, etc. affect the economic outcome.
   a. National income
   b. National savings
   c. Gross domestic productivity
   d. Gross domestic savings
2. In the four sector model of economy, what leads to an increase the circular flow of income?
   a. When imports exceed exports
   b. When exports are equal to imports
   c. When exports exceed imports
   d. Both a and b above
3. Which are the two sectors involved in the two-sector model of economy?
   a. Household and bank sectors
   b. Household and foreign sectors
   c. Household and business sectors
   d. Business and foreign sectors
4. What is the circular flow of goods and services between households and businesses known as?
   a. Real flow
   b. Natural flow
   c. Artificial flow
   d. Final flow

5. The effect of imports on the circular flow of income leads to _____.
   a. Outflow of income
   b. Inflow of income
   c. Nature of imports
   d. Quality of import

12.4 Factors Affecting the Size of a Nation's Income

Natural resources, human resources, capital resources and self sufficiency are some of the factors that affect the size of the national income.

Natural resources: These include minerals, agricultural potential and energy resources.

Human resources: A large literate population with the knowledge and skills required in wealth creating processes contribute to the achievement of a large national income.

Capital resources: Large capital resources like tools, plants and machinery, factories, mines, domestic dwellings, schools and colleges, infrastructure facilities like roads, railways, airports, seaports and communication facilities contribute to the growth of national income.

12.5 Approaches to National Income

There are three ways to measure national income: product approach, income approach and expenditure approach.

12.5.1 Product approach

In this approach, the national income is measured by calculating the total value of the final output of a country. The amount of each of these goods and services produced in a given year is denoted by Q_1, Q_2, Q_3.....Q_n and their respective market prices are denoted by P_1, P_2, P_3,....P_n.

National income can be obtained by summing up the quantities of goods and their prices. Mathematically this can be represented as:

$NI = P_1Q_1 + P_2Q_2 + P_3Q_3 + ...P_nQ_n$.

12.5.2 Income approach

The annual flow of factor earnings in the form of wages, rents, interest and profits accrued from labor, land, capital and organization respectively are taken into account in the income approach. All these factors contribute to the production of the final output. The value of final output can also be expressed as the total income of factors used in the production process such as building or land, capital, households and organizations.

Mathematically this can be expressed as:

$P_iQ_i = W_i + R_i + I_i + P_i$

Where W, R, I and P stands for wages, rents, interest and profits respectively.

12.5.3 Expenditure approach

In the expenditure approach, national income is measured by aggregating the flow of total expenditure on the final goods and services in an economy. Any economy broadly consists of households, business firms and government. Household expenditures can be measured by aggregating their expenditures on the various goods and services. Similarly for the other two sectors, their expenditures can be measured. So the national income will be equal to the sum of expenditures of all the three sectors. Mathematically this can be expressed as:

$Y = E_n + E_b + E_g$ where E_n, E_b and E_g denote the annual flow of expenditures by the household, business and government sectors respectively.

Check Your Progress - 2

6. Which of the following is not a factor that affects the national income in broader terms?
   a. Natural resources
   b. Human resources
   c. Political stability
   d. Technology
7. The annual flow of factor earnings in the form of wages, rents, interest and profits accrued from labor, land, capital and organization respectively are taken into account in which of the following approaches to measuring national income?
   a. Income approach
   b. Expenditure approach
   c. Product approach
   d. All the approaches consider factor earnings
8. Which of the following statements best describes the product approach to measuring national income?
   a. The products of goods and services produced and their respective prices are added up to arrive at the national income
   b. The sum of goods and services produced and their respective prices are added up to arrive at the national income
   c. The products of goods and services produced and their respective prices are multiplied to arrive at the national income
   d. The sum of goods and services produced and their respective prices are multiplied to arrive at the national income

9. Which of the following statements best describes the expenditure approach to measuring national income?

   a. National income is measured by taking the product of the flow of total expenditures on the final goods and services in an economy

   b. National income is measured by taking the difference between total expenditures and revenue on the final goods and services in an economy

   c. National income is measured by aggregating the flow of total expenditures on the final goods and services in an economy

   d. National income is measured by aggregating the flow of total expenditures on the raw materials used in producing the final goods

12.6 Measures of Aggregate Income

12.6.1 Gross and Net concepts

The word 'gross' is used when no allowances have been made for capital consumption and 'net' is used when provision for capital consumption has been made. Therefore, the difference between the gross and net is depreciation.

12.6.2 Domestic and national concepts

The term national includes the income of all the factors irrespective of whether they are staying in the home country or abroad. Domestic product is the value of total output or income generated within the domestic territory of a country. So, the output or income generated within a country either by residents or non residents is included in the domestic product.

12.6.3 Market prices and factor cost

The factor cost of a good is the total of the costs of production of the good i.e. the payments made out to the factors involved in its production, namely land, labor, capital and enterprise. There are two more elements to consider when we look at the price of a good at the market price. They are: (1) indirect taxes which add to the price of a good, and (2) subsidies which lower the price of the good. The market price of a good is always higher than the value of factors of production if indirect taxes are added to it. The market price is lower if subsidies are given for the good. Since, the government usually levies indirect taxes on more goods and subsidies fewer goods, the national product at market price is generally higher than the national income at factor cost. The mathematical relationship between factor cost and market price can be given as:

GDP or GNP at market prices = GDP or GNP at factor cost + indirect taxes - subsidies

12.6.4 Aggregate income measures

Gross domestic product (GDP) at market price: GDP at market price is the most comprehensive measure of aggregate income. It is calculated after deducting net exports from total final expenditure. Total final expenditure is C+I+G+X,

where C is the total consumption expenditure on goods and services, I is the total value of the output of capital goods or gross investment, G is the total government expenditure and X is the total exports. If total imports are M, GDP at market price is C+I+G+(X-M). (X-M) is called net exports or balance of trade.

GDP at factor cost: GDP at factor cost differs from GDP at market price on account of the absence of indirect taxes and subsidies. So, the GDP at market price is adjusted by subtracting indirect taxes on production or sale and adding subsidies on the production or sale of products. Mathematically, it can be represented as:

GDP at factor cost = GDP at market price + Subsidies – indirect taxes

Example: GDP of India

The GDP of India in 2020 was USD 2,708.77 Billion. The GDP of India increased from USD 93.93 billion in 2001 to USD 2,708.77 billion US dollars in 2020 growing at an average annual rate of 9.73%.

The GDP annual growth rate was 5.6% in Jan, 2019. By Jan, 2020 the growth rate declined to 3.3%. By July 2020 the growth rate was negative 24.4% which recovered by Jan, 2021 to 0.5%. By July 2021, the Indian economy registered a phenomenal growth of 20.1% in Q2 of 2021. This was slightly higher than the forecasted growth rate.

This growth was attributed to a surge in the construction sector (68.3%), followed by increases in manufacturing, trade, hotels, transport and communication, mining, utilities sectors' growth.

On the consumption side, private expenditure increased by 19.3%, investment 55.3%, exports increased by 39.1% and imports by 60.2%. However, public expenditure reduced by 4.8%.

Source: https://tradingeconomics.com/india/gdp-growth-annual

Gross national product (GNP) at factor cost: GNP at factor cost is the total income received by residents for their contributions as factors of production anywhere in the world. To arrive at GNP from GDP, sum up wages, interest, profits and dividends received by Indian citizens from the assets they own overseas and subtract wages, interests, profits and dividends received by foreigners on assets they own in India. This difference is called net factor income from abroad (NFIA). Mathematically, it can be expressed as:

GNP at factor cost = GDP at factor cost $\pm$ Net factor income from abroad.

Net national product (NNP) at factor cost: NNP at factor cost is calculated by subtracting depreciation from GNP at factor cost. Therefore, NNP is the net flow of output produced in an economy after adjusting the GNP by the amount necessary to keep the existing capital intact. Therefore, NNP measures the maximum amount that can be consumed by private and government sectors without changing the capital stock.

NNP at factor cost = GNP at factor cost – depreciation

12.6.5 Nominal and Real GDP

In order to assess the growth of an economy over a period of time, GDP is normally used. The pace of growth is studied to identify trends in economic growth. But the rupee value of products is determined by their prices. Therefore, if there is any increase in the prices of products, the GDP grows as well, but actually there is no real increase in the physical production level in the economy. Hence, GDP is an unreliable measure of the changes in production over time, if there is inflation. Therefore, to make it reflect actual growth, GDP has to be adjusted for inflation.

Real GDP is the measure of products produced during a particular period corrected for inflation. To calculate real GDP, assume that prices remain constant at their base year values, although actual prices are rising.

12.6.6 The GDP deflator

From the above discussion, it is clear that nominal GDP grows faster than real GDP if there is inflation. Therefore, the difference between the real GDP and nominal GDP indicates the rate of inflation.

The GDP deflator can be arrived at by dividing the nominal GDP by the real GDP.

GDP deflator = Nominal GDP / Real GDP

The percentage change in the GDP deflator from one year to the next is a measure of inflation rate during that particular period.

12.6.7 Personal income

National income does not provide the total income of individuals. This is because the entire income that accrues to the factors of production is not paid out in full to the owners of factors of production - some amount is paid to the government in the form of corporate taxes, and some is retained by firms in the form of retained profits. Further, the total income of individuals includes transfer payments such as gifts, pensions and relief payments, which are not payments for factors used in production.

Therefore, personal income = NNP at factor cost – corporate taxes – undistributed profits + transfer payments

12.6.8 Disposable income

This is the total income that remains in the hands of individuals which they are free to spend. It is calculated after deducting personal taxes from personal income.

Disposable income = personal income – personal taxes

Exercises

A. If the GNP at market prices is ₹ 8,500 crore, subsidies are ₹ 650 crore, indirect taxes are ₹ 1,100 crore, and depreciation is ₹ 750 crore, what will be the national income of the country?

   a. ₹ 7,300 crore

   b. ₹ 8,800 crore

c. ₹ 11,000 crore

d. ₹ 9,500 crore

B. Assume that GDP at market prices is ₹ 7200 crore, factor income received from abroad is ₹ 1800 crore, factor income paid abroad is ₹ 1440 crore, and subsidies are ₹ 570 crore. Determine the GNP at market price.

a. ₹ 7560 crores

b. ₹ 9570 crores

c. ₹ 9210 crores

d. ₹ 10140 crores

C. Assume that the national income of a country is ₹ 10,000 crore, subsidies are ₹ 500 crore, indirect taxes are ₹ 1000 crore, retained earnings are ₹ 400 crore, corporate taxes are ₹ 750 crore, personal taxes are ₹ 800 crore.. Determine the personal disposable income in the country.

a. ₹ 12150 crore

b. ₹ 11650 crore

c. ₹ 7550 crore

d. ₹ 8050 crore

D. The factor income earned by domestic residents abroad is 500 and the factor income earned by foreigners in the country is 600. If the GNP of the country is 6000, the GDP of the country is

a. 6100

b. 5900

c. 6000

d. 6200

Check Your Progress - 3

10. Which of the following equation regarding GDP or GNP at market prices is true?

a. GDP or GNP at market prices = GDP or GNP at factor cost less indirect taxes, less subsidies

b. GDP or GNP at market prices = GDP or GNP at factor cost plus indirect taxes, less subsidies

c. GDP or GNP at market prices = GDP or GNP at factor cost less indirect taxes, plus subsidies

d. GDP or GNP at market prices = GDP or GNP at factor cost plus indirect taxes, plus subsidies

11. Which of the following statements regarding national income is false?
    a. Housework done by housewives is not included in the national income
    b. In agricultural sector, the value of the commodities consumed by the farmers is included in the national income
    c. Most of the underground activities in the economy are unreported and are not included in national income accounts
    d. National income fails to take into account the human cost of employment in terms of physical and mental strain
12. Which of the following equations is the correct mathematical formula to find GDP at factor cost?
    a. GDP at factor cost = GDP at market price + Indirect taxes-Subsidies
    b. GDP at factor cost = GDP at market price + Subsidies + indirect taxes
    c. GDP at factor cost = GDP at market price + Subsidies – indirect taxes
    d. GDP at factor cost = GDP at market price + Subsidies + Net Exports
13. Which of the following best defines real gross domestic product?
    a. The value of all final goods and services produced in the economy during a particular time period and measured in current prices
    b. The market value of all final goods and services produced in the economy during a given time period, with prices held constant relative to some base period
    c. The current value of all new and used goods produced and sold in the economy during a particular time period
    d. The value of all goods produced for final consumption by households in a particular year and measured in constant prices

12.7 Difficulties in Measuring National Income

There are some conceptual and statistical problems that crop up in the measurement of national income. These can be considered as the limitations of national income statistics, and are listed below:

Non market production: National income does not consider household production because such production does not involve market transactions. The household services of millions of people are excluded from the national income accounts.

Imputed values: Goods and services produced and consumed by the individuals for themselves are not included in the national income. This may result in overestimation or underestimation of the national income. This type of problem arises to a large extent in the agriculture sector.

Activity 12.1

The following information is taken from the national income accounts of a hypothetical economy:

Particulars	Million units of Currency (MUC)
GNP at factor prices	142,500
Indirect taxes	21,000
NDP at market prices	150,700
NNP at market prices	150,000
GNP at market prices	160,500
Personal income taxes	15,000
Corporate profit taxes	9,750
Retained earnings	45,000
Subsidies	3,000
Consumption	50,000
Transfer payments	5,000

You are required to compute:

a. GDP at factor cost
b. National income (NNP at factor cost)
c. Personal income
d. Personal disposable income
e. Personal saving

Answer:

The underground economy: Transactions, which involve illegal activities are ignored and not included in the national income accounts.

Side effects and Economic "bads": National income accounts do not consider the implications of some "productive" activities and natural events on an economy. Since national income accounts ignore these negative aspects of growth and development, they tend to overstate the real national output. For example, rebuilding after an earthquake would add to the national income. The negative effect of pollutants released as a side-effect of productive activity is not subtracted from the national income although they are an economic "bad".

Leisure and human cost: National income excludes leisure, and also fails to take into account the human cost of employment in terms of physical and mental strain.

Double counting: The national income is exaggerated when the output is counted twice. So, double counting should be avoided in such areas as:

- The contribution of intermediary firms to production
- Indirect taxes when measuring national expenditure
- Transfer income exclusion when adding up national income
- Stock inflation

Check Your Progress - 4

14. What is the usual effect of double counting on the national income?
    a. National income shows a lower figure
    b. National income gets exaggerated
    c. National income remains same, even in the case of double counting
    d. Double counting can never take place while calculating the national income

12.8 The Uses of National Income Statistics

As an instrument of economic planning and review: National income statistics are useful for the governments in decision making. The private sector can also use statistics to assess future prospects.

As a means of indicating changes in a country's standard of living: National income statistics are used to assess changes in the standard of living in a country.

To indicate changes in economic growth of a country: Though economic growth is expressed in terms of percentage change in GNP, the real national per capita income is a more accurate indicator of growth.

As a means of comparing the economic performance of different countries: National income statistics enables economists to compare the standard of living in two different countries.

Activity 12.2

"Double counting is one major problem that results in erroneous computation of national income aggregates." How do you think double counting can be avoided by taking only the value of final goods? Explain with suitable examples.

Answer:

Activity 12.3

The following information is drawn from the National Income Accounts of an economy. All figures are in million units of currency (MUC).

GDP at factor cost	40,000
Net income from abroad	2,800
Depreciation	2,000
Indirect taxes	6,000
Undistributed corporate profits	800
Corporate income taxes	1200
Transfer payments received by individuals	500
Personal income taxes	2,000

You are required to compute:

a. Net Domestic Product at factor cost (NDP_{fc})
b. Gross National Product at factor cost (GNP_{fc})
c. National Income (NNP_{fc})
d. Personal Income
e. Disposable Personal Income

Answer:

Activity 12.4

The following information is extracted from National Income Accounts of a country:

Particulars	MUC
NDP at market prices	35000
NNP at factor cost	29400
Personal consumption expenditure	15750
Corporate profits (Profit before tax)	5250
Transfer payments by the government	525
Subsidies	700
Depreciation	1050
Corporate profit tax	2450
Personal tax payments	2450
Indirect taxes	6650

You are required to compute:

a. GDP at factor cost

b. Net Factor Income from Abroad (NFIA)

c. Personal Income

d. Personal Savings

Answer:

Activity 12.5

"Poverty is a persistent problem in a developing economy even when it achieves its projected rate of growth in GDP." Comment.

Answer:

12.9 Summary

- National income statistics provide insights into the working of an economy and its performance. They also help our understanding of how output relates to income and how government taxes, subsidies, expenditures, etc. affect the economy.
- The circular flow of income can be seen in terms of a real flow and a money flow. The real flow is the flow of goods and services between households and business firms. The production process and the exchange of products generate income. The money flow covers the payment of cash made by the firms to the households for their services, and the payment of cash by these households which in turn purchase goods and services from the firms.
- Natural resources, human resources and capital resources are the factors that affect the size of the national income. There are three ways to measure national income: the product approach, the income approach and the expenditure approach.

12.10 Glossary

C+I, C+I+G, or ***C+I+G+X*** **schedule:** A schedule showing the planned or desired levels of aggregate demand for each level of GDP, or the graph on which this schedule is depicted. The schedule includes consumption (*C*), investment (*I*), government spending on goods and services (*G*), and net exports (*X*).

Circular flow: A stylized depiction of the circulation of spending in the economy and the corresponding flows of productive factors and output of produced goods and services.

Closed economy: A country which maintains minimal interaction with foreign countries can be termed as a closed economy.

Direct taxes: Those levied directly on individuals or firms, including taxes on income, labor earnings, and profits.

GDP deflator: The "price" of GDP, that is, the price index that measures the average price of the components in GDP relative to a base year.

Indirect taxes: Taxes levied on a producer which the producer then passes on to the consumer as part of the price of a good.

Inventories: Stocks of goods in the hands of producers.

12.11 Self-Assessment Test

1. Describe the various uses of national income statistics.
2. Explain the process of circular flow of income and product in a three-sector model.
3. Distinguish between GDP and GNP. Also explain the limitations of national income accounting.
4. What are the different ways of estimating National Income? Do all of them give the same result? Explain why or why not?
5. Explain how personal income is different from national income. Also explain why transfer payments are not considered while measuring national income.

12.12 Suggested Reading/Reference Material

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12.13 Answers to Check Your Progress Questions

12.13.1 Model Answers to Check Your Progress Questions

Following are the model answers to the Check Your Progress questions given in the Unit

1. (a) National income

National income provides information on the economy as a whole. It helps in understanding the direction in which, the economy is heading. It shows how the government is managing its incomes like taxes and expenses like subsidies, development activities, etc.

2. (c) When exports exceed imports

Whenever a country has an unfavorable balance of trade i.e. where imports exceed exports, there will be a leakage of income which will be equal to the deficit in the foreign trade. But, if exports exceed imports, there will be a favorable balance of trade and the surplus (exports – imports) will increase the circular flow of income.

3. (c) Household and business sectors

The circular flow of money is explained through three models - two sector, three sector and four sector model. In the two sector model, there is no government and international trade relation, and the economy has only two sectors- the household and business.

4. (a) Real flow

The circular flow of income tries to explain the overall functioning of the economy. Goods and services are produced with the intention of selling them in the market. Since, all the goods cannot be produced by the household sector; they render their services to business firms and produce goods and services. Thus, a circular flow of goods and services exists between households and business firms, which is referred to as real flow.

5. (a) Outflow of income

When a country imports from another country, income flows out of the country. This is because the importing country has to pay for the product being imported. If the import is more, the outflow of income is also more, which leads to unfavorable balance of trade.

6. (c) Political stability

The quantity and quality of the factor endowment of a nation plays an important role in determining the size of the national income. National income is the final value of all the goods and services produced in a country during a particular period of time. It includes the natural resources, human resources, etc. in the country. While calculating national income we do not consider the political stability of the country.

7. (a) Income approach

In the income method, the value of the final output is expressed as the total income of factors used in the production process such as building or land, capital, households and organizations. In the expenditure method, the national income will be equal to sum of expenditures of all the sectors in the economy. In the product approach, all goods and services produced in the country comprise the final output and the total value of final output is the national income.

8. (a) The products of goods and services produced and their respective prices are added up to arrive at the national income

In the product approach, national income is calculated based on the total value of the final output of a country. All the goods and services produced in the country comprise the final output.

9. (c) National income is measured by aggregating the flow of total expenditures on the final goods and services in an economy

In the expenditure approach, the economy broadly consists of households, business firms, and government. So, national income is the total flow of the total expenditure on the final goods and services by all three sectors, i.e. household, business firms and government.

10. (b) GDP or GNP at market prices = GDP or GNP at factor cost plus indirect taxes, less subsidies

Market price of commodity is always higher than the value of factors of production when indirect taxes which add to the price, are more than the subsidies which tend to lower prices. Thus, national product at market price is always higher than the national income at factor cost.

11. (b) In agricultural sector, the value of the commodities consumed by the farmers is included in the national income

National income fails to account for household production because such production does not involve market transactions, therefore it does not take into account housework done by housewives. Goods and services produced and consumed by the individuals for themselves are not indicated in the national income. Therefore, the commodities produced and consumed by a farmer is not a part of national income estimates. Many transactions go unreported because they involve illegal activities and hence are not reported and not included in national income accounts. National income accounts do not consider the implications of some productive activities and the events of nature in an economy; hence no such effort is made to consider human cost.

12. (c) GDP at factor cost = GDP at market price + Subsidies – indirect taxes

GDP at factor price is adjusted by subtracting indirect taxes on production or sale and adding subsidies on the production or sales of the product.

13. (b) The market value of all final goods and services produced in the economy during a given time period, with prices held constant relative to some base period

Real GDP is a measure of the value of all goods and services produced in a country during a period of time, corrected for inflation.

14. (b) National income gets exaggerated

There is always a possibility of some outputs being counted twice, resulting in an exaggeration of national income. Therefore, care must be taken to avoid double counting in calculation of national income.

12.13.2 Model Answers to Exercises

Following are the model answers to the Exercises given in the unit.

A. (a) ₹ 7,300 crore

National Income = NNP at factor cost

GNP at market prices + subsidies – Indirect taxes – Depreciation

8500 + 650 – 1100 – 750 = 7300

B. (a) ₹ 7560 crores

GNP at market prices

= GDP at market prices + Factor income received from abroad – Factor income paid abroad

= 7200 + 1800 – 1440

= 7560

GNP at market prices = ₹ 7560 crores.

C. (d) ₹ 8050 crore

Personal Disposable Income

=National Income – Retained earnings – Corporate Taxes – Personal Taxes

= 10,000 – 400 – 750 – 800

= ₹ 8050 crore

D. (a) 6100

GDP at factor cost = GNP at factor cost - Net factor income form abroad

= 6000 – (500 – 600)

= 6000 + 100

= 6100

Unit 13

Consumption and Investment Function

Structure

13.1 Introduction

The previous unit discussed about different factors to determine national income, various approaches to measure national income and the problems associated with them.

Classical economists have proposed that the attainment of an economy's equilibrium depends on the achievement of full employment. However, this view was proved wrong when the Great Depression occurred in the 1930s. This prompted John Maynard Keynes to come out with his own views, challenging the Classical school of thought. Keynes suggested that an economy can achieve equilibrium without reaching full employment.

In this unit, we will discuss how an economy reaches equilibrium in three different situations – without government intervention, with government intervention and in the existence of international trade.

Let us remember at the outset that Keynesian theory's claim to fame is in being able to explain as to how an economic system could be helped to move out of persistent unemployment & recession. In his book 'The General Theory of Employment, Interest & Money' (referred to simply as the General Theory), Keynes, conceptualized the working of a typical modern capitalist economic system. With the help of this framework for analysis he explained as to how the economic system might continue to operate much below its potential of full employment level indefinitely. The thrust of his theory is the component-wise analysis of 'Aggregate Demand' (AD). He explained convincingly about shortfall

in aggregate demand as the cause of persistent unemployment. Consumption (C), & Investment (I) hitherto were the principal components of aggregate demand. Consumption (C) was attributed to the households, & Investment (I) to the firms. In a two-sector national income determination model, C+I is the Aggregate Demand (AD). At the same time, C+ Savings (S) would be the actual value of the Aggregate Supply (AS) or output. Further, for the two sides i.e. AD & AS to be equal under the equilibrium condition of income determination, S=I would need to be satisfied. This principle of equilibrium income determination has been explained in detail in this chapter, & the same has been extended to include all the sectors of a four-sector model later on.

13.2 Objectives

By the end of this unit, students should be able to:

- Analyze the concept of aggregate demand and aggregate supply
- Explain how to reach equilibrium in an economy without government intervention, with government intervention and in the case of an open economy
- Recognize the importance of investment multiplier in achieving equilibrium in an economy

13.3 Aggregate Supply and Aggregate Demand

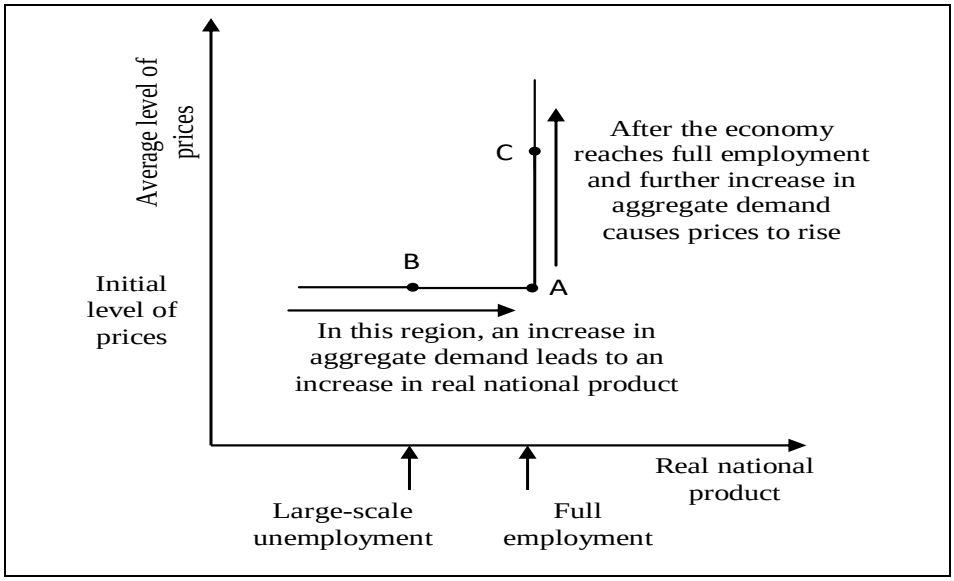
To explain the reasons for the Great Depression, Keynes came up with the concepts of aggregate demand, aggregate supply and effective demand. Effective demand is the aggregate demand created when the government intervenes in the economy to achieve full employment equilibrium.

13.3.1 The Keynesian aggregate supply function

Aggregate supply is the total quantity of all goods and services that businesses are willing to produce and supply in a given period at a particular price level. The Keynesian aggregate supply function is represented graphically in Figure 13.1. The supply function takes the shape of a backward 'L'. In the horizontal section 'BA', any change in aggregate demand changes the output level. Therefore, prices remain constant. But, in the vertical section, 'AC', full employment exists and an increase in the aggregate demand leads to an increase in product price. The Keynesian theory focuses on the segment 'BA', where equilibrium output may lie, but large scale of unemployment also exists. Point B indicates an economy that functions at below full employment level. Therefore, an increase in demand can be met by increasing the factors of production instead of hiking price. The horizontal line of supply function shows that an increase in production is possible without an increase in price of the product, till point A. Point 'A' indicates full employment level. After this point, an increase in the demand will push the price from point A towards C (leading to inflationary trends in the economy), since the economy reaches full employment level at point A.

13.3.2 Aggregate demand

Figure 13.1: The Keynesian Aggregate Supply Function



Source; ICFAI Research Center

Aggregate demand is the total or aggregate quantity of output bought willingly at a given price level, with other things remaining constant. Keynesian aggregate demand is based on four components – consumption, investment, government purchases and net exports.

Consumption is a significant component that determines the aggregate demand in an economy. Consumption is primarily determined by disposable income (DI). The consumption function explains the level of aggregate consumption desired at each level of personal disposable income. In the figure, point A represents the low-income group where consumption is more than the disposable income. Point B indicates a situation where consumption equals disposable income. This point can be considered the break-even point.

Savings is what is left over after consumption expenditure. Thus, savings can be denoted as:

Saving = disposable income – consumption.

Marginal propensity to consume: Marginal propensity to consume can be defined as the additional amount consumed as a fraction of additional disposable income. It can be denoted as:

Marginal propensity to consume = Change in consumption / Change in disposable income

If there is no increase in the consumption of the consumer despite an increase in income, the part of income that is increased is saved. The marginal propensity to save is given by

Marginal propensity to save = Change in saving / Change in disposable income

Exercises

A. A section of the economy has a disposable income of ₹ 250 billion and their consumption is ₹ 300 billion, resorting to borrowing from others. With the increase in the income levels, the disposable income increases to ₹ 500 billion. There is also an increase in the consumption, to ₹ 500 billion, an amount equal to the disposable income. At this level of disposable income and spending, find the marginal propensity to consume (MPC).

   a. 0.8
   b. 0.6
   c. 0.3
   d. 0.4

B. A section of the economy has a disposable income of ₹ 750 crores and their consumption is ₹ 700 crores. With the increase in the income levels, the disposable income increases to ₹ 1000 crores. At this level of disposable income, their consumption is ₹ 900 crores. At this level of disposable income and consumption, find the marginal propensity to save (MPS).

   a. 0.1
   b. 0.2
   c. 0.3
   d. 0.4

13.4 Simple Equilibrium without Government Intervention

A simple economy is devoid of government intervention or international trade. The difference between Gross National Product (GNP), Net National Product (NNP) and national income disappears. In this economy, the aggregate demand consists of only two components: consumption and investment.

The situation can be described with the help of a graph. In the figure, national product is shown on the horizontal axis instead of disposable income, because in the simple economy NP = DI. Equilibrium is reached at the point where aggregate demand equals the national product. The point where the 45^6 degree line cuts the aggregate demand indicates equilibrium in the economy. Any point to the right of this equilibrium indicates that the economy is over-producing. Any point to the left of the equilibrium point indicates that the market is unable to meet demand. If the output were initially greater than equilibrium, it would result in unsold products, and excess inventory in the economy, leading to a fall in production (contraction). If the output is initially less than equilibrium, demand for the product increases, where retailers and wholesalers increase their orders, resulting in increase in production. The equilibrium stage A (expansion) will be reached.

13.4.1 Equilibrium with large-scale unemployment

As per the Keynesian theory, full employment is not a precondition for reaching the equilibrium point. In the figure, equilibrium national product point is reached at A, though full employment national product is shown at point F.

13.4.2 Changes in investment demand - the multiplier:

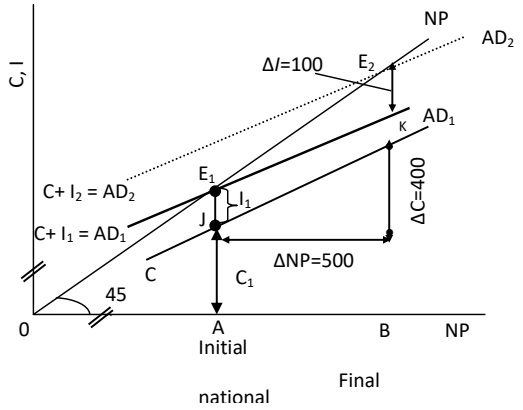
Keynes advocated that an economy could reach equilibrium without reaching full employment level through consumption and investment theory. In the theory, he explained how increasing or decreasing investment adapts to the business cycle (boom or recession). Aggregate demand consists of consumption and investment. Therefore, any change in factors like consumption and investment causes a shift in the aggregate demand curve above or below the 45° degree line. In the Figure 13.2, the aggregate demand increases from AD_1 to AD_2. A new equilibrium point is established where the new aggregate demand AD_2 cuts the 45° degree line at E_2. Thus, the equilibrium point shifts from E_1 to E_2. Here, the equilibrium national product increases more than the increase in investment demand.

Example: Multiplier Effect

Guam is a small island in the Asia Pacific region. The major inflow of income for the country is through the tourism sector. But, during the South East Asia crisis, there was a sudden decline in international arrivals, making many tourist destinations suffer. This resulted in severe recession in the country. Many organizations either closed down, reduced the number of working hours or number of employees.

Guam needs tourist discretionary income to strengthen its economy. Therefore, to turn around the economy, the Guam government provided various sops to the industry and made huge investments in the tourism sector. The increase in investment created more employment opportunities, moving the country towards full employment level. The higher level of employment resulted in increased income to the people of the island. The consequent rise in income level increased the rate of consumption, thus leading to increased production and increased national product.

Figure 13.2: The Multiplier



Source: ICFAI Research Center

Let us analyze the reasons. When there are expectations of future industrial growth, businesses increase investment. Investment in various areas creates more employment opportunities in the economy. This leads to an increase in wages and income and this development finally results in an increase in consumption. Thus, there is an increase in capital goods production due to increase in investment demand. Consumer goods also experience an increase in production, which is due to rising income and shift in the consumption function from J to K. Investment multiplier, or more simply, multiplier, is the relationship between the increase in national product and the increase in investment demand. It can be expressed as:

Multiplier = Change in national product / Change in investment demand.

Some important points to note: The investment multiplier when extended to the three & four sector models is more appropriately called the 'expenditure multiplier'. AD is also called as the 'planned expenditure' because each of the four components of the four-sector model could be related to the actual output or the value taken by AS. For the same reason, AD is also referred to by theory as 'ex-ante' meaning what is anticipated or pre-planned on the basis of what value the actual output AS could take. The value AS could actually take is denoted usually by the symbol 'Y'. The AS, being the basis for specifying the behaviour of the components of AD, is referred to as 'ex-post' meaning that which materializes after the phenomenon of output generation reaches its conclusions in a given period.

The formula of the investment multiplier could also be extended starting with the simple investment multiplier of the two-sector model: The AD, now, needs to be viewed as composed of two analytical components-1. The 'autonomous component', & 2. The 'induced component'. The autonomous component is the part of AD which takes values independent of the actual value of output Y. The induced component of AD is the one which can be expressed as a function of the actual output value Y. Working on this principle, the theoreticians arrive at the broad value of the 'expenditure multiplier'. The concept of the Keynesian multiplier takes a modified & broader meaning. It now signifies the ratio of change in equilibrium national income to the corresponding change in the autonomous part of AD. The autonomous components of AD might be Investment (I) by private firms, or it might be Government Expenditure (G). It might even be a change in Exports (X). The basic formula for equilibrium income determination takes this form: Y = Expenditure Multiplier * Autonomous AD. The expenditure multiplier might take the form: 1/(1-MPC). It might also take the form: 1/[1-MPC(1-t)] where MPC is the ratio of change in Consumption expenditure(C) to the change in Disposable Income(DI) causing this change in C; given the fact that DI= Y- Net Taxes(NT), DI=Y-tY when a uniform fractional rate of taxation say t is applicable to generate aggregate NT.

This explanation of equilibrium income is important for understanding Keynesian economics for an important reason: Keynes prescribed Government Expenditure

(G) of whatever kind possible as the panacea for overcoming recessions caused by over-production of output. In a recessionary phase, private investment by firms (I) is not adequate to raise output to the desired full employment level. G has to be raised by deliberate efforts of the government. The change in G then brings about a change in equilibrium ex-post output Y by a multiplier times. The value of the multiplier is always positive & greater than unity. This becomes clear when we remember that always MPC & t are positive proper fractions i.e. positive & less than unity. This fact explains the phrase 'digging holes & filling holes' attributed to Keynes as the prescription for fighting the Great Depression, meaning that it does not matter what the nature of G is, as long as it is enhancing the autonomous component of AD, which in turn through the expenditure multiplier, enhances equilibrium Y by a multiple times.

Exercise

C. As a result of an increase in the autonomous investment by ₹ 100 crores, national product increased to ₹ 1500 crores from ₹ 1000 crores. What is the value of the investment multiplier?
   a. 10
   b. 15
   c. 5
   d. 2.5

Alternative approach – savings and investment: In the simple Keynesian model, we discussed how consumption and investment can help the economy reach equilibrium. Here, we will discuss how savings and investment help the economy reach equilibrium. Savings acts as a leakage from the circular flow of spending as the desire to save results in a decrease in national product, whereas investments act as an injection into the circular spending stream. An increase in investment demand leads to an increase in national product. When savings equal investments, the economy reaches equilibrium point.

Check Your Progress - 1

1. Which of the following correctly represents the Investment multiplier?
   a. Change in national product/ change in investment demand
   b. Change in investment demand / change in national product
   c. Change in national product × change in investment demand
   d. Change in national product + change in investment demand/2
2. Which of the following is not a component of the three sector model of economy?
   a. Government
   b. International trade
   c. Firms
   d. Households

3. _____explains the relationship between national product and investment demand.
   a. Multiplier
   b. Consumption function
   c. Investment function
   d. Saving function
4. If Y represents income, C represents consumption, and S is for saving, how can a two sector model with saving be represented?
   a. S = Y-C
   b. S = C-Y
   c. Y = S - C
   d. S = Y + C

13.5 Economy with Government Intervention – Three Sector Model

Keynes expressed the opinion that government intervention can help reduce the level of unemployment through fiscal measures. Government expenditure for goods and services forms a component of aggregate demand.

Aggregate Demand (AD) = Consumption expenditure (C) + Investment demand (I) + Government purchase of goods and services (G)

AD = C + I + G

An increase in aggregate demand will have a multiplier effect on the economy. Government spending on productive purposes will create employment opportunities in the economy. This, in turn, will increase disposable income and consumption in the economy.

Exhibit 13.1 highlights the importance of government spending, especially in an economic downturn situation.

Exhibit 13.1: Spending by Indian Government to spur Growth in the Post-Pandemic Economic Recovery

Economic activity in India is on a rebound with GDP growth rate at 20.1% in Q2 of 2021. Bank credit has also clocked an uptick. IT firms hiring season has started. The employment market is projected for a strong recovery by December, 2021.

While this is the positive side of the story, there are several challenges too. A Assocham-Crisil joint study estimated that NPAs of banks are likely to incarese beyond ₹ 10 lakh crore mark by March, 2022. This may play a dampener to further extension of credit by banks. Another area of concern is the slippages in retail, micro, small and medium enterprise loans that were impacted by the Pandemic. A change in US monetary policy may cause liquidity rushing out of the market.

Contd….

In this scenario, an increase in Government expenditure and spending will pump in the required liquidity into the market. It will act as stimulus for growth. The budgeted expenditure on the capital account was ₹ 5.54 lakh crore for 2021-22. The capital spending as per budget estimates was 23.2.% during April to July, 2021 compared to 27.1% in the last fiscal. Government spending will be critical for industrial growth and demand revival.

Some experts opine that providing large economic stimulus is the answer. To do so, government can borrow and spend, to raise the investment in the economy. Such a move would generate orders for all kinds of businesses and raise the overall momentum of growth. Experts say that as long as the growth triggered by borrowing is higher the interest rate, economy will benefit.

Source: https://economictimes.indiatimes.com/opinion/et-editorial/spend-goi-spend-lest-recovery-falter/articleshow/86208283.cms, September, 2021

13.5.1 Recessionary situation

The shortfall of aggregate demand below the 45^6 degree line is the recessionary gap. With an increase in spending, the government can shift the aggregate demand function to achieve full employment. Increase in government spending equal to the recessionary gap will increase output, eliminating the output gap, and restoring full employment in the economy. During recession, government spending should be increased without increasing taxes. Deficit spending is the best method to stimulate aggregate demand and reduce unemployment.

13.5.2 Inflationary situation

Inflationary gap occurs when aggregate demand is above the 45^6 degree line at the full employment quantity of the national product. Government will reduce spending to bring down aggregate demand. The government can also resort to fiscal policies like imposing higher taxes and reducing government expenditure to reduce the inflationary gap. Taxes reduce purchasing power by reducing disposable income. Taxation can be in two forms – lump sum tax and proportional tax.

Check Your Progress - 2

5. What measures can a government take to reduce unemployment levels?
   a. Fiscal measures
   b. Monetary measures
   c. Increase the imports
   d. Decrease government spending
6. In a recessionary situation, to reach full employment, government has to ___.
   a. Decrease spending
   b. Increase spending
   c. Adopt a zero spending policy
   d. Stop development activities for a short period of time

7. In a recessionary situation, to experience the full impact of the multiplier and to fund the additional government spending, the government _____.
   a. Should increase the taxes
   b. Should not increase taxes
   c. Should adopt a zero tax policy
   d. Either (b) or (c)

13.6 Equilibrium in an Economy with Government Intervention

With the government's involvement in a three-sector model, the economy reaches equilibrium when leakages are equal to injections. Thus, the economy will be in equilibrium when:

$$Y = C + I + G,$$

Where, Y denotes equilibrium level of income

C denotes consumption demand

I denotes investment demand, and

G denotes government expenditure

13.7 Four Sector Model

Net exports and net imports determine the equilibrium in an open economy. If net exports exceed imports, it leads to an increase in the domestic income of the economy. If net imports are more than net exports, it adversely affects the domestic economy. An increase in imports or a decrease in exports influences a country's income. In a four-sector model, equilibrium is reached when all the factors are equalized together i.e.

$$Y = C+ I + G + (X-M)$$

Where X denotes exports and M denotes imports.

Activity 13.1

Assume that the Indian economy is undergoing recession. To revive the economy, the Government intervened with fiscal measures and promoted investment in certain key sectors. With the help of the multiplier effect concept, explain how government investment will help the economy come out of recession.

Answer:

Exercises

D. Assume that the equilibrium level of income in an economy is ₹ 800, the consumption in the economy is ₹ 350, government expenses are ₹ 110, exports are ₹ 90 and imports are ₹ 65. Determine the investment in the economy? (All figures are in crores)

   a. ₹ 315 crore

   b. ₹ 415 crore

   c. ₹ 250 crore

   d. ₹ 350 crore

E. In an economy, the GDP at market price is ₹ 12,000 crore, the total consumption expenditure on goods and services is ₹ 4500 crore, the gross investment is ₹ 3500 crore, and the government expenditure is ₹ 3000 crore. If exports are ₹ 1500 crore, what would be the imports in the economy?

   a. ₹ 1500 crore

   b. ₹ 2500 crore

   c. ₹ 3500 crore

   d. ₹ 500 crore

Check Your Progress - 3

8. Which of the following equations represents the aggregate demand in an economy?

   a. Y=C+I+G-X-M

   b. Y=C+I+G+ (X-M)

   c. Y=C-I+G+ (X-M)

   d. Y=C+I+G+ X+M

13.8 Summary

- Keynes stated that economy can achieve equilibrium without reaching full employment. He has explained the concepts of aggregate demand, aggregate supply and effective demand.
- Aggregate supply is the total quantity of all goods and services produced in an economy in a given period and supplied at every price level.
- Aggregate demand is the total or aggregate quantity of output bought willingly at a given price level, while other things remain constant.
- Keynesian aggregate demand is based on four components – consumption, investment, government purchases and net exports.
- In a simple economy, equilibrium is reached when aggregate demand equals the national product.

- Government intervention can help reduce the level of unemployment through fiscal measures.
- In a three-sector model, the economy reaches equilibrium when leakages are equal to injections.
- In a four-sector model, equilibrium is reached when all the factors like consumption, investment, government expenditure and net exports and net imports are equalized.

13.9 Glossary

Aggregate demand (*AD*) curve: The curve showing the relationship between the quantity of goods and services that people are willing to buy and the aggregate price level, other things equal.

Consumption function: A schedule relating total consumption to personal disposable income (*DI*).

Deficit spending: Government expenditures on goods and services and transfer payments in excess of its receipts from taxation and other revenue sources. The difference must be financed by borrowing from the public.

Investment demand (or **Investment demand curve):** The schedule showing the relationship between the level of investment and the cost of capital (or, more specifically, the real interest rate); also, the graph of that relationship.

Marginal propensity to consume: The part of the last dollar of disposable income that would be spent on additional consumption.

Marginal Propensity to save (*MPS*): That fraction of an additional dollar of disposable income that is saved.

Multiplier: A term in macroeconomics denoting the change in an induced variable (such as GDP or money supply)

Open Economy: An open economy is an economy which interacts with other nations to exchange goods, services, and investments.

13.10 Self-Assessment Test

1. Describe Keynesian aggregate supply and aggregate demand with the help of a diagram.
2. Define the multiplier effect.

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13.12 Answers to Check Your Progress Questions

13.12.1 Model Answers to Check Your Progress Questions

Following are the model answers to the Check Your Progress questions given in the Unit

1. (a) Change in national product/ change in investment demand

While explaining the concept of multiplier in the consumption and investment theory, Keynes said that investment multiplier or simply multiplier is the relationship between increase in national product and the increase in investment demand.

2. (b) Internacional trade

International trade is a component of the four sector model which represents a globalized business scenario. The three sector model represents an economy where government plays a key role in mobilizing resources.

3. (a) Multiplier

Investment multiplier is the relationship between the increase in national product and the increase in investment demand. Mathematically, it can be expressed as:

Multiplier = Change in national product / Change in investment demand.

4. (a) S = Y-C

In the two sector model, there is no government and international trade, and the economy has only two sectors- household and business. It is assumed that households would not spend their total earnings on consumer goods and services. The remaining income that is not spent is called savings. Therefore, savings can be expressed mathematically as S = Y – C.

5. (a) Fiscal measures

Keynes tried to solve the problem of a free economy through government intervention. According to Keynes, when the economy has high unemployment levels, the government can take fiscal measures to reduce unemployment. For example, the government can increase aggregate demand during a recession by increasing its spending and generating employment opportunities by building infrastructure like building roads, schools and maintaining parks.

6. (b) Increase spending

To reach full employment, government has to increase spending by the amount of the recessionary gap. With this increased spending, government can shift the aggregate demand function. Increase in government spending equal to the recessionary gap will increase the output by an even larger amount. This increase would eliminate the output gap and restore full employment in the economy.

7. (b) Should not increase taxes

If taxes are increased, the purchasing power of the people will be reduced and consumption will suffer. Thus, during recession, government spending should increase without an increase in taxes.

8. (b) Y=C+I+G+ (X-M)

Aggregate demand includes consumption, investment, government expenditure and net income generated from international trade (exports-imports).

13.12.2 Model Answers to Exercises

Following are the model answers to the Exercises given in the unit.

A. (a) 0.8

MPC can be calculated by using the formula, Change in consumption / Change in disposable income.

Change in consumption = 500-300=200

Change in disposable income = 500-250=250

Therefore, 200/250 = 0.8

B. (b) 0.2

MPS can be calculated by using the formula, Change in saving / Change in disposable income.

Change in saving= 100-50=50

Change in disposable income = 1000-750=250

Therefore, MPS = 50/250 = 0.2

C. (c) 5

Multiplier = Change in national product/ change in investment demand. Here the national product increases by ₹ 500 crore when investment demand increases by Rs100 crore. Therefore, 500/100 = 5

D. (a) ₹ 315 crore

The equilibrium level (Y) is denoted by formula

Y= C + I +G + (X – M)

Y = 800

Consumption(C) = 350

Government Expenses (G) = 110

Exports (X) = 90

Imports (M) = 65

Substituting the values in the formula:

800 = 350 +I + 110 + (90 – 65)

800 = 485 +I

I = 800 – 485

I = 315

E. (d) ₹ 500 crore

GDP at market prices = ₹ 12,000 crore

Consumption expenditure on goods and services(C) = ₹ 4500 crore

Gross investment (I) = ₹ 3500 crore

Government expenditure (G) = is ₹ 3000 crore.

Exports (X) = ₹ 1500 crore

GDP at market prices = C + I +G + (X- M)

12,000 = 4500 + 3500 + 3000 + (1500 – M)

12,000 = 12,500 – M

M = 12,500 – 12,000

Imports = 500

Unit 14

Classical and Keynesian Economics

Structure

14.1 Introduction

The previous unit explained how an economy reaches equilibrium when there was no government intervention, there was government intervention and in the case of an open economy.

The present unit is about the opinions of different schools of economics. People hold different views or opinions as to whether the government should play an active role in managing an economy, or whether it should confine itself to providing the institutional framework, and let self-correcting forces operate to bring balance in the economy. The classical economists advocated a minimal role for the government, confined to ensuring "rule of law" and the overall institutional framework that went with it, e.g. ensuring that financial and trading agreements between them would be honored, so that business could be conducted smoothly. The opinions people hold reflect the perspectives of different schools of economics.

In this unit, we will discuss different schools of economic thought – the Classical approach, the Keynesian approach, the Monetarist approach, the Neoclassical approach, and the Supply-side approach.

14.2 Objectives

By the end of this unit, students should be able to:

- Compare and contrast different schools of economic thought
- Analyze the relevance of economic theories in specific context

14.3 The Classical Tradition

It is important to remember, right in the beginning, that the classical approach to the working of an economic system was based on specific assumptions about three kinds of markets-the goods markets, the money markets, & the labour markets. These assumptions & the interactions between these three markets would ensure that there would be no unemployment in the long-run.

- So, according to this school, temporary imbalances or mismatches between demand & supply conditions are but short-run phenomena.
- The working of these three kinds of free markets ensures equilibrating forces of excess demand or excess supply to lead the economic system to a state of full employment.
- Keynes' approach was created to fill in a gap in this approach which was unable to explain the persistent recessionary conditions of the Great Depression. What was wished away by the classical approach as a short-run problem seemed to go on for ever. This incited the famous retort from Keynes, "In the long-run we are all dead", implying thereby that the classical theory of macroeconomics ignored the nuances of short-run dynamics to a fault.
- Keynes' approach as explained in his book, 'The General Theory of Employment, Interest, & Money' published in 1936, must be seen as an attempt to bridge this gap. He chose to enquire into the nature of aggregate demand & its components.
- Therefore, Keynes' approach is an emphasis on short-run analysis. It goes a step further, & prescribes ways to overcome persistent recession & unemployment. It relies on a clear distinction between short-run & the long-run conditions. The short-run conditions overlap on a specific long-run state.
- The subsequent theories of macroeconomics should be seen as efforts to reconcile the classical & Keynesian approaches.

The different schools of thought beginning with the Keynesian revolution referred to above are, therefore, complement the theoretical foundations most creditably laid by the scholars of the classical school. Global economic conditions in the aftermath of the Second World War prompted governments everywhere to adopt Keynesian prescriptions for economic revival. The developed nations of western Europe & north America sought the government sector for initiating autonomous expenditures which would kickstart war-ravaged national economies. The developing nations which had newly declared their independence from their colonial yolk looked to Keynesian precepts for a planned economic development. The government sectors in these countries of Asia & Africa were expected to provide a leadership in making investments in infrastructure & heavy capital industries in the absence of a vibrant private sector. As this trend took over in the

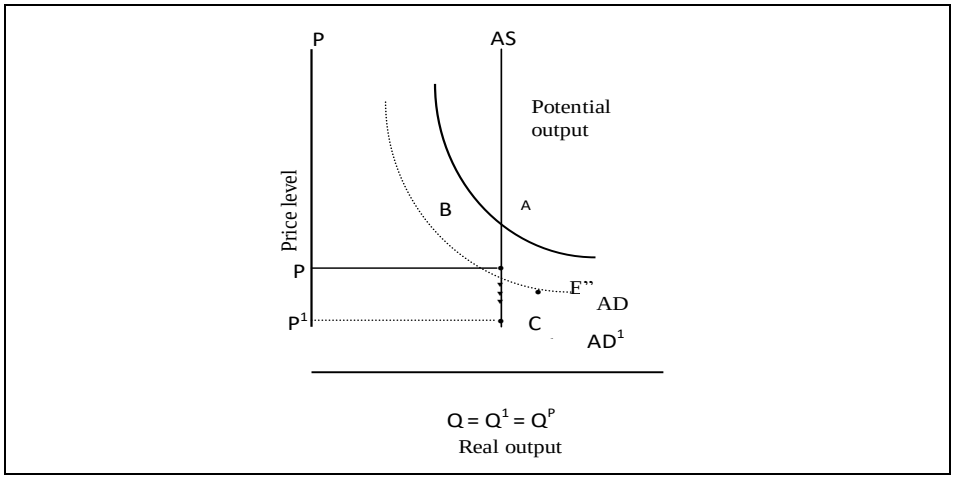
1950s & 1960s, new developments in international economic relations started attracting popular attention. 1970s saw global crude oil supply crisis along with an international currency crisis. The long-run once again gained currency in popular macroeconomic discourse. Attention once again shifted from demand-side as in Keynesian literature to supply-side in the new classical school of macroeconomic thought. The challenges of expanding the production-possibilities frontier started attracting policy attention as real income growth-rates stalled. The currency issues in the aftermath of the collapse of the Bretton-Woods system caused other macroeconomic ideas to enter the fray in the 1970s. Consequent to US Dollar leaving a gold-parity arrangement agreed to by advanced market economies at the time of creation of the International Monetary Fund (IMF), each nation independently decided its currency exchange system. Till this phase, most currencies were valued against the US Dollar which in turn was pegged to gold. These changes brought the Monetarist school of thought in macroeconomics to the forefront. Milton Friedman introduced the idea that money supply was to be a key policy tool in determining the growth path of the national economy of any market economy. Most importantly, a plethora of new macroeconomic analytical tools gained currency in theoretical discourse. The Phillips curve, for example, sought to explain the trade-off between control of inflation-rate & that of unemployment rate in short-run analysis with deep policy implications. The discourse on classical & Keynesian schools of macroeconomics of this chapter, hopefully, prepares the ground for understanding the nuances of these subsequent developments in the subject.

14.3.1 Say's Law of markets

J.B. Say, a prominent classical economist, was of the opinion that overproduction would never arise. Say's law is simply stated as follows: "Supply creates its own demand". Classical economists are of the view that economy operates at full employment or at its potential output.

The classical approach and Say's law can be described with the help of a graph as in Figure 14.1. The aggregate demand curve is downward sloping and the aggregate supply curve is vertical. If the aggregate demand falls as a result of tight money, falling exports or because of other forces, then the AD curve shifts leftward to AD_1. At the original price level P, the total spending falls to point B, and a small fall in the output is seen at this point. The shift in demand is followed by changes in wages and prices and the price level falls from P to P_1. As a result of the fall in prices, the total output returns to its full capacity and at point C there is full employment. The classical approach therefore reaches two conclusions - Unemployment and underutilization of capacity in the economy are temporary and the economy will not undergo any depression or recession, and qualified workers will find jobs at the prevailing market wage.

Figure 14.1: Say's Law of Markets

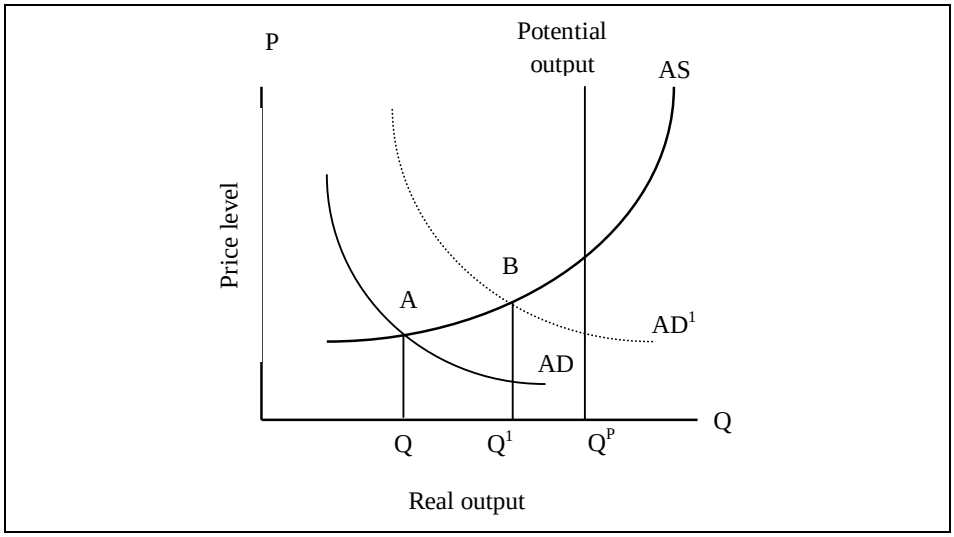


Source: ICFA Research Center

14.4 The Keynesian Revolution

The limitations of the classical approach (Classical economists could not explain through their model, the prolonged Great Depression of the 1930s) led to the development of a new approach by Keynes. Keynes presented the concept of aggregate supply and aggregate demand. Keynes said that prices and wages are downward inflexible and the AS curve is flat or upward-sloping. Keynes' approach is explained through a graphical representation as in Figure 14.2, where the aggregate demand curve is combined with the upward sloping aggregate supply curve. If the intersection of the AD and AS curves take place far to the left (shown as point A), it can be inferred that the equilibrium output is much below the potential output.

Figure 14.2: Concept of Aggregate Demand and Output



Source: ICFA Research Center

Keynes was of the view that the inflexibility in the wages and prices impairs the restoration of full employment and production at full capacity. According to his analysis, optimum output and employment can be achieved through the efficient implementation of monetary and fiscal policies by the government. In a recession, an increase in government expenditure is required to raise aggregate demand from AD to AD_1. The increase in aggregate demand results in an increase in output from Q to Q_1 and the gap between the actual GDP and the potential GDP narrows down. It is this consciously created aggregate demand that can result in full employment equilibrium.

Activity 14.1

The different schools of thoughts on macroeconomics have inspired different opinions relating to the role of the government in managing the economy, determination of aggregate demand, role of price flexibility and rationality in decision making. Discuss Keynesian approach in contrast to classical approach.

Answer:

Check Your Progress - 1

1. What is the shape of Aggregate Supply (AS) curve as per the classical theory of economics?
   a. Vertical
   b. Horizontal
   c. Down-ward sloping
   d. Upward rising
2. Which of the following is true, according to Keynes?
   a. Full employment can not be attained
   b. Aggregate Supply curve is downward sloping
   c. In a recession, a decrease in government expenditure is required to raise aggregate demand
   d. Prices and wages are downward inflexible
3. According to Keynesian economics, what is the shape of the aggregate supply curve?
   a. Horizontal
   b. Vertical
   c. Flat or Upward-sloping
   d. Envelope-shaped

14.5 The Monetarist Approach

Monetarists are of the view that money supply determines the short-run movements in nominal GDP and the long-run movements in prices. The major difference between the monetarists and Keynesian economists is that Keynesian economists believe that more than one force affects aggregate demand, whereas monetarists believe that money supply is the most important factor that determines output and price movements. Velocity of money and the quantity theory of money are the two concepts that are related to monetarist theory.

14.5.1 The velocity of money

Velocity of money measures the speed at which money circulates in the economy. Velocity of money is high when money turns over rapidly and velocity of circulation is low when the quantity of money is large in relation to the flow of expenditure. Income velocity of money refers to the ratio of nominal GDP to the stock of money value. Velocity measures the rate of stock of money turnover in relation to the total income or output of a nation. Mathematically it can be expressed as:

$$V = \frac{GDP}{M} = \frac{p_1q_1 + p_2q_2 + \cdots\cdots}{M} = \frac{PQ}{M}$$

Where 'P' stands for average price level.

'Q' stands for real GDP,

'p' stands for price of goods,

'q' stands for quantity of goods

'V' can be defined as nominal GDP per annum divided by money stock.

14.5.2 The Quantity theory of prices

The quantity theory of prices provides insights into the variations in the overall price level. It is based on the assumption that the velocity of money is relatively stable and predictable. Classical economists used the velocity of money to explain changes in price levels. Mathematically, it can be expressed as:

$$P = \frac{MV}{Q} = \left(\frac{V}{Q}\right)M = kM$$

Classical economists believe that if transaction patterns are stable, k remains constant. If k is constant, the price level moves proportionately with money supply. Stability in the money supply leads to stability in prices, while increase in money supply causes rise in prices. The quantity theory of money and prices posits that prices move proportionately with money supply.

Exercises

A. Assume that the equilibrium level of an economy (Y) is ₹ 800 crore and the money supply (M_S) is ₹ 160 crore. Determine the velocity of money in the economy?

   a. 5
   b. 4
   c. 6
   d. 8

B. Assume that the velocity of money in an economy is 4.5 and the money supply (M_S) is ₹ 220 crore. Determine the equilibrium level of output in the economy.

   a. ₹ 990 crore
   b. ₹ 1100 crore
   c. ₹ 850 crore
   d. ₹ 880 crore

C. The demand for money in a hypothetical economy is $(M/P)^d = 0.4Y$. The velocity of money is

   a. 2.5
   b. 0.4
   c. 4.2
   d. 0.6

14.5.3 Modern monetarism

Milton Friedman, who stressed the importance of monetary policy in bringing macroeconomic stability, developed modern monetary economics. According to Friedman's theory, growth of money is the factor that influences nominal GDP in the short run and prices in the long run. This analysis is based on the quantity theory of money and prices, and is based on analysis of the trends in velocity of money. According to monetarists, the velocity of money is stable. If wage and price flexibility is assumed, the monetarists state that changes in money supply do not affect the real output greatly, instead they have a significant impact on P, the general price level.

14.5.4 Comparison of Monetarist and Keynesian approaches

Monetarists and Keynesian economists disagree over the forces that operate on aggregate demand. Monetarists believe that aggregate demand is affected by money supply and the impact of money on aggregate demand is stable. They also advocated the need for fiscal policy backed by monetary changes to have an impact on output and prices. Keynesians believe that it is not only money but also fiscal policy and net exports that have on impact on aggregate demand, output and prices.

The other area where both of them disagree is aggregate supply. Keynes posited the downward stickiness of prices and wages. However, monetarists are of the view that the inflexibility of prices and wages in the short run was exaggerated by Keynes. Monetarists are of the opinion that the aggregate supply curve is much steeper than what the Keynesians would allow. As a result of this difference, there are different views on the short-run impact of changes in aggregate demand.

Keynesian economists opine that output changes significantly if there is a change in nominal demand. On the other hand, monetarists believe that a change in nominal demand will have an impact on prices alone, but not on quantities. In the short run, the change in output will have a no effect on prices.

It is clear from this explanation that the different schools of macroeconomics complement each other rather than compete with each. The reason for this is that evolution of macroeconomic theories has been happening contextually & contemporaneous with historical events in the world. As societies changed from agrarian to industrial settlements, it became important to establish free markets. This became the basis for most of the classical school's arguments. The Great Depression of 1930s became the inspiration for the Keynesian revolution in macroeconomic theory. The global recession & oil shocks of 1970s led to revival of interest in supply-side in macroeconomics. Monetary policy debates in the wake of exchange rate changes & the abolition of the Bretton-Woods system lead to the popularization of the Monetarist school in the 1970s.

Nevertheless, the keen student of macroeconomics would do well to remember the following points with regard to the schools of macroeconomics: The three markets which were at the centre of the classical theory of macroeconomics were goods, labour, & money markets. Wage-price flexibility involving the interconnections between goods & labour markets is central to these arguments. Real wages tended to be at the sustenance level because higher levels led to greater population increases, & lower levels led to scarcity of labour due to migration etc. Malthus' theory of population supported this view. Quantity theory of money is another key assumption of the classical school. This created the idea that money supply merely influenced the prices proportionately. This led to the phrase often viz. 'money as a veil' for the real economy. Money supply would not influence the real output at all. Thirdly, Savings(S) & Investments (I) were balanced by changes in interest rates. S & I being real sector phenomena, it was averred that the real sector determines the monetary variable of interest rate. So, in an interesting way, the money markets determined prices in goods markets while the goods markets determined cost of borrowing in the monetary sector. The subsequent schools of macroeconomic thought could be seen as reactions to one or more of these postulates of the classical school. For example, the presence of labour unions in modern times have altered the dynamics of wage-price flexibility with real wages fixed at a higher level than the subsistence level. Higher real wages & unemployment have coexisted.

Government expenditures (G) in the Keynesian model, as mentioned earlier, depend, among other things, on the demand for public goods. In modern democracies public perception of this demand varies across the spectrum of differing political ideologies. Political parties more oriented to a socialistic pattern of society would prefer a higher share of G in the planned expenditures or aggregate demand. The perception could also change with national & global conditions prevalent at a point in time. The recent outbreak of the pandemic of coronavirus (Covid 19) has increased the general awareness about public health as a public good; hence, G is bound to rise with a greater allocation of public money on such public health inputs as anti-virus vaccines for the healthy citizens, medicines for those infected, & ventilators for the very sick.

Check Your Progress - 2

4. If P stands for average price level ,Q stands for real GDP and M for money stock, Velocity of money is represented by which of the following formula?
   a. PQ/M
   b. P+Q/M
   c. QM/P
   d. (P+Q+M)/3
5. What does the velocity of money measure?
   a. The speed at which money changes hands or circulates in the economy
   b. The speed at which the money flows from the central bank to the commercial banks
   c. The speed at which the money flows from one commercial bank to another
   d. The speed at which money flows from one country to another as a result of international trade
6. The quantity theory of prices assumes that _____.
   a. Velocity of money is unstable and unpredictable
   b. Velocity of money is highly unpredictable
   c. Velocity of money is always predictable
   d. Velocity of money is relatively stable and predictable.

14.6 New Classical Macro Economics

The new classical macroeconomic framework emphasizes the role of flexible wages and prices. The approach is also based on the new concept of “rational expectations”. New classical macroeconomics is based on two assumptions: 1) flexibility of prices and wages and the responses of the people are based on the consideration of available information, and 2) the government cannot mislead people as they are well informed.

14.6.1 Rational expectations

Expectations regarding investment, consumer spending and savings play a significant role in determining macroeconomic trends. According to the rational expectations hypothesis, people make unbiased forecasts regarding the future of economy based on all available information. Hence the basic assumption is that the government cannot trick the people with fiscal and monetary policies. Therefore, the theory of rational expectations was a self critique of the New Classical economics.

Check Your Progress - 3

7. Neo-classical macroeconomics is based on what assumptions?
   a. Prices and wages are flexible
   b. People use all available information regarding economic policies
   c. People do not have any information regarding the economic policies
   d. Both a and b

Activity 14.2

According to Keynes, the government can help in maintaining optimum output and employment through various policy measures. In the era of globalization, many economists feel that Keynesian theory has lost its relevance. Do you think that Keynesian theory is irrelevant in India's case?

Answer:

14.7 Supply-side Economics

Supply-side economists believed that creating an environment which provided people with incentives to work and save money and was conducive to investment and employment generation would help in achieving economic growth. They said that the aggregate demand in the economy was always adequate to absorb the aggregate supply produced in the economy.

The supply-side economists believed that implementing tax-cuts would provide incentives to people to work more and increase their consumption and savings. This would result in an increase in the aggregate supply in the economy. In the same way, huge tax-cuts would also induce capitalists to infuse more capital in the economy. Thus, tax-cuts would help in increasing the aggregate supply in the economy.

14.7.1 Factors Determining Economic Growth in Supply-side Economics

Role of incentives

According to supply-side economists, a reduction in tax rates would serve as an incentive to people to increase their saving and consumption activities. This was because a reduction in the tax rates on the personal incomes of individuals would increase their disposable income[1]. With higher disposable incomes, individuals would be motivated to improve their productivity. This again would improve the aggregate supply in the economy. Therefore, the supply-side economists believed that a reduction in taxes on income received from interest rates, or dividends, would lead to an increase in savings, investment, and economic growth.

Tax-cuts

Supply-side economists advocated that huge tax-cuts would induce people to work more and save more. This in turn would increase aggregate supply in the economy, contributing to the nation's economic growth. These economists advocated a complete restructuring of the tax system through 'supply-side tax cuts.'

These supply-side measures were based upon the following premises:

- The reforms must be made with a view to encourage workers and entrepreneurs by lowering tax rates that result in increased income.
- The restructured tax system should reduce the tax burden on individuals with high incomes.
- The restructured tax system must be designed to encourage productivity and supply of factors of production instead of controlling or influencing aggregate demand.

Supply-side economists proposed numerous tax cuts such as:

- Lowering the tax rates on personal incomes
- Reducing corporation tax
- Reducing the tax rates on income earned from savings.
- Granting tax exemptions to firms that invested in new businesses, new plants, buildings, etc.

The exhibit given below discusses the corporate tax rate cut in 2019 and its impact on the Indian economy's growth.

Exhibit 14.1: Corporate Tax Rate Cut and Impact on Economic Growth

In 2019, the Government of India slashed the corporate base tax rate from 30 percent to 22 percent. With surcharge of 10% and cess of 4%, the tax rate stands at 25.17%. For new manufacturing companies, it was further low at 15% (with surcharge and cess it will be 17.16%).

Contd…

[1] Disposable income is the income available with people for personal consumption, saving, investment, etc.

This tax rate cut was a measure to boost investment and growth in the economy. The lower tax rate, which was lower than other Asian competitor countries, will make the India companies more competitive globally. This rate cut implied a reduction of approximately ₹ 1.5 lakh crore in direct tax collections.

The implications of this tax rate cut was that it:

- Boosted the Indian economy and brought around 4,000 companies into the tax bracket.
- India clocked a net increase of over ₹ 50,000 crore in FY21 in tax payments to ₹ 1.90 lakh crore, from around ₹ 1.40 crore in FY20 as per an analysis by SBI Research.
- The tax cut contributed 19 percent to the top line of these companies.
- The tax rate cut benefits are seen spilling over to FY 2022 also with corporate tax collections in the first two months of the FY2022 clocking ₹ 43,454 crore.
- The rate cut also enabled many company to deleverage, which added around 5% to their topline, especially in consumer durables, healthcare and cement sectors.

The corporate tax rate of 2019 is thus a supply-side measure that influenced economic growth in the country.

Source: https://www.business-standard.com/article/companies/tax-reduction-cost-cuts-buoys-india-inc-net-by-105-in-fy21-report-121072001399_1.html

Criticism

Supply-side economics was criticized on the following grounds:

- There was too much emphasis on large tax cuts. Economists said that past statistical data showed that a reduction in tax rates would lead to only a moderate increase in the savings of individuals and the supply of workers.
- According to supply-side economics, reducing tax rates would result in an increase in economic growth. However, during the 1980s, it was observed that the US economy suffered a budget deficit as a result of the implementation of supply-side tax cuts.
- Supply-side economists proposed a lower tax burden on high income individuals. However, critics pointed out that this would widen the income disparity among individuals in the economy.

Example: Supply-Side Policies

The microeconomic policies that governments introduce to transform the underlying tax structure of the economy with the objective of improving the performance of individual workers, industries, firms and markets are known as supply-side policies.

Contd….

The main objective behind supply-side policies is to increase the aggregate supply in the economy. Supply-side economic policies can be broadly classified into:

- *General supply-side measures:* Using these, the government attempts to restructure production (capacity) in the nation through privatization. Some of the general supply-side measures could be – denationalization (transferring huge monopolistic public sector enterprises [PSEs] to the private sector), deregulation, contracting out (permitting PSEs to outsource services to the private sector), etc.
- *Labor market supply-side measures:* These measures are implemented to reduce the unemployment rate and increase employment opportunities and thereby raise the aggregate supply in the economy. Supply side economists believe that creating a free labor market would enhance employment opportunities in a country over the long term. Some of these measures include reducing the power of trade unions and abolishing minimum wages.

Check Your Progress - 4

8. Some economists argue that problems arise because of high rates of taxation and heavy regulation that lower the incentives to work, save and invest. These economists are called as _____.

   a. Keynesian economists
   b. Neo-Keynesian economists
   c. Rational expectations economists
   d. Supply-side economists

9. According to which of the following economists does reducing tax-rates and creating an environment that provided incentives for people to work and save money help in improving economic growth?

   a Classical economists
   b Keynesians
   c Supply-side economists
   d Monetarists

14.8 Summary

- Different schools of economics have different views as to the role of the government in the economy. Different approaches – the Classical approach, Keynesian approach, Monetarist approach, and the new or neo classical approach have been developed by various economists.

- J.B. Say, a prominent classical economist is of the opinion that over production cannot exist. Classical economists are of the view that economy operates at full employment or at its potential output.
- The limitations of the classical approach led to the development of a new approach by Keynes. Keynes advocated the concept of aggregate supply and aggregate demand. Keynes posited that prices and wages are inflexible and that the AS curve is flat or upward-sloping.
- Monetarists are of the view that money supply determines the short run movements in nominal GDP and long-run movements in prices.
- New classical macroeconomics is based on two assumptions: prices and wages are flexible, and people use all available information.
- The supply-side school of economic thought believed that reducing the tax rate and creating an environment which induced people to work more and save more would help in achieving economic growth.

14.9 Glossary

Budget deficit: For a government the excess of total expenditures over total receipts, with borrowing not included among receipts. This difference (the deficit) is ordinarily financed by borrowing.

Classical economics: The predominant school of economic thought prior to the appearance of Keynes' work; founded by Adam Smith in 1776. Other major figures who followed him include David Ricardo, Thomas Malthus, and John Stuart Mill. By and large, this school believed that economic laws (particularly individual self interest and competition) determine prices and factor rewards and that the price system is the best possible device for resource allocation.

Quantity theory of money: The idea that there is a direct link between the quantity of money in the economy and the price level.

14.10 Self-Assessment Test

1. Discuss the classical school of economic thought.
2. Give a brief account of the monetarist approach and the velocity of money, quantity theory of prices.
3. Explain in detail about the supply-side school of economic thought.

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14.12 Answers to Check Your Progress Questions

14.12.1 Model Answers to Check Your Progress Questions

Following are the model answers to the Check Your Progress questions given in the Unit

1. (a) Vertical

According to classical economists supply creates its own demand. This is based on the premise that prices and wages are flexible and the Aggregate Supply (AS) curve was vertical

2. (d) Prices and wages are downward inflexible

Keynes' first observation was that a modern market economy could get trapped in underemployment equilibrium. According to Keynes, due to the inflexibility in the wages and prices there is a lack of an economic mechanism to ensure quick restoration of full employment and production at full capacity. A nation's low output may continue for a long time because of the non-existence of a self-correcting mechanism or an invisible hand that can pull the economy back to full-employment.

3. (a) Flat or upward rising

In contrast to the classical economists, Keynesian economists argued that wages and prices are inflexible and the economy is always under the trap of

underemployment equilibrium. According to Keynes, the shape of the aggregate supply curve is flat or upward sloping, i.e. a backward 'L'..

4. (a) PQ/M

Income velocity of money refers to the ratio of nominal GDP to the stock of money. Velocity measures the rate of stock of money turnover in relation to the total income or output of a nation. It can be defined as nominal GDP per annum divided by money stock.

5. (a) The speed at which money changes hands or circulates in the economy

The velocity of money describes the speed of turnover of money. The velocity of money is high when money turns over rapidly, and the velocity of circulation is low when the quantity of money is large in relation to the flow of expenditure.

6. (d) Velocity of money is relatively stable and predictable

The quantity theory of prices explains the movement in the overall price level. According to monetarists, the velocity of money is stable because velocity shows the underlying patterns in the timing of income and spending.

7. (d) Both a and b

Neo-classical macroeconomics emerges as a school of thought challenging the school of macroeconomic thought which says that the monetary policy affects unemployment and output in the short run. Neo-classical economists adopted idea of classical economists that price and wages are flexible and assumes that people are aware of the monetary and fiscal policies undertaken by the government and that the government cannot mislead them.

8. (d) Supply-side economists

Supply-side economists advocate lower taxes and regulations to encourage people to work more, leading to an increase in the national income.

9. (c) Supply-side economists

Supply-side economists believe that reducing tax-rates and creating an environment that provided incentives for people to work and save money help in improving economic growth.

14.12.2 Model Answers to Exercises

Following are the model answers to the Exercises given in the unit.

A. (a) 5

Velocity of Money = Y / M_S

= 800 / 160

= 5

B. (a) ₹ 990 crore

Velocity of Money (V) = Y / M_S

Y = V × M_S

= 4.5 × 220

= ₹ 990 crore

C. (a) 2.5

At equilibrium Md = Ms

Velocity of money (V) = Y/Ms

V= Y/ 0.4Y = 2.5

Unit 15

Fiscal Policy and Budget Deficit

Structure

15.1 Introduction

In the previous unit we discussed about different schools of economic thought. In the present unit we will discuss the objectives of fiscal policy and its significance in economic development.

Fiscal policy is defined as a policy under which the Government uses its expenditure and revenue programs to produce desirable effects and avoid undesirable effects on national income, production and employment. In other words, fiscal policy is a strategy framed by the government that directs the government with regard to planning the expenditure, revenues and managing fiscal deficits/surpluses in the budget.

Fiscal policy helps in checking inflation and plays a major role in the economic development. Fiscal policy involves designing the tax structure, determining tax revenue and handling public expenditure. Fiscal policy can be used to minimize the effects of business cycles and to maintain stable price levels.

In this unit, we will discuss different objectives of fiscal policy, various components of fiscal policy and stabilization policies adopted by government. The unit will explain the concept of a budget, budgetary policy and how national debt is related to budget. The unit also discusses the limitations of fiscal policy.

Fiscal policy discussion should be understood against the background of the responsibilities of a 'fiscal state' as explained by Richard Musgrave & others. The objectives of a modern fiscal state are three-fold:

1. To generate resources for the supply of public goods i.e. goods which offer themselves to non-rival consumption & non-excludability;
2. Equitable distribution of income through differential levy of taxes under progressive taxation; &
3. Ensuring that there is economic stability by counter-cyclical policies which moderate or eliminate the impact of business cycles which are ubiquitous in a market-economy. Both taxation & spending need to confirm to these broad set of objectives of modern public finance.

15.2 Objectives

By the end of this unit, students should be able to:

- Explain the objectives of fiscal policy and its constituents
- Identify the suitability of different instruments of fiscal policies in specific problems
- Analyze the stabilization policies practiced by the government
- Explain different budgetary policies

15.3 Objectives of Fiscal Policy

The objectives of fiscal policy are:

15.3.1 Mobilization of resources

Governments follow two methods to raise funds for investment – voluntary and compulsory savings. Resources can be mobilized through public borrowing and taxation. Generally, voluntary savings are not significant in developing countries as the per capita income is low. The government can collect more money by introducing new taxes and increasing the existing taxes.

15.3.2 Economic development and growth

The resources are mobilized through taxation policy, public borrowing and public expenditure. Public expenditure for development of infrastructure, expansion of investment opportunities, and subsidies on production of specific items contributes to the development and growth of the economy. The contribution of public expenditure to growth depends on its size as well as the ratio of productive expenditure to total expenditure.

15.3.3 Reduction of disparities of income

Fiscal policy contributes towards the reduction of economic disparities in the society. Economic disparities can be minimized through imposition of more taxes on the richer sections, raising the taxes on luxury and harmful items, etc. Revenues so generated are useful for the upliftment of the weaker sections of society, which leads to redistribution of wealth.

15.3.4 Expansion of employment

Full employment is an indication of economic development and growth. Employment is very important, as without it economic development would be incomplete. Employment opportunities can be expanded through fiscal policy.

15.3.5 Price stability

Fiscal policies are helpful in maintaining stable prices. When the economy is experiencing deflation, the budget should be prepared in such a way that there is an increase in government expenditure, creating more income for the people who have high propensity to consume. When the economy is undergoing inflation, the government has to reduce its expenditure and control the spending capacity of the people through taxes.

15.4 Constituents of Fiscal Policy

The constituents of fiscal policy are described below:

15.4.1 Public expenditure

Some of the factors that contribute to the growth of public expenditure are listed below:

Rising defence expenditure: The need to spend large amounts of money on defense preparedness and maintenance has necessitated increase in public expenditure.

Rise in price level: Inflation in the economy compels the government to spend more to maintain the same real level of expenditure on public utilities, so public expenditure in money terms keeps rising.

Economic planning: Different government activities like central planning, formulation plans, execution and evaluation of plans require public expenditure.

Basic infrastructure: Economic growth depends on the development of infrastructure like roads, railways, ports, dams, canals, bridges and power plants, all of which involve public expenditure.

Population growth: The growing population requires more investment in education, health care, food, housing, public utilities, etc.

The economic growth and development of a country depend on the size and composition of public expenditure. Unproductive expenditures do not lead to economic growth where as productive expenditures results in economic growth.

Activity 15.1

Fiscal policies are strategies that guide the government in planning expenditure, revenues, etc. What do you think are the instruments of fiscal policies that help the government in checking inflation and managing its revenues?

Answer:

15.4.2 Taxation

One of the important sources of revenue for the government is taxation. The tax structure should fetch the government maximum revenue and at the same time avoid adverse effects on the investment of private sector. Taxes can be imposed on both luxury items and essential goods. There are two types of taxes – direct and indirect taxes.

Direct taxes: A direct tax is a tax collected directly from a person or organization, who is subjected to the tax. Direct taxes are framed to match the personal circumstances of the people like ability to pay, age and size of the family, etc. Some direct taxes are – income tax, corporate tax, capital gains tax, etc.

Indirect taxes: An indirect tax is a tax indirectly paid by the people who buy goods/services, as it is levied on goods or services rather than on persons or organizations. Example of indirect tax is GST (Goods and Services Tax). Indirect taxes are easier to collect as they are taxed at the retail or wholesale level.

Exhibit 15.1 shows India's direct and indirect tax revenues as per Union Budget, 2021-22

Exhibit 15.1: India's direct and indirect tax revenues as per Union Budget, 2021-22

(₹ Crore)

	Major Head	Actuals 2019 2020	Budget Esimetes 2020-2021	Revised Estimates 2020-2021	Budget Estimates 2021-2022
A. TAX REVENUE					
(a) Taxes on Income and Expenditure		**1037155.03**	**1306000.00**	**893000.00**	**1095500.00**
Corporation Tax	0020	556875,55	681000.00	446000.00	547000.00
Taxes on Income Other Than Corporation Tax	00211	480348.14	625000.00	447000.00	548500.00
Hotel Receipts Tax	0023	1.26	…	…	…
Interest Tax	0024	2.09	…	…	…
Fringe Benefit Tax	0026	-135.27	…	…	…
Other Taxes on Income and Expenditure	0028	63.26	…	…	…
(b) Taxes on Property and Capital Transactions		**12394.04**	**13000.00**	**12000.00**	**12500.00**
Estate Duty	0031	1.70	…	…	…
Taxes on Wealth	0032	18.11	…	…	…
Securities Transaction Tax	0034	12374.23	13000.00	12000.00	12500.00
(c) Taxes on Commodities and Services		**957710.05**	**1099520.00**	**992219.49**	**1105327.13**
Central Goods and Services Tax (CGST)	0005	494070.60	580000.00	431000.00	530000.00
Union Territory Goods and Services Tax (UTGST)	0007	3034.98	3000.00	2719.49	3327.13
Integrated Goods and Services Tax (GST)	0008	9125.21	…	…	…
Goods and Services Tax Compensation Cess	0009	95553.09	110500.00	84100.00	100000.00
Customs	0037	109282.54	138000.00	1120000.00	1360000.00
Union Excise Duties	0038	239452.43	267000.00	361000.00	3350000.00
Sales Tax	0040	…	…	…	…
Service Tax	0044	6029.11	1020.00	1400.00	1000.00
Other Taxes and Duties on Commodities and Services	0045	1162.09	…	…	…
(d) Taxes of Union Territories without Legisiature		**2800.21**	**4500.00**	**3060.34**	**3732.14**
GROSS TAX REVENUE		**20100059.33**	**2423020.00**	**1900279.83**	**2217059.27**

Source: https://www.indiabudget.gov.in/doc/AFS/allafs.pdf

15.4.3 Public Borrowing

It is another fiscal method by which savings of the community may be mobilized for economic development. In developing economies, the Governments resort to public borrowing in order to finance schemes of economic development. It serves as a source of revenue for the government and is commonly used in developing countries. Usually in developing countries, governments depend on public borrowing for financing projects with long gestation periods. The government can also borrow funds from international agencies like World Bank, the International Finance Corporation (IFC), International Monetary Fund, etc. Borrowing is the quickest mode of raising funds. It is anti-inflationary and generates additional productive capacity. But the method is not without hindrances.

Exhibit 15.2 shows the public borrowing statistics of Indian Government in April to June 2021.

Exhibit 15.2: Components of Central Government Debt (CGD) – April – June, 2021

SDDS Data Category and Component	Unit of Description	Period of Latest Data	Latest Data	Previous Data	Percentage Change From
1. Public Debt (2+3)	₹ Crore	Apr/21 – Jun/21	1,10,76,084.67	1,02,39,307.38	8.2%
2. External Debt	₹ Crore	Apr/21 – Jun/21	6,72,100.63	6,55,941.19	2.5%
3. Internal Debt	₹ Crore	Apr/21 – Jun/21	1,04,03,984.04	95,83,366.19	8.6%
4. Other Liabilities	₹ Crore	Apr/21 – Jun/21	10,15,108.28	13,82,473.26	-26.6%
5. TOTAL DEBT (1+4)	₹ Crore	Apr/21 – Jun/21	1,20,91,192.95	1,16,21,780.64	4.0%
Guaranteed Debt					
I. Total Guaranteed Debt	₹ Crore	Apr/21 – Jun/21	5,27,931.87	5,24,339.19	0.7%
II. Outstanding Guaranteed Debt	₹ Crore	Apr/21 – Jun/21	3,95,930.88	3,68,835.66	7.3%

Source: https://dea.gov.in/sites/default/files/Data%20on%20Central%20Government%20Debt%20for%20the%20quarter%20ended%20June%202021%28Q2%29.pdf

15.4.4 Deficit financing

When the expenditure of the Government exceeds the receipts, there arises a deficit called as fiscal deficit. The Government has to generate funds to finance the deficit in receipts. This generation of funds is referred to as "deficit financing".

Deficit financing leads borrowings by governments shown as additional liabilities on their capital account. When budgeted spending is more than the stated sources of financing through revenues, the excess spending is accounted for by a rise in borrowings on capital account in the balance sheet of the government. This borrowing is routed usually as a sale of new sovereign bonds to the central bank which pays the government by printing an equitable value of currency notes. Each Rupee which is thus lent to the government by the central bank may be imagined to be deposited in an account owned by the government in a bank. Further, each

new Rupee deposited is now being subjected to the money multiplier's influence. The money multiplier is given by the ratio: 1/reserve ratio prescribed by the central bank. The reserve ratio being always a positive fraction, each Rupee thus deposited leads to additional Rupees in the total money supply given by the formula of the money multiplier: 1/(reserve ratio). So, if the reserve-ratio prescribed is 0.25 (i.e. the sum of CRR & SLR), then each additional Rupee of borrowing by the government would lead to an increase in money supply given by: 1/0.25 or four times. This is what deficit financing does to the financial sector i.e. it increases money-supply.

Now, we have already learnt in the previous chapters about the Keynesian expenditure multiplier. Each Rupee of additional government spending is an increase in the autonomous component of Aggregate Demand (AD). It is subjected to the expenditure multiplier's effect & leads to an increase in equilibrium income given by the formula: 1/[1-MPC]. This is equal to a value greater than unity. For example, if MPC is 0.8, then equilibrium national income rises by five Rupees.

Check Your Progress - 1

1. Which of the following best defines fiscal policy?
    a. Fiscal policy is a policy under which the government uses its expenditure and revenue programs to produce desirable effects and avoid undesirable effects on national income, production and employment
    b. Fiscal policy is a policy under which government announces its financial plans for the next fiscal year
    c. Fiscal policy is a policy which is used to check money supply
    d. Fiscal policy is a policy in which the government announces it revenue generation plans for the next fiscal year
2. Which of the following is not a function of fiscal policy?
    a. Designing the tax structure
    b. Determining tax revenue
    c. Handling public expenditure
    d. Fixing bank interest rates
3. Indirect taxes are easier to collect because _____.
    a. They are taxed at the retail or wholesale level
    b. They are supposed to be paid in banks
    c. They form a very small amount
    d. They are collected at the taxpayer's doorstep

4. When the overall investment prospects of the economy look gloomy, and when investors make very pessimistic profit projections, which type of fiscal policy instrument is recommended?

   a. Increase in government expenditure

   b. Increase in tax rate

   c. Increase in bank rate

   d. Decrease in CRR

15.5 Fiscal Policy and Efficiency Issues

The growth of an economy depends upon the efficient allocation and management of resources, which is determined by fiscal policy. Economic growth depends critically on the level of efficiency in the use of resources. The Incremental Capital Output Ratio (ICOR) is an important indicator of future growth trends. Higher the ICOR, lower the efficiency. The development of an economy is dependent upon ICOR and it has been a matter of concern for the Indian economy that the ICOR has been very high. A decline in this ratio would reduce the new resources needed to achieve a targeted rate of growth in the economy.

15.6 Fiscal Policy and Stabilization

Stabilization policies are practiced by the government to maintain full employment and stability in the price level. Consumption declines whenever an economy is suffering from a recessionary GDP gap. Further, investments also go down due to pessimistic profit projections by investors. In such situations, the government should follow expansionary fiscal policies in order to increase aggregate demand. Aggregate demand can be increased by increasing government spending or decreasing tax rates, thereby raising the equilibrium real GDP. When the economy is undergoing high inflationary pressures, the government can exercise contractionary fiscal policies that will decrease government spending, or increase taxes thereby controlling the aggregate demand.

15.6.1 Automatic stabilizers

An automatic stabilizer can be described as an expenditure program or tax law that automatically increases expenditure or decreases taxes when an economy is in recession or automatically decreases expenditure or increases taxes when an economy is experiencing inflation. Automatic stabilizers are the embedded responses of a system to correct instability and restore economic stability. The two main automatic stabilizers are:

Changes in tax revenues: When there is an increase in GDP of a country, people who did not fall in the tax bracket earlier, would now fall in the tax bracket. At the same time, existing tax payers would move to higher tax brackets. Therefore, with the increase in GNP, tax revenues also increase.

Unemployment compensation and welfare payments: Usually, in developed countries, unemployed people or workers who are laid off are paid certain amount by the government as unemployment compensation. During recession, when there is more unemployment in the economy, the unemployment compensation paid by the government increases.

15.6.2 Discretionary fiscal policy

Discretionary fiscal policy can be defined as the deliberate changes in the tax rates and planned outlays made by the government to stabilize the economy. Discretionary fiscal policy involves public borrowing and forced saving in the form of taxation.

Exhibit 15.3 details the Fiscal Policy Changes of US Government to Counter the Economic effects of the COVID-19 Pandemic

Exhibit 15.3: Fiscal Policy Changes of US Government to Counter the Economic effects of the COVID-19 Pandemic

United States was among the countries that was most by the COVID-19 Pandemic. Both employment and output fell in 2020. The share of households in poverty rose to 11.4% in 2020 as against 10.5% in 2019. The US Government responded with a number of measures that brought back the economy on the recovery path. By September, 2021, the share of households in poverty decreased to 9.1%. While during the economic crisis of 2007-09, US economy faced a recession that lasted almost three years, the current crisis showed turnaround within 18 months by which time the GDP of the US was on par with the pre-pandemic level.

How did the US Government achieve this turnaround?

As per a mint article, the fiscal responses to the pandemic succeeded in pushing poverty in the opposite direction. The fiscal responses were at periodic intervals and varied such as:

1. Federal Reserve rapidly slashing interest rates to near zero
2. Fed's interventions in the market to prevent economic crisis from turning into a financial crisis
3. The Government's emergency economic package of $ 5.9 trillion
4. Several targeted measures such as forgivable loans to small businesses in the form of PPP or Paycheck Protection Program, extension of unemployment insurance to Gig workers, low cost loans from Fed and treasury to medium and small businesses , aid to state and local governments etc.

Not only were these measures spontaneous, but they were executed innovatively such as direct deposit of cash into household accounts, PPP helped forge a employer-employee bonding so on.

Contd….

To doll out these economic measures, the US Government relied on debt heavily pushing the publicly held federal debt from 79% of GDP in 2019 to 98% in 2021. While this provided a ground for criticism, others included wastage of the economic stimulus money, unemployment insurance being more than PPP enticed many to stay out of job.

The US Government and Fed's fiscal policy measures thus were given a uptick while there were also many lessons to be learnt.

Source: https://www.livemint.com/politics/news/how-the-us-nailed-the-economic-response-to-covid19-11631719983022.html

Activity 15.2

The Indian economy is undergoing reforms and successive governments have committed themselves to reducing the fiscal deficit. Finding it difficult to tap revenue sources, the government is resorting to reduction in its expenditures. As a result public investment in many social sectors and agriculture has fallen drastically. In the current scenario, how fiscal policy and monetary policy help the economy to sustain high growth rate? Justify your answer.

Answer:

Check Your Progress - 2

5. How should the government respond when the economy is facing a depression?
   a. Increase public expenditure
   b. Reduce public expenditure
   c. Increase direct tax
   d. Increase indirect tax
6. When an economy suffers from recessionary gap, which type of policy should the government adopt?
   a. Expansionary fiscal policy
   b. Contractionary fiscal policy
   c. Stabilization policies
   d. Both b and c

7. Under which of the following policies does the government make a deliberate attempt to change the tax policy and planned outlays to stabilize the economy?
   a. Public borrowing policy
   b. Discretionary fiscal policy
   c. Taxation policy
   d. Stabilization policy
8. Which of the following is not an automatic stabilizer?
   a. Changes in tax revenues
   b. Unemployment compensation
   c. Welfare payments
   d. Increase in interest rates

15.7 Fiscal Policy and Economic Growth

The reasons why fiscal policy is used in the attainment of stable prices and full employment are as follows:

- Ineffectiveness of the monetary policy during recessionary period when there is mass unemployment
- Government spending and taxation to increase aggregate demand gained prominence with the development of new economic concepts by Keynes.

15.7.1 Role of fiscal policy

- A well designed fiscal policy would promote consumption and investment through efficient utilization of resources, and would also checks inflation at the same time.
- It would regulate the rate of change of aggregate total output leading to a higher economic growth rate.
- Fiscal policy which involves investments in the areas of communication, irrigation, power, etc. would lead to improvement in infrastructural facilities that in turn lead to economic development.
- A fiscal policy with ideal taxation prevents inequality in the distribution of income.

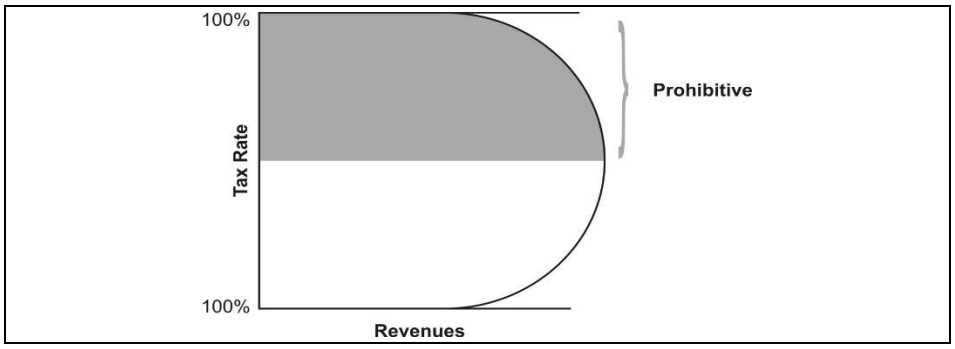
Activity 15.3

Fiscal policy is said to be most effective in tackling the problem of unemployment at the time of extreme depression (slump). Explain.

Answer:

15.8 Laffer Curve

Tax Collection Paradox: The Laffer curve explains the typical functional relationship between the tax rate and tax revenue collected. Introduced by Prof. Arthur B Laffer, the diagram "Laffer Curve" represents a noteworthy contribution in fiscal management. Laffer argues that in a highly taxed nation, the government can hope to collect more revenue by lowering the tax rate rather than by raising it further. The Laffer curve is a bullet-shaped curve where the minimum and maximum points of tax, yields zero tax revenue.



As can be seen from the above bullet-shaped diagram, the revenue collection continues to increase as tax rates are raised but after a point, steeper tax rates actually result in a smaller total tax revenue collection.

There could be many reasons for this paradox. Once the rates are very high, people do not find it worth their while to make more investments and to work hard to increase their incomes when, understandably, much of the fruits of their risk-taking action and efforts will be taken away by the government through steeper taxation. Further, such high rates may also tend to encourage tax evasion on a large scale. Once the optimum rates have been crossed and the government has started taxing at 'prohibitive rates', total revenue collection will start shrinking with other unintended negative consequences for the economy.

In such a situation, the solution lies in reducing the rate of taxation and in ascertaining whether tax collections have gone up due to the twin positive developments: economic expansion and better compliance with tax laws. The economic effect recognizes the positive impact that lower tax rates have on work, output, and employment, which provide incentives to increase these activities. By contrast, raising tax rates penalizes people for engaging in these activities.

Validity of Laffer Curve in the Indian Context: An empirical study was undertaken by Dr. S. Ramalinga Choodambigai for the pre-liberalization period from1982-1983 to 1999-2000 and confirmed that the Indian Income Tax System was operating in the prohibitive range of the Laffer curve during the period under consideration. Later on, with the advent of economic liberalization, these rates underwent a significant downward revision and it is felt that revenue collections improved significantly as a result.

15.9 Budget Deficit and Debt

What is a Budget?

A budget is a financial statement that shows the expected revenues and expenditures of the Government during a particular financial period, usually one year. In India, the budget of the Government is prepared for the financial year starting April 1 of a particular year and ending on March 31 of the next year. The budget of the Government of India (GoI) is also referred to as the 'Union Budget'. The Union Budget provides data regarding the expenditure and revenues of the Government in the previous year as well as its proposals for revenues and expenses in the coming financial year. The budget also includes proposals for change in the fiscal policy of the Government for the coming financial year.

What is Budget Deficit?

A budget deficit arises out of an imbalance between the receipts and payments of the Government. When the expenditure of the Government is more than its receipts, it leads to a deficit in the budget. On the other hand, when the revenues of the Government are more than its expenses, it leads to a 'surplus' in the budget. This is also known as 'budget surplus'.

Revenues of the Government:

- Revenues received from taxes
- Interest received on the loans given by the Central Government
- Dividends from PSEs (public sector enterprises)
- Receipts from loan repayments
- Receipts from sales of Government properties, etc.

Expenses of the Government:

- Payment of interest on loans taken by the Government
- Expenses incurred on daily transactions of the Government
- Expenses incurred on payment of subsidies, social spending, etc.

What is National Debt?

When the expenditure of the Government is greater than its receipts, the Government has to borrow money to meet these expenses. The amount that it borrows is called 'national debt'. If the Government borrows the money from within the country, the debt is known as 'internal debt'. In contrast, if the money is borrowed from external sources or from individuals and institutions outside the country, the debt is known as 'external debt'. Internal debt and external debt together constitute the national debt of a country.

Components of national debt

The national debt of India consists of the following components:

- Internal debt: This refers to the amount borrowed by the Government from within the country. For example, the special securities issued to the Reserve Bank of India (RBI).

- External debt: This refers to the amount borrowed by the GoI from foreign governments and bodies.
- Other liabilities: The other liabilities of the Government accrue as a result of its function as a banker rather than a borrower. For example, interest bearing reserve funds of departments like telecommunications and railways.

Check Your Progress - 3

9. When the economy is experiencin3 deflation, what kind of a budget should be prepared by the government?

   a. Deficit budget
   b. Surplus budget
   c. Budget where there is an increase in direct taxes
   d. Budget where there is an increase in indirect taxes

15.10 Government Budgetary Policy

The Union Budget is submitted every year to both Houses of Parliament by the Finance Minister. As per the Constitution of India, the budget has to be approved by the Legislature. The Union Budget is presented in Parliament every year on the last working day of February. The Budget of the Indian Government has two major components – *Part A – General Economic Survey* and *Part B -- Budget Documents*

15.10.1 Part A – General Economic Survey

In the economic survey, the ruling Government looks at the economic growth in the past financial year and the reforms it plans to take up in the future for the nation's economic development. The economic survey is usually presented one day before the presentation of the Budget. The economic survey is a summary of the economic trends in the economy and facilitates a better allocation of resources. For instance, in the economic survey 2020-21, the Finance Minister laid out various proposals of the Government that aimed at improving the economic conditions, especially in the wake of the pandemic, of the country. Some of the important topics that were covered in the Economic Survey document 2020-21 included[2]: Saving Lives and Livelihoods amidst a Once-in-a-Century Crisis

- **Adoption of a four-pillar strategy** of containment, fiscal, financial, and long-term structural reforms
- **Growth leading to Debt Sustainability**
- Whether the sovereign credit ratings of India reflect the fundamentals of the economy

[2] https://pib.gov.in/PressReleasePage.aspx?PRID=1693231

- Focus on economic growth that lifts the poor out of poverty
- Building an agile health infrastructure to respond to any health emergencies such as the Pandemic
- Process reforms to simplify regulations and invest in greater supervision
- The need to restrict regulatory forbearance to emergency situations to prevent its misuse
- Innovation needs thrust up, especially from the private sector, to reach the ambitious target of being in the list of top 10 innovating economies
- The strong positive effects of the Pradhan Mantri Jan Arogya Yojana (PM-JAY) launched in 2018
- Improved access to base necessities in all states of the country. Base necessities include water, housing, sanitation, micro-environment and other facilities.
- Promoting Sustainable development and climate change
- Developing social infrastructure, employment and human development.
- Growth in Investment climate, agriculture and food management, Industry and infrastructure, money management and financial intermediation etc.

15.10.2 Part B – Union Budget

As per Section 112 of the Indian Constitution, the Union budget of a year, also referred to as the Annual Financial Statement, is a statements of the estimated receipts and expenditure of the government for that particular year. The Union Budget, comprises the following major components:

A. Annual Financial Statement (AFS)

B. Finance Bill

C. Statements mandated under FRBM Act:
   i. Macro-Economic Framework Statement
   ii. Medium-Term Fiscal Policy cum Fiscal Policy Strategy Statement

D. Expenditure Budget

E. Receipt Budget

F. Expenditure Profile

Annual Financial Statement

This statement shows the estimated the receipts and expenditure of the Government of India for 2021-22 in relation to the estimates for 2020-21 and the actual figures of 2019-20. The receipts and disbursements are shown under three parts in which Government Accounts are kept viz., (i) The Consolidated Fund of India, (ii) The Contingency Fund of India and (iii) The Public Account of India.

Finance Bill

At the time of presentation of the Annual Financial Statement before the Parliament, a Finance Bill is also presented in fulfilment of the requirement of

Article 110 (1)(a) of the Constitution, detailing the imposition, abolition, remission, alteration or regulation of taxes proposed in the Budget. As per Union Budget 2021-22, the following were the major highlights of the Finance Bill[3]

- No change in income tax rates for individuals and corporations.
- **Limit on tax-free Income from provident funds**: Tax exemption on the interest income on the employees' contributions to provident funds was limited up to ₹ 2.5 lakh.
- **Extensions on tax incentives by a year upto the end of fiscal 2021-22**. This includes tax deduction upto ₹ 1.5 lakh on interest on housing loan, and tax holiday for affordable housing projects, profits of startups, and investing capital gains in start-ups.
- **Agriculture and Infrastructure Development Cess:** The cess will be levied on some imported items including gold, silver, alcoholic beverages, coal, and cotton, and basic customs duty will be reduced by an equal amount. The cess will be levied on petrol and diesel at the rate of ₹ 2.5 and ₹ 4 per litre respectively, with equivalent cuts in excise duty.
- **Changes in customs duty:** The customs duty on some items such as cotton, silk, some auto and mobile parts was increased
- **Reduction in time for income tax proceedings**: Time limit for the re-opening of income tax assessment will be reduced from 6 years presently to 3 years.
- **Exemption from audit**: Businesses which carry 95% of their transactions digitally and whose turnover is less than five crore rupees, are exempted from keeping audited accounts. The threshold will be increased to ₹ 10 crore.

Statements Mandated under the FRBM Act

There are two statements mandated under the FRBM (Fiscal Responsibility and Budget Management) Act, 2003.

i. Macro-Economic Framework Statement - It contains an assessment of the growth prospects of the economy along with the statement of specific underlying assumptions. It also contains an assessment regarding the GDP growth rate, the domestic economy and the stability of the external sector of the economy, fiscal balance of the Central Government and the external sector balance of the economy.

ii. Medium-Term Fiscal Policy cum Fiscal Policy Strategy Statement - It sets out the three-year rolling targets for six specific fiscal indicators in relation to GDP at market prices, namely (i) Fiscal Deficit, (ii) Revenue Deficit, (iii) Primary Deficit (iv) Tax Revenue (v) Non-tax Revenue and (vi) Central Government Debt. The Statement includes the underlying assumptions, an assessment of the balance between revenue receipts and revenue expenditure and the use of capital receipts including market borrowings for the creation of productive assets. It also

[3] https://prsindia.org/budgets/parliament/union-budget-2021-22-analysis

outlines for the existing financial year, the strategic priorities of the Government relating to taxation, expenditure, lending and investments, administered pricing, borrowings and guarantees.

Expenditure Budget

The estimates made for a scheme/programme are brought together and shown on a net basis on Revenue and Capital basis at one place. Expenditure of individual Ministries/ Departments are classified under 2 broad Umbrellas (i) Centres' Expenditures and (ii) Transfers to States/ Union Territories (UTs).

Table given below shows the expenditure budget as per Union Budget 2021-22.

Table 15.1: Expenditure of Government of India

	2019-2020 Actuals	**2020-2021 Budget Estimates**	**2020-2021 Revised Estimates**	**2021-2022 Budget Estimates**
A. Centre's Expenditure				
I Establishment Expenditure	570244	609585	598672	609014
II Central Sector Schemes/Projects	757091	831825	1263690	1051703
III Other Central Sector Expenditure Of which Interest Payment	727025 612070	887574 708203	826536 692900	1011887 809701
B. Transfers				
IV Centrally Sponsored Schemes	309553	339895	387900	381305
V Finance Commission Grants	123710	149925	182352	220843
VI Other Grants/Loans/Transfers	198707	223427	191155	208484
Grand Total	**2686330**	**3042230**	**3450305**	**3483236**

Source: https://www.indiabudget.gov.in/

Receipt Budget

Estimates of receipts included in the Annual Financial Statement are further analysed in the document "Receipt Budget". The document provides details of tax and non-tax revenue receipts and capital receipts and explains the estimates.

The table given below details the receipts as per Union Budget 2021-22.

Table 15.2: The Receipts as per Union Budget 2021-22

	Actuals 2019 2020	Budget Esimetes 2020-2021	Revised Estimates 2020-2021	Budget Estimates 2021-2022
REVENUE RECEIPTS				
1. Tax Revenue				
Gross Tax Revenue	**2010059**	**2423020**	**1900280**	**2217059**
a. Corporation Tax	556876	681000	446000	547000
b. Taxes on Income	492654	638000	459000	561000
c. Woalth Tax	20	…	…	…
d. Customs	109283	138000	112000	136000

e. Union Excise Duties	240615	267000	361000	335000
f. Service Tax	6029	1020	1400	1000
g. GST	598750	690500	515100	630000
CGST	494072	580000	431000	530000
IGST	9125	…	…	…
GST Compensation Cess	**95553**	110500	84100	100000
h. Taxes of Union Territories	5835	7500	5780	7059
Less - NCCD transferred to the NCCF/NDRF	**2480**	**2930**	**5820**	**6100**
Less - State's share	**650678**	**784181**	**549959**	**665563**
1a Centre's Net Tax Revenue	**1356902**	**1635909**	**1344501**	**1545397**
2. Non-Tax Revenue	**327157**	**385017**	**210653**	**243028**
Interest receipts	12349	11042	14005	11541
Dividends and Profits	186132	155396	96544	103538
External Grants	373	812	1422	747
Other Non Tax Revenue	126540	215465	96602	124671
Receipts of Union Territories	1762	2303	2081	2531
Total- Revenue Receipts (1a + 2)	**1684059**	**2020926**	**1555153**	**1788424**
3. CAPITAL RECEIPTS				
A. Non-debt Receipts	**68620**	**224967**	**46497**	**188000**
i. Recoveries of loans and advances@	18316	14967	14497	13000
ii. Disinvestment Receipts	50304	210000	32000	175000
B. Debt Receipts*	928680	849340	1866013	1435428
Total Capital Receipts (A+B)	997301	1074306	1912510	1623428
4. Draw-Down of Cash Balance	4970	-53003	-17358	71383
Total Receipts (1a+2+3)	2681360	3095233	3467663	3411853

Source: https://www.indiabudget.gov.in/

Expenditure Profile

It gives an aggregation of various types of expenditure and certain other items across demands.

15.11 Limitations of Fiscal Policy

Fiscal policy has certain drawbacks. They are:

Lags in fiscal policy: Delay in the approval decisions regarding the changes in tax and expenditure by the parliament or state legislatures lead to prolonged destabilizing effects in the economy.

Problems in tax policy: The tax burden is unevenly distributed among the various sectors. The agricultural sector, which is the largest employer in many developing and underdeveloped countries, is either exempted from the tax burden or the tax is very low and a high tax burden is borne by the Industrial sector. The corrupt and inefficient administration in most developing countries acts as a hindrance to efficient enforcement of tax laws.

Burden of public debt: Large scale developmental programmes have driven many governments into public debt. The problem of public debt is becoming difficult to handle, as the government has to pay lot of interest on the debt.

The following aspects of fiscal policy should be remembered:

Fiscal deficit is like a flow variable as it is incremental year after year. Public debt is a stock variable as it is to be stated with reference to a specific point in time. Each year's fresh deficit adds to the public debt by an equal amount. It is the fiscal deficit which matters for the current state of the nation's economy. Higher fiscal deficit contributes to expansion in the economy & more employment. But this increase comes at the cost of possible higher rates of inflation. Hence, deficit financing must be used in a discerning manner only when it targets sectors with potential speedy growth in equilibrium national output with assured employment creation.

Public debt is seen to be accumulating perennially over the years, but unlike private debt no single individual entity suffers the urgent burden of repayment unless it is the debt owed to an international agency with definite repayment deadlines. The debt owed to general public through government securities could be passed on or recycled indefinitely albeit with increasing interest burden to the state exchequer. However, defaulting on time deadlines of public debt securities leads to what is known as the sovereign debt crisis. In recent years, populist welfare measures undertaken by democratically elected governments have accentuated these crises situations & threatened the collapse of currency systems in countries like Greece. This is one more example to show the close connection which exists between fiscal & monetary policies. The health of a nation's financial sector depends on the functioning of its bond markets. Government securities floated as fiscal policy instruments enjoy high credibility levels in the capital markets. These determine the risk-free rates of return as yields to maturity. Higher bond prices result in lower yields & the market determined interest rates. The cost of borrowing is also lowered accordingly. Conversely, lower demand for government securities results in lower market prices for them, which results in higher yields to maturity. This makes for a situation of higher cost of raising fresh capital. In other words, indiscriminate use of deficit financing creates financial instability by altering supply of & demand for investible funds in the economy.

Modern deficit financing has also included bail-out packages offered by central governments to specific sectors (industries within them) in the form of easy loans to infuse more capital into them to prevent them from going bankrupt in a recession. Fiscal deficit upper limits set at the time of annual budget presentations are routinely breached due to such license enjoyed by governments. In addition, there are numerous instances of off-balance sheet borrowings by public sector entities which remain hidden from the fiscal deficit accounting process. Experts caution us that such practices by modern governments erode the credibility of conventional accounting practices of fiscal policy. They also blur the difference between fiscal & monetary policy approaches in macroeconomics.

Activity 15.4

Fiscal policy has proved to be ineffective in certain circumstances specifically in developing nations. Identify the various limitations of fiscal policy which makes it ineffective in certain circumstances.

Answer:

Activity 15.5

The Union Budget of 2003-2004 has predicted a huge deficit of ₹ 153637 crores for the financial year 2003-04 which later accounted for 5.5% of GDP. It has been observed that the fiscal deficit continues to rise year after year. Discuss the problems that are associated with the high fiscal deficit (i.e. net borrowing and liabilities of government) for a developing country like India.

Answer:

15.12 Summary

- Fiscal policy is a strategy framed by the government that directs it in planning the expenditure, revenues and managing the fiscal deficits/surpluses. Fiscal policy helps in checking inflation and plays a major role in economic development.
- The main objectives of fiscal policy are mobilization of resources, economic development and growth, reduction of disparities of income, expansion of employment and price stability.
- There are various efficiency issues which affect growth. The incremental capital output ratio (ICOR) is particularly significant.
- A budget is a financial statement that shows the expected revenues and expenditures of the Government during a particular financial period, usually one year
- A budget deficit arises when the expenditure of the Government is more than its receipts
- When the Government borrows money with a view to meeting the expenses arising out of a budget deficit, the money so borrowed is known as national debt.

- The Union Budget consists of two components namely, Part A: general economic survey and Part B: taxation proposals.
- The limitations of fiscal policy are: lags in fiscal policy, problems in tax policy, burden of public debt, etc.

15.13 Glossary

Automatic stabilizer: Government spending programs which respond to changes in the level of national income in such a way as to offset those changes. For example, unemployment insurance benefits typically rise when the economy enters a recession and decline when prosperity returns.

Budget surplus: Excess of government revenues over government spending the opposite of budget deficit.

Economic development: Economic development is defined as a process of economic transition involving the structural transformation of an economy through industrialization and rising GNP and per capita income.

External debt: This is the amount borrowed by the Government from foreign governments and bodies.

Internal debt: This is the amount borrowed by the Government from within the country.

Liabilities: In general, debts owed by individuals or firms. In the case of commercial banks, their liabilities are largely in the form of what they owe their customers, that is, the total amount of deposits held.

National debt: National debt refers to the amount borrowed by the Government to meet expenditures that arise out of the deficit in the union budget.

15.14 Self-Assessment Test

1. What are the objectives of fiscal policy? Discuss them in detail.
2. What is the role of fiscal policy in economic growth?
3. What is fiscal policy? Discuss the tools of fiscal policy in boosting aggregate demand.

15.15 Suggested Reading/Reference Material

1. H.L.Ahuja. Principles of Microeconomics. 22nd edition, S.Chand Publishing, 2019
2. Dwivedi D.N., "Microeconomic Theory and Applications", 3rd edition, Vikas Publishing House, New Delhi, 2016
3. H.R. Appannaiah. Essentials of Managerial Economics. 3rd edition. Himalaya Publishing House, 2021
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9. V.K.Puri and S.K.Mishra. Indian Economy. 38th edition. Himalaya Publishing House, 2021

Additional References:

1. RBI. Handbook of Statistics on Indian Economy. 2020 https://www.rbi.org.in/scripts/AnnualPublications.aspx?head=Handbook%20of%20Statistics%20on%20Indian%20Economy
2. World Bank open knowledge repository. India Development Update. 2020. https://openknowledge.worldbank.org/bitstream/handle/10986/34367/India-Development-Update.pdf?sequence=1&isAllowed=y
3. IMF Working Paper. Make in India: Which exports can drive the next wave of Growth? 2016.

15.16 Answers to Check Your Progress Questions

15.16.1 Model Answers to Check Your Progress Questions

Following are the model answers to the Check Your Progress questions given in the Unit

1. **(a) Fiscal policy is a policy under which the government uses its expenditure and revenue programs to produce desirable effects and avoid undesirable effects on national income, production and employment**

   Fiscal policy refers to the policies followed by the government of a country to mobilize resources in a productive way and through this achieve economic growth, reduce unemployment and attain equilibrium in balance of payment.

2. **(d) Fixing bank interest rates**

   Fiscal policy refers to the policies followed by the government of a country to mobilize resources in a productive way and through this achieve economic growth, reduce unemployment and attain equilibrium in balance of payment. To achieve these objectives the government can increase/decrease public expenditure, public borrowing or tax. Monetary policies are under the purview of the monetary authorities.

3. (a) They are taxed at the retail or wholesale level

Indirect taxes are taxes levied on goods and services where the burden of taxation falls indirectly on the individual, e.g. sales tax. An increase in sales tax may not initially increases the burden for the common man, but later the wholesaler will pass the burden on to the retailer and finally, to the consumers by increasing the price of the goods.

4. (a) Increase in government expenditure

When the economy is facing a recession, and investors take a pessimistic view of investment, government should increase its expenditure by starting new projects, reduce tax rates, etc. This will increase the money supply in the economy, and lead to increase in employment opportunities and aggregate demand.

5. (a) Increase public expenditure

When the economy is in depression, private entrepreneurs are hesitant to invest. In this situation, the government should inject new money in the economy by increasing public expenditure.

6. (a) Expansionary fiscal policy

When the economy is facing a recessionary gap, the private investors in the economy hesitate to invest in the economy. To overcome such a situation, the government should concentrate on expansionary policies which increase the aggregate demand by reducing taxes and/or by increasing spending.

7. (b) Discretionary fiscal policy

This policy is undertaken mainly in developing countries to promote the economic development of the country.

8. (d) Increase in interest rates

Automatic stabilizers are the changes in the government expenditure program or tax that automatically increase or decrease when the economy is facing a recession or inflation. When the economy is facing a recession, there will automatically be an increase in government expenditure and a reduction in the tax rate.

9. (a) Deficit budget

Increase in government spending would result in the creation of more employment opportunities. Thus, people would have more disposable income, resulting in creation of demand and rise in prices.

Unit 16

Banking and Money Supply

Structure

16.1 Introduction

In the previous unit we discussed about the problem of inflation, how to measure it and how to tackle it. This unit is about the role of financial system in an economy.

Savings and investments play an important role in the development of an economy, as they bring about an increase in the output of goods and services. Savings, which are usually a result of a rise in income, can be used for productive purposes with the help of a financial intermediary or institution. This institution/intermediary is a part of a larger financial system.

A financial system can be defined as a set of institutions, instruments and markets which fosters savings and channels them to their most efficient uses. An efficient financial system mobilizes savings and gives it to those who will put it to good use.

Financial markets, institutions and instruments are engines of economic growth. A well-functioning financial market is the primary requisite for a healthy financial system. Banks play a major role in encouraging people to make savings. Therefore a banking system with strong fundamentals is crucial for the development of the economy.

This unit will discuss about the banking system, the concept of money supply, the creation of money supply in an economy, components of money supply and equilibrium in the money market.

Before studying this unit student should recall the concept of aggregate demand and aggregate supply (Unit 13), monetary policy (Unit 16) and inflation (Unit 17).

16.2 Objectives

By the end of this unit, students should be able to:

- Discuss money supply and its components
- Explain the process of creation of money
- Analyze the role of the banking system in creation of money supply in an economy

16.3 Indian Financial System

The Indian financial system can be broadly classified into

- The organized sector - The organized financial system comprises of the following subsystems: the banking system, the cooperative system and the development banking system.
- The unorganized sector - It includes moneylenders, indigenous bankers, money lending pawn brokers, investment companies, chit funds, etc.

Another type of classification is

- Users of financial services - Offer their services to households, businesses and the government, who use these financial services.
- The providers of such services. Financial institutions like private sector banks like Yes Bank, ICICI Bank, HDFC Bank etc. and public sector banks like SBI, Union Bank of India.

The financial system includes financial markets consisting the money market and the capital market.

- The money market which is also called the credit market is the center point for dealings in monetary assets.
- The capital market consists of primary and secondary markets.
  - ✓ The primary market takes care of new issues of instruments like shares and debentures, while the secondary market provides a continuous market for securities already issued, to be bought and sold through stock exchanges and over the counter trades.

16.4 The Functions of Banks

In the earlier topic we identified financial institutions as a component of financial system. These financial institutions are banks – cooperative banks – development banks.

Let us discuss what the functions of these banks are.

Banks also play an important role in the development of the economy. The Banking Regulation Act of India, 1949, defines banking as “accepting, for the purpose of lending or investment, of deposits of money from the public, repayable on demand or otherwise and withdrawable by cheques, draft, and order or otherwise.”

In addition, banks also transfer money - both domestic and foreign - from one place to another. This activity is generally known as “remittance business”. The foreign exchange business commonly known as forex is largely a part of remittance, though it involves the buying and selling of foreign currencies. The Negotiable Instruments Act of 1881 governs banking activities in India.

Banking definition describes “accepting deposits for the purpose of lending and investments”.

Let us discuss this concept in detail.

16.4.1 Accepting deposits

Accepting deposits is one of the two major activities of banks. Banks are also called custodians of public money. Banks accept deposits and keep the money safe. They lend this money to the people who need it and earn interest on the loans.

16.4.2 Lending money

The banks lend the money kept with them by the public to others and earn interest on the loans. Thus, banks act as intermediaries between the people who have the money to lend and those who need money for investments in business or other purposes. The difference between the interest rate on deposits and on loans is called the “spread”.

16.4.3 Classification of loans

Depending on the activity being financed, bank loans are classified as priority sector loans and commercial sector loans.

Priority sector loans: Under instructions from the Government of India, the RBI makes it mandatory for banks to ensure that a certain percentage of the money they lend goes to sectors which do not have an organized lending market or cannot afford to pay interest at the commercial rate. This type of lending is called as priority sector lending. The categories under priority sector lending are:

i. Agriculture
ii. Micro, Small and Medium Enterprises
iii. Export Credit
iv. Education
v. Housing
vi. Social Infrastructure
vii. Renewable Energy
viii. Others

Commercial lending: It is through commercial lending that banks earn profits. After the reforms in the financial sector, the focus has shifted from priority sector lending to “commercial lending”.

16.4.4 Remittance business

Another business that earns profits for banks is the transfer of money, both domestic and foreign, from one place to another. Banks issue demand drafts and banker's cheques for transferring the money.

Check Your Progress - 1

1. Which of the following is the primary function of the financial system?
   a. Provide loans to business sector
   b. Fosters savings and channels them to their most efficient uses
   c. Provide facilities for saving to common people
   d. Creation of credit

2 Bank's earn profit through.
   a. Accepting deposits
   b. Priority sector loans
   c. Commercial lending
   d. Remittance business

3. Which of the following is the primary function of the financial system?
   a. Provide loans to business sector
   b. Fosters savings and channels them to their most efficient uses
   c. Provide facilities for saving to common people
   d. Creation of credit

16.5 Money Supply and Components of Money Supply

Monetary policy deals with supply of money in the economy, with the broad aim of regulating its growth so as to control the rate of inflation. The functions of money can be summarized as follows: it is a medium of exchange, a unit of account, a standard of deferred payment and a store of value.

Most modern nations use "fiat money", which has little or no intrinsic value. People use fiat money because they know it can be used to purchase real goods and services. The government designates the currency as "legal tender", acceptable for the payment of debts.

Before we delve into the components of money supply, it is important to understand certain concepts with which the Central Bank of our country regulates the money supply in the economy.

a) **Cash Reserve Ratio** (CRR): Each Commercial bank has to keep a certain percentage of its total deposits with RBI as cash reserves. From time to time RBI fixes this CRR. As on the 7th of October, 2021, the CRR is at 4.00%

b) **Required Reserve Ratio** (RR_r): It refers to that proportion of bank deposits that the commercial banks are required to keep in the form of cash with them to ensure liquidity. This concept is used in US economy.

c) **Excess Reserves:** These are cash held by commercial banks in excess of a reserve requirement set by the central bank. In other words, ER = (1-RR_r)

d) **Statutory Liquidity Ratio** (SLR): It is the amount of liquid assets or other approved securities that a financial institution must maintain as reserves other than the cash. As on October 7th, 2021 the SLR is at 18%.

e) **High Powered Money:** is the sum of commercial bank reserves and currency (banknotes and coins) held by the public. It is the base for the expansion of bank deposits and creation of the money supply.

f) **Money multiplier:** It is a measure that represents the maximum extent to which money supply is effected due to money creating capacity of commercial banks. Money multiplier = 1/Required Reserve Ratio

Money supply in an economy consists of several components. The various components of money supply in the Indian economy are:

The measures of monetary aggregates

Since July 1935, RBI has been compiling and disseminating monetary statistics. Till 1966-67, the concept of money supply as compiled by the RBI was the sum of the currency available with the public and the demand deposits with the banking system. This is referred to as narrow money and is represented as M1.

From 1967-68 onwards, a broader measure of money supply called the "Aggregate Monetary Resources (AMR)" was additionally published by RBI. This was referred to as "broad money" and was the sum of M1 and time deposits with commercial banks. From April 1977, following the recommendations of the Second Working Group on Money Supply, the RBI has been publishing data on four alternative measures of money supply denoted by M1, M2, M3 and M4 besides the concept of reserve money.

Let us learn about these four aggregates.

M1 – Comprises of currency notes and coins with the people plus demand deposits of banks plus other deposits of the RBI

M2 – M1 plus Post office Savings Bank deposits

M3 – M1 Plus net time deposits with the banking system (this is equivalent to the broad money or AMR which we learnt previously.

M4 – This Includes M3 plus total post office savings bank deposits (excluding National Savings Certificates)

The RBI considers these four measures of money supply as representing different degrees of Liquidity. It has specified them in the descending order of liquidity with M1 being the most liquid and M4 being the least liquid of the four measures.

Following the recommendations of the Working Group on Money in 1998, RBI Started publishing a set of four new monetary aggregates on the basis of the balance sheet of the banking sector in conformity with the norms of progressive liquidity. The new monetary aggregates are:

Reserve Money (M_0) – Currency in circulation plus Bankers' deposits with RBI plus other deposits with the RBI

NM_1 – Currency with the public plus demand deposits with the banking system plus other deposits with RBI

NM_2 – NM1 plus short term deposits of residents (one year maturity period or less)

NM_3 – NM 2 plus long term deposits of residents plus call/term funding from financial institutions.

The Table below gives Reserve money as on Oct 1, 2021

ITEM	Outstanding as on		Year-on-year			
	2021	2021	2020		2021	
	Mar 31	Oct 1	Amount	%	Amount	%
Components (i+ii+iii)						
i) Currency in Circulation	2,853,763	2,917,474	474,196	21.5	237,431	8.9
ii) Bankers' Deposits with RBI	698,867	691,926	-102,300	-17.3	201,872	41.2
iii)`Other' Deposits with RBI	47,351	48,038	9,512	27.2	3,578	8.0
Reserve Money	**3,599,981**	**3,657,439**	**381,408**	**13.5**	**442,881**	**13.8**

https://rbi.org.in/Scripts/BS_PressReleaseDisplay.aspx?prid=52358

Among all these four concepts, narrow money (M_1) and broad money (M_3) are the two concepts that are most commonly used by monetary authorities and academicians.

In developing countries, there are essentially two main approaches to determine the money stock - the money multiplier approach and the balance sheet or structural approach. The money multiplier approach focuses on the relationship between the money stock and reserve money, while the structural approach focuses on the analysis of individual components in the balance sheet of the consolidated monetary sector.

16.5.1 The money multiplier approach

Before coming to the nominal money stock let us at first analyze in detail the balance sheet of the RBI. This will give us an insight of its monetary liabilities, since these liabilities are created in the process of generating matching assets by the RBI. With respect to the RBI Balance Sheet it is to be noted that the dated securities of the Central Government include marketable securities, special securities, special non-interest bearing securities, and gold bonds.

The deposits of the commercial banks comprise of the balances maintained by the banks with the RBI. This is to ensure that the commercial banks can meet all demands for withdrawals on the part of their depositors. The banks may also choose to hold reserves over and above the statutory minimum, known as the 'excess reserves'. The commercial banks are required to maintain with the RBI a minimum of cash reserve (CRR). RBI can vary the CRR between 3% and 15%.

Again the Central Government also issues money in the form of one-rupee notes, coins and small coins. The RBI currency together with the Government money with the commercial banks is treated as 'Vault Cash'. The RBI money together with the Government money constitutes the monetary base which is known as 'High Powered Money'.

i.e., High Powered Money (H) =Monetary liabilities of the RBI + Government money (GM)

= Currency with the public (C) + Reserves (R) + Other Deposits with the RBI = C + R ...eqn no.(1)

Neglecting the other deposits with the RBI

where, Reserves (R)=Vault Cash (RR_r)+ Banks' Deposits with the RBI (CRR) + ER = Statutory reserves (RR_r + CRR)+ Excess reserves(ER)…. eqn.no.(2)

Since the volume of Government money (GM) is negligible, bulk of the High Powered Money is constituted of the monetary liabilities of the RBI.

Coming to the fundamental equation of Balance Sheet Identity, we have:

RBI Assets = RBI Liabilities

or $(FA)_{RBI} + (OA)_{RBI} = (ML)_{RBI} + (NML)_{RBI}$ …. eqn. no.(18.3)

or, $(FA)_{RBI} + (OA)_{RBI} - (NML)_{RBI} = (ML)_{RBI}$….eqn.no.(18.4)

Let us define Net Non-Monetary Liabilities (NNML) of the RBI as follows:

$(NNML)_{RBI} = (NML)_{RBI} - (OA)_{RBI}$ …. eqn.no. (18.5)

So, from the equations (18.3) and (18.5), we have:

$(ML)_{RBI} = (FA)_{RBI} - (NNML)_{RBI}$ .....eqn. no.(18.6)

Now, we have:

A change in H = A change in (ML) + A change in GM

or, $\cap H = \cap (ML)_{RBI} + \cap GM$

or, $\cap H \cong \cap (ML)_{RBI}$,

as we have considered the volume of Government money to be negligible.

or, $\cap H \cong (\cap ML) = \cap (FA)_{RBI} - \cap (NNML)_{RBI}$ ....eqn. no. (18.7)

In its simplest form the money multiplier approach is based on the following equation:

$$M^s = m.H \quad \text{... eqn. no. (18.8)}$$

where m is the money multiplier and M^s is the broad money (M_3) . Let us now determine the value of the money multiplier m.

As we know, M_3 is the sum of currency held by the public (C), demand deposits with the commercial banks (DD) and the time deposits with the banks (TD).

or, $M_3 = C + DD + TD$ ... eqn. no. (18.9)

From eqn. (18.8) we have:

$m = M_3/H$

$$= \frac{C + DD + TD}{C + R}$$ from equations (18.1) and (18.9)

$$= \frac{C + DD + TD}{C + (DD + TD)r}$$

where R = (DD + TD)r

and $r = \text{Reserve Ratio} = \frac{R}{DD + TD}$

Dividing the numerator and denominator by DD we have:

$$m = \frac{1 + C/DD + TD/DD}{C/DD + r(1 + TD/DD)}$$

$$= \frac{1 + c + t}{c + r(1 + t)}$$

$$\text{where, } c = \frac{C}{DD} \text{ and } t = \frac{TD}{DD}$$

or,

When you consider M_1, the multiplier can be computed in the following manner:

$M_1 = C+DD$
and, $R = r.DD$
or, $r = R/DD$

In this case, the value of money multiplier boils down to:

$$m = \frac{C + DD}{C + R}$$

or, $$m = \frac{1 + C/DD}{C/DD + r(DD/DD)}$$

or, $$m = \frac{c+1}{c+r}$$

It may be noted that variations in the money multiplier are related to three key ratios c, t and r. These are called the proximate determinants and not the ultimate determinants of money supply because the ratios, c and t, are themselves behavioral in character. This amounts to saying that the proximate determinants provide a basis from which the simultaneous interactions of the various forces determining the money multiplier, can be observed.

Using the above expressions [i.e. with and without considering the influence of time deposits with the commercial banks (TD)] of the money multipliers the basic algebraic equations of broad money can be written as:

$$M^S = \frac{1+c+t}{c+r(1+t)}.H \text{ (considering the influence of TD)}$$

$$M^S = \frac{1+c}{c+r}.H \text{ (without the influence of TD)}$$

What happens to money multiplier if banks would like to hold reserves more than the required reserves R? Assuming the excess reserves to be E, and excess reserves/DD ratio to be 'e'

$$m = \frac{(1+c)}{(r+c+e)}$$

and $$M^S = \frac{(1+c)}{(r+c+e)}.H$$

16.5.2 The balance sheet approach or the structural approach

This approach is based on the balance sheet of the consolidated banking sector rather than of the RBI as in the money multiplier approach. Since the broad money (M3) comprises of the monetary liabilities of the consolidated banking sector, it follows from the asset side that:

M_3 = Net Bank credit to the Governments (both Center & State)

+ Bank Credit to the Commercial Sector

+ Net Foreign Exchange Assets of Banking Sector

+ Government Currency Liabilities to the Public

– Net Non-monetary liabilities of the Banking Sector

(NNML consists of NMLs in excess of 'Other Assets')

The essence of the balance sheet approach lies in the examination of variations in the money stock through analysis of credit creation by the consolidated banking system, movements in the foreign exchange asset holding and so on.

16.5.3 Numerical Example

The monetary liabilities of a central bank are 20000 units, government money is 7000 units, and currency deposit ratio is 0.5. The money supply target is 50000 units. What is the reserve ratio?

High powered money (H) = monetary liabilities of central bank+ government money

= 20000+7000 = 27000

Money supply (M) = 50000 and currency deposit ratio (Cu) = 0.5.

Let r is the reserve ratio

M = H (1+Cu/Cu+r)

=> M x (Cu+r) = H (1+Cu)

=> 50000 x (0.5 x r) = 27000 (1+ 0.5)

=> 50000 r = 40500 -25000

=> r = 15500/50000 = 0.31

Exercises

A. What is the money supply in the economy, if the required reserve ratio is 5%? (assume high powered money (H) is 80MCU)

   a. 400
   b. 1600
   c. 4000
   d. 160

B. In an economy, if high powered money stock is equal to ₹ 10,000, CRR is 0.3 and the currency deposit ratio is 0.7. What is the money supply in economy?

   a ₹ 17,000
   b ₹ 10,000
   c ₹ 7,000
   d ₹ 3,000

C. In an economy the currency with the public is ₹ 4,200 crore and the bank reserves are ₹ 1200 crore. The currency deposit ratio is 0.42 and the reserve

ratio imposed by the bank is 0.12. Find the amount of money supply in the economy.

a. ₹ 2,054 crores

b. ₹ 11,045 crores

c. ₹ 2,300 crores

d. ₹ 14,200 crores

D. Assume that the currency in circulation is ₹ 500, demand deposits in banks are ₹ 250, other deposits in the central bank are ₹ 150, and post office savings deposits are ₹ 350 (All figures are in crores). Determine M_1.

a. ₹ 750 crore

b. ₹ 650 crore

c. ₹ 900 crore

d. ₹ 1,250 crore

E. Assume that M_1 for an economy is ₹ 1500, demand deposits in banks are ₹ 350, other deposits with the RBI are ₹ 250, post office savings deposits are ₹ 250, and time deposits in banks are ₹ 200 (all figures are in crores). The currency in circulation is_____.

a. ₹ 700 crore

b. ₹ 650 crore

c. ₹ 450 crore

d. ₹ 900 crore

F. Assume that M_1 is ₹ 1500 crore, M_2 is ₹ 1800 crore, post office savings bank deposits are ₹ 300 crore, and time deposits in banks are ₹ 250 crore. Determine the value of M_3.

a. ₹ 3300 crore

b. ₹ 1800 crore

c. ₹ 2100 crore

d. ₹ 1750 crore

Check Your Progress - 2

4. Which of the following approaches focuses on the relationship between the money stock and the reserve money in an economy?

a. Money multiplier approach

b. Multiplier approach

c. Balance sheet approach

d. Structural approach

5. _____ is the total of RBI currency along with the government money with the commercial banks.
   a. Broad money
   b. Narrow money
   c. Vault cash
   d. High powered money
6. If the currency deposit ratio is constant and reserve ratio increases, then the money multiplier _____.
   a. Increases
   b. Decreases
   c. Decreases more than proportionately to the increase in reserve ratio
   d. Decreases less than proportionately to the increase in the reserve ratio
7. If Cu represents the currency deposit ratio and r represents the reserve ratio, which of the following equations represents the money multiplier?
   a. (1 + Cu) / (r + Cu)
   b. (1 - Cu) / (r + Cu)
   c. (1 + Cu) / r
   d. (1 + Cu) / (r – Cu)

16.6 Creation of Money and Banking System

Changes in money supply arise out of the action of the treasury, the Central Bank, i.e. the Reserve Bank of India and the commercial banks. They acquire assets of various kinds, and issue in payment liabilities on debts, payable on demand, that are in monetary form and readily and generally acceptable in the settlement of debts and payments. Thus, money supply, in reality, consists of debts of the money creating agencies.

The RBI is mainly constituted as an apex authority for monetary management. The basic function of RBI is to 'regulate the issue of bank notes and the keeping of reserves with a view to securing monetary stability in India and generally to operate the currency and credit system of the country to its advantage.'

The commercial banks are creators of the largest element of the money supply, namely, demand deposits. The treasury issues notes of small denominations i.e. one rupee notes.

The balance sheet contains particulars of a bank's current assets and current liabilities. The balance sheet indicates the manner in which the bank has raised funds and invested them in various kinds of assets. The liabilities of the bank are the items which are to be paid by it either to its shareholders or depositors. The

assets are those items from which it hopes to get an income and thus includes all the amounts owed by others to the bank. The liabilities of the bank show how the bank raises its funds. Every bank gets its funds in four ways: share capital, reserve fund, deposits from the general public and borrowings from reserve bank, other commercial banks and financial institutions.

Share capital is the contribution made by the shareholders and the reserve fund is the amount accumulated over years out of undistributed profits. Deposits are accepted by the bank in current, fixed, and savings accounts and they are accordingly, categorized as demand, time and saving deposits.

The assets side of the balance sheet indicates the manner in which funds entrusted to the bank are deployed. The bank holds a small proportion of total deposits in the form of cash reserves. Cash reserves include cash with bank and cash held either with other commercial banks or with the Central Bank. Money at call and short notice pertains to short-term loans to the money market which can be called back by the bank at a very short notice of one to seven days. Bills discounted is that part of the bank funds which is used to discount the commercial bills and also treasury bills. The bank also makes loans and advances to its customers.

One of the major functions of banking activity is lending. In other words, creation of credit is a major function of a commercial bank. Let us discuss this concept in detail.

What happens when banks accept deposits?

A commercial bank has to fulfill two legal requirements:

(1) It must satisfy the cash reserve requirement and

(2) It must meet statutory liquidity requirement.

Every commercial bank must keep on deposit with the Reserve Bank funds equal to a specified percentage of its own deposit liabilities. The specified percentage is the Cash Reserve Ratio (CRR). In addition to CRR, the bank has to meet the statutory liquidity requirements i.e. it has to maintain liquid assets which are not less than a specified percentage of outstanding deposit liabilities.

Banking system can lend the funds after maintaining the statutory reserves CRR and SLR.

It means when banks receive an initial increase in their reserves, they utilize it for lending purposes or for buying securities or both.

The persons who receive funds from banks, receives credit from bank in the form of demand deposits. The beneficiary of the credit may hold all the proceeds in the form of demand deposits in the same bank or in any other bank. Another alternative is he may hold a part in the form of additional currency outside the banking system.

This transaction creates additional supply of money into the financial system. We deal with the concept of money supply in detail in the next session.

The beneficiary of the credit can spend the proceeds of the loan for different purposes:

- Hold as deposits in banks and outside the banking system
- Purchase financial assets.

If all the proceeds continue to be held as demand deposits in the banks, the banks have to increase their reserves – CRR and SLR and the balance amount may be lent to the others. This process continues. Increase in money supply then depends on the size of the total reserve requirement (i.e. cash reserve ratio with the RBI and statutory liquid ratio). On the other hand, money expansion will be restricted if some of the proceeds are taken in the form of currency and held outside the banking system.

16.6.1 Credit creation

Creation of credit is a major function of a commercial bank. When a bank creates credit or advances loans, there tends to be a multiple expansion of credit in the banking system. A commercial bank has to fulfill two legal requirements: (1) it must satisfy the cash reserve requirement and (2) it must meet statutory liquidity requirement. Every commercial bank must keep on deposit with the Reserve Bank funds equal to a specified percentage of its own deposit liabilities. The specified percentage is the Cash Reserve Ratio (CRR). In addition to CRR, the banks has to meet the statutory liquidity requirements i.e. it has to maintain liquid assets which are not less than a specified percentage of outstanding deposit liabilities. The rationale underlying the requirement of CRR and SLR is to gain control.

16.6.2 Multiple expansion

We have seen that a single bank in a banking system can lend with its excess reserves. When banks receive an initial increase in their reserves, they utilize it for lending purposes or for buying securities or both. The persons who receive funds from banks will receive in the form of demand deposits. Whatever may be the form in which the proceeds are initially received, can be changed by the public. They may prefer to hold all the proceeds in the form of demand deposits or they may hold a part in the form of additional currency outside the banking system. The extent of the money supply creation will be affected substantially by the public's choices as to the forms and propositions in which it will hold the proceeds from banks' new loans and security purchases.

If all the proceeds continue to be held as demand deposits, the entire initial increase of reserves remains in the banks to serve as a basis for additional demand deposits. Increase in money supply then depends on the size of the total reserve requirement (i.e. cash reserve ratio with the RBI and statutory liquid ratio). On the other hand, money expansion will be restricted if some of the proceeds are taken in the form of currency and held outside the banking system.

Exhibit 16.1 showcases the balance sheet of SBI Bank as an example of the balance sheet of a bank

Exhibit 16.1: State Bank of India
Balance Sheet as at 31st March, 2021

(000s omitted)

	Schedule No.	As at 31.03.2021 (Current Year) ₹	As at 31.03.2020 (Previous Year) ₹
CAPITAL AND LIABILITIES			
Capital	1	892,46,12	892,46,12
Reserves & Surplus	2	252982,72,85	231114,96,63
Deposits	3	3681277,07,96	3241620,73,43
Borrowings	4	417297,69,88	314655,65,21
Other Liabilities and Provisions	5	181979,66,31	163110,10,41
TOTAL		**4534429,63,12**	**3951393,91,80**
ASSETS			
Cash and Balances with Reserve Bank of India	6	213201,53,63	166735,77,90
Balances with Banks and money at call and short notice	7	129837,17,31	84361,22,64
Investments	8	1351705,20,51	1046954,51,75
Advances	9	2449497,79,11	2325289,56,07
Fixed assets	10	38419,24,19	38439,28,18
Other Assets	11	351768,68,37	289613,55,26
TOTAL		**4534429,63,12**	**3951393,91,80**
Continent Liabilities	12	1706949,91,17	1214994,60,69
Bills for Collection	-	56516,11,88	55758,16,19
Significant Accounting Policies	17		
Notes to Accounts	18		

Schedules referred to above form an integral part of the Balance Sheet.

Source: https://bank.sbi/corporate/AR2021/assets/PDF/English/16-State%20Bank%20of%20India(Standalone).pdf

16.7 Equilibrium in Money Markets

The money markets will be in equilibrium when the quantity of real balances demanded equals the quantity supplied. The real money supply is the nominal money supply divided by the price level. The Central Bank controls the nominal money supply. The Central Bank could be assumed to control the real money supply if, for theoretical purposes, we assume the prices of goods to be fixed. The nominal money supply i.e., currency with public and deposit money with public equals the monetary base or high powered money (i.e. currency plus commercial banks' deposits at the bank) multiplied by the money multiplier.

Demand for money is the demand for real money balances. The quantity of real money demanded increases with the level of real income but decreases with the level of nominal interest rates.

To induce people to hold more bonds, suppliers of bonds must offer a higher interest rate. As the interest rate rises, people switch out of money and into bonds. The higher interest rate reduces both the excess supply of bonds and the excess demand for money. At the interest rate r_0 the supply and demand for money are equal. Since the excess demand for money is zero, the excess supply of bonds is also zero. The money market is in equilibrium only when the bond market is also in equilibrium. People wish to divide their wealth in precisely the ratio of the relative supplies of money and bonds.

A shift in either the supply curve for money or the demand curve for money will alter the equilibrium position in the money market (and the bond market).

16.7.1 Financial development

A well developed financial system is very essential for the smooth functioning of any economy. One set of important statistical indicators that is used to look at the financial development of a country is financial development ratios.

An economy can be broadly divided into financial and non-financial sectors. Financial sector consists of banks and other financial institutions. Non-financial sector consists of household sector, private corporate business, government and the rest of the world.

Flow of funds can take place in two forms. One is that the surplus and deficit spenders can interact directly. That is deficit spenders directly borrow from surplus spenders by issuing claims on themselves. The other form is through financial intermediation. Here financial intermediaries mobilize the funds from surplus spenders and lend them to deficit spenders.

The claims issued in an economy can be classified into primary or secondary issues. Primary issues are claims issued by deficit spenders directly to the surplus spenders. Primary issues are also called new issues. Secondary issues are claims issued by financial sector. Total issues in an economy consist of both primary and secondary issues.

Volumes of these financial flows can be used to define various ratios of financial development. These ratios are (i) Finance ratio, (ii) Financial interrelations Ratio, (iii) New issue ratio and (iv) Intermediation ratio.

Finance ratio (FR): It is defined as the ratio of total financial claims issued during the year to national income of that year.

Financial interrelations ratio (FIR): FIR is the ratio of financial claims issued to net physical capital formation. This captures the relation between financial development and the growth of physical investment.

New issue ratio (NIR): NIR is the ratio of primary (new) issues by the non-financial sector to the net physical capital formation. This is a measure of 'financial disintermediation'. This indicates the extent to which non-financial sectors are financing their investment by borrowing directly from the ultimate savers rather than through the financial intermediaries.

Intermediation ratio (IR): This is the ratio of secondary issues to primary issues i.e. claims issued by financial institutions to issues of non-financial sectors. This indicates the degree of financial intermediation.

16.7.2 Numerical Example

In an economy, primary issues are 200 and secondary issues are 90. The finance ratio is 0.2. What is the national income of the economy?

Financial ratio is the ratio of total financial claims issued during the year to national income of that year.

Total issues = 200+90+290 and Finance ratio = 0.2

Finance ratio = Total issues/ national income

=> 0.2 = 290/ national income => National income = 290/0.2 = 1450

Exercises

G. In an economy Primary Issues are 100, Secondary Issues are 80 and National Income is 1800. The Finance Ratio is
   a. 0.04
   b. 0.05
   c. 0.10
   d. 0.11

H. If primary issues are equal to 110, secondary issues are equal to 150 and national income is 18000, what is the finance ratio?
   a. 0. 01
   b. 0.06
   c. 0.14
   d. 0.11

Activity 16.1

"Cashless society" is likely to be a reality of tomorrow. What effects will this have on the banking industry and society in general?

Answer:

16.8 Summary

- A financial system can be defined as a set of institutions, instruments and markets which fosters savings and channels them to their most efficient uses.
- The Indian financial system can be broadly classified into the organized sector and the unorganized sector.
- Banking can be defined as accepting, for the purpose of lending or investment, of deposits of money from the public, repayable on demand or otherwise and withdrawable by cheques, draft, order or otherwise.
- The concept of money supply as compiled by the RBI was the sum of currency with the public and demand deposits with the banking system. This is also called as 'narrow money' and represented as M_1. The Aggregate Monetary Resources (AMR), which is equivalent to the sum of M_1 and the time deposits with the commercial banks is called as 'broad money'.
- Changes in money supply arise out of the action of the treasury, the Central Bank, i.e. the Reserve Bank of India and the commercial banks.
- The money markets will be in equilibrium when the quantity of real balances demanded equals the quantity supplied.

16.9 Glossary

Broad money: A measure of the money supply (also known as M_2) that includes transactions money (or M_1) as well as savings accounts in banks and similar assets that are very close substitutes for transactions money.

Excess reserves: The difference between the amount of cash a bank wishes or is required to hold in relation to its deposit liabilities and the amount it actually holds.

High powered money: The monetary base, or the total of currency in circulation and commercial bank deposits with the central bank.

Money market: A term denoting the set of instructions that handle the purchase or sale of short-term credit instruments like Treasury bills and commercial paper.

Money multiplier: The ratio of the increase in the money supply (or in deposits) to the increase in bank reserves.

16.10 Self-Assessment Test

1. Discuss the components of money supply.
2. How equilibrium in money market is reached?
3. A well-developed financial system is very essential for the smooth functioning of any economy. One set of important statistical indicators that is used to look at the financial development of a country is financial development ratios. Discuss the various ratios of financial development.

16.11 Suggested Reading/Reference Material

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Additional References:

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3. IMF Working Paper. Make in India: Which exports can drive the next wave of Growth? 2016.

16.12 Answers to Check Your Progress Questions

16.12.1 Model Answers to Check Your Progress Questions

Following are the model answers to the Check Your Progress questions given in the Unit.

1. (b) Fosters savings and channels them to their most efficient uses

A financial system can be defined as a set of institutions and markets which foster savings and channel them to their most efficient uses.

2. (c) Commercial lending

It is through commercial lending that banks earn profits. After the reforms in the financial sector, the focus has shifted from priority sector lending to "commercial lending".

3. (b) Fosters savings and channels them to their most efficient uses

This is the primary function of the financial system

4. (a) Money multiplier approach

The two main approaches to determine the money stock are - the money multiplier approach and the balance sheet or structural approach. The money multiplier approach focuses on the relationship between the money stock and reserve money, while the structural approach focuses on the analysis of individual components in the balance sheet of the consolidated monetary sector.

5. (c) Vault cash

In addition to the currency issued by the RBI, the central government also issues money in form of one-rupee notes, coins and small coins. The sum of the currency issued by the RBI and the government money with the commercial banks is known as vault cash.

6. (d) Decreases less than proportionately to the increase in the reserve ratio

Money multiplier can be arrived by using the formula, (1+ c) / (c+r), where c and r represents currency deposit ratio and reserve ratio. Hence if the c remains constant, and r increases, the money multiplier would decrease less than proportionately to the increase in the reserve ratio

7. (a) (1 + Cu) / (r + Cu)

Money multiplier is the ratio of the increase in the money supply to the increase in the bank reserves. Generally, the money–supply multiplier is equal to the inverse of the required reserve ratio.

16.12.2 Model Answers to Exercises

Following are the model answers to the Exercises given in the unit.

A. (b) 1600

Money supply = H x [(1 + Cu)/ (Cu + r)], where H = high-powered money, Cu = currency deposit ratio and r = reserve ratio. Thus, Ms = 80 x [(1 + 0)/ (0 + 0.05)] = 1600.

B. (a) ₹ 17,000

M^s = {(1+c/(c+r)} H

= {(1+0.7)/ (0.3+0.7)}

=1.7 X 10000

=17,000

Here M^s is the money supply

c is the currency deposit ratio

r is the cash reserve ratio.

C. (d) ₹ 14,200 crores

$$\text{Money Supply}(M^s) = \frac{1+c}{c+r}(H)$$

c is currency deposit ratio = 0.42

r = reserve ratio = 0.12

H = High powered money

High powered money = Currency with public + Bank Reserves

= 4,200 + 1,200

H = 5,400 crores

Replacing the values in formula

$$M^s = \frac{1+0.42}{0.42+0.12}(5400)$$

$$= \frac{1.42}{0.54} \times 5400$$

$$= \frac{7668}{0.54} = 14200$$

$M^s = 14,200$

The total money supply in the economy is ₹ 14,200 crores

D. (c) ₹ 900 crore

M_1 = Currency in circulation + Demand Deposits with the Banking System +Other Deposits with the RBI

= 500 +250 +150

= 900

E. (d) ₹ 900 crore

M_1 = Currency in circulation + Demand Deposits with the Banking System + Other Deposits with the RBI

1500 = Currency in circulation + 350 + 250

Currency in circulation = 1500 – 600

Currency in circulation = 900

F. (d) ₹ 1750 crore

$M_3 = M_1$ + Time Deposits with the Banking

M_3 = 1500 + 250

M_3 = 1750

G. (c) 0.10

Finance ratio is the ratio of total financial claims issued during the year to national income of that year.

Therefore, Total issues = 100 +80 = 180

National income = 1800

Finance ratio = 180 / 1800 = 0.10

H. (a) 0. 01

The finance ratio is the ratio of the total financial claims issued during the year to national income.

Total issues in the year = Primary issues + secondary issues

= 110 + 150

= 260

Finance ratio = 260 / 18,000

= 0.0144 or 0.01.

Economics for Managers

Course Components

Block I	**Microeconomics – I**
Unit 1	Introduction to Microeconomics
Unit 2	Theory of Demand and Supply
Unit 3	Consumer Behavior
Unit 4	Production Function
Unit 5	Analysis of Costs
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Unit 6	Perfect Competition
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Unit 8	Rent and Wages
Unit 9	Interest and Profit
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Block III	**Macroeconomics – I**
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Unit 15	Fiscal Policy and Budget Deficit
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Unit 17	Monetary Policy
Unit 18	Inflation
Unit 19	International Trade and Balance of Payments
Unit 20	Economic Indicators
Unit 21	Business Cycles
Unit 22	Economic Growth, Development and Planning