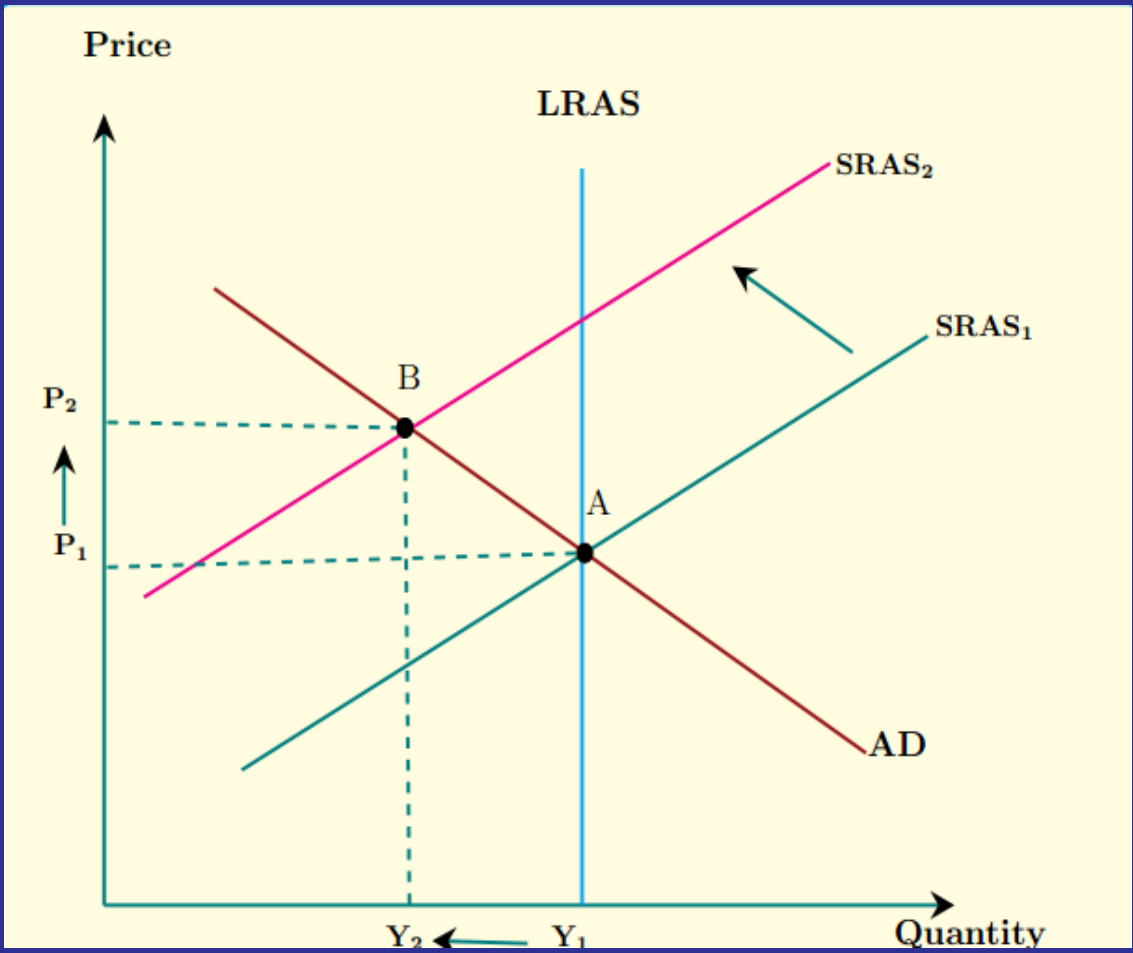
ECONOMICS

DISTANCE MODULE I

GRADE 12



FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA
MINISTRY OF EDUCATION

ECONOMICS

Distance Module I

Grade 12

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Introduction

Economics is an important discipline which has an increased significance in recent years in response to worldwide economic problems. For example, problems like poverty, unemployment, inflation and recession, are worldwide today. Hence, to understand these problems and find solutions, an adequate knowledge of economics is required.

Dear learner, please answer the question "***why is it important to study economics?***" before you read the notes below. We trust you that you do not read the following before trying to answer this question. That is very nice of you! Now, you can read what is written below and compare it with what you have tried in answering the question.

The study of economics is expected to equip you with subject knowledge, understanding, skills, values and attitudes about important questions and issues of economy, society and environment. It will also help you develop competencies to engage in the community as informed and active citizens.

This module is intended to support the learning of economics so that you possess the right tools to understand economic world and how to interpret events that will affect you, either directly or indirectly. Moreover, you will be supported to relate and translate economic concepts to explain economic reality on the ground. You will also be helped to acquire and develop knowledge on what to expect in the future and how to manage your economic decisions.

Finally, as the distance education learner, you need to invest the required time on studying the subject. We expect you to learn at your own pace; we also expect you to learn and cover some portions of the subject within a defined time frame as compulsory requirement.

In line with the above expectations, the student profile and the module contents are presented below.

Student Profile

At the end of ***Grade 12 Economics*** study, you are expected to have better attributes in terms of the following:

Knowledge

- Knowledgeable in subject area (principles, theories, applications, etc.)

Attitude

- Cooperation
- Curiosity
- Motivation to become successful

Digital literacy

- Data collection
- Data analysis
- Data analysis skills and tools
- Report writing

Communication skills

- Group discussion
- Teamwork
- Presentation

Business management skills

- Start one's own business
- Support family business
- Work in government and non-government organizations

By the end of ***Grade 12***, you are expected to exhibit the following profile:

- Continue your education in various disciplines of social and business sciences using your economics knowledge and skills in higher education institutions.
- Demonstrate an appreciation about the link between production, distribution and consumption.
- Articulate contemporary issues in economic growth, and development.
- Participate in collaborative engagements which aim at social and economic development.
- Respect democratic values, rules and regulations.
- Participate in various citizenship activities by recognizing and appreciating cultural aspects (including languages and religions) and livelihood of various places.
- Find solutions to key contemporary issues including unemployment, inflation, and poverty reduction using enquiry skills.
- Articulate the link between poverty and environmental degradation.
- Contribute to efforts that aim at bringing about sustainable development in Ethiopia and beyond.

This module is prepared with a view to meet the growing needs for distance education that cannot be met by traditional school systems. Its benefits include offering access to educational opportunities for people who are unable to go to school to learn face to face (regular program).

With this in mind, this module is prepared to stimulate and sustain your interest in the subject. We aimed to make use of effective communication to support and facilitate your learning and then to assess your progress.

Grade 12 Economics is divided into two modules, each containing 4 units. The first module

is based on theories of macroeconomics and the second deals with the application of macroeconomic theories in real world. ***Module 1*** is intended to be completed in the first semester. The units in ***Module 1*** include:

- Unit 1: The Fundamental Concepts of Macroeconomics
- Unit 2: Aggregate Demand and Aggregate Supply Analysis
- Unit 3: Market Failure and Consumer Protection
- Unit 4: Macroeconomic Policy Instruments

The units in both modules will help you prepare for the national entrance examination.

Resources

The following resources would help you to concretize the issues in different units and sections. They include:

- This distance education module
- Activities and self-test exercises that are listed in this module
- Reference books, some are available on Google Scholar
- ICT tools and emerging technologies including online videos
- ICT digital tools (mobile phones, tablets, etc.) and emerging technologies
- Internet based educational resources including online videos (e.g. YouTube, educational mobile apps)

Module Learning Strategies

As a student of distance education, you may want to space or spread out learning opportunities over time. Try to balance different dimensions of your life, education, family, and other commitments. Examples of some strategies for successful distance learning are listed here under:

1. Cretae a schedule and follow it.
2. Take the time to research questions and involve teachers.
3. Assess the technology used in the course.
4. Utilize alarms and calendars to keep you abreast with deadlines.
5. Appreciate yourself.
6. Take part in distant discussions.
7. Identify clear goals.

Dear learner, please note that these are not the only strategies, but also you can have other strategies of your own too.

Icons in the Module

Throughout each module, you will find the following icons or graphic symbols that alert you to a change in activity within the module. Only the icons that are required are used in each module.

Icon	Meaning	Description
	Text or Reading Material	Provides information about the topics that are covered.
	Self-check	Requests that you double-check your comprehension. If you mark any box under the 'No' column, please look at the corresponding item to the left and go back to your text and read about it.
	Summary	Highlights or provides an overview of the most important points covered.
	Overview	Introduces you to focus on the content that will be discussed.
	Suggested Answers	Indicates the suggested answers for the given exercises
	Objective	Indicates what you should know after completing a section or unit.
	Self-Assessment	Enables you to check your understanding of what you have read and, in some cases, to apply the information presented in the unit to newsituations.
	In text Question	Indicates you that the sentence in the text in question.
	Recall for prior learning	Requires you to focus on the content that will be discussed in a section or unit

How to use this Module?

This module is designed to help you manage your study of economics by yourself in your own time. It requires you to be proactive and efficient in the use of the resources at your disposal. Every unit in the module contains general overview and introduction, learning outcomes, required study time, learning strategies and content sections. In each section, you have also section overview, learning outcomes, resources and the contents followed by self-test exercises and a checklist of things you need to do. Here, checklist refers to a list of things that you must think about, or that you must remember to do. In other words, they are the list of tasks that need to be completed by yourself. Checklists help you create ownership, deadlines, and expectations as to when things will be finished. They ensure that you have a sense of direction and know what you need to do next.

We wish you an effective and a successful mastery of the module. Please, go on reading.

Module Development Team

July 2023

Table of Contents

UNIT 1

THE FUNDAMENTAL CONCEPTS OF MACROECONOMICS

UNIT 2

AGGREGATE DEMAND AND AGGREGATE SUPPLY ANALYSIS

UNIT 3

MARKET FAILURE AND CONSUMER PROTECTION

UNIT 4

MACROECONOMIC POLICY INSTRUMENTS

UNIT 1

THE FUNDAMENTAL CONCEPTS OF MACROECONOMICS

Time Allotted: 14 hours

INTRODUCTION

Dear learner, from earlier reading in ***Grades 9*** to ***11***, you may recall that the subject of economics has many branches, and its scope includes a range of topics and issues. As you may remember, in ***Grade 9***, the concept of macroeconomics was introduced. In ***Grade 12***, we revisit the definition of macroeconomics and its focus areas. Moreover, different schools of thought are discussed to help you identify the reasons for the advancement of macroeconomic analysis.

The unit is divided into three sections. The first section explores and revisits the definition and focus areas of macroeconomics. The second one scrutinises the key challenges of macroeconomics such as economic growth, inflation, unemployment, business cycles and balance of trade. The third section explores the evolution of macroeconomics and different schools of thought.

Unit Learning Outcomes

After completing this unit, you will be able to:

- understand the difference between macroeconomics and microeconomics.
- summarise the focus areas of macroeconomics.
- analyse different challenges of macroeconomics.
- differentiate Classical, Keynesian and Monetarist macroeconomics.
- conceptualize the contribution of different schools of thought for the development of macroeconomics.

Contents of the Unit

Dear learner, we expect you to complete this unit in **14 hours.** Please, assess your progress and performance by referring to the learning outcomes, self-test exercises and checklists of

your understanding. We expect you to learn at your own pace and cover some portions of the subject within a defined time frame as a requirement. We expect you to do this as an active learner! Thank you for doing so!

Learning Strategies

Dear learner, this unit revisits what was covered in earlier grades. It advances your understanding of macroeconomics, macroeconomic goals and different schools of thought. You need to use analytical approaches which are relevant to the unit. In addition to this, developing a sense of history help you grasp the evolution of schools of thought in macroeconomics. You will also come across some of the personalities and their works pertaining to macroeconomics.

Please, use the following and other learning strategies of your own to successfully learn this unit.

1. Create a schedule and follow it.
2. Take the time to research questions and involve teachers.
3. Assess the technology used in the course.
4. Utilize alarms and calendars to keep you abreast with deadlines.
5. Appreciate and value yourself.
6. Take part in distant discussions.
7. Search for different available learning opportunities that will help you to better understand the subject.

Please, write down your own learning strategies in a piece of paper and use them whenever it is necessary.

1.1 Definition and Focus Areas of Macroeconomics Revisited

Overview

Dear learner, this section covers the definition of macroeconomics and its focus areas. The key concepts you need to master include: microeconomics, macroeconomics, macroeconomic goals and variables, GDP, GNP, economic growth, inflation, unemployment, business cycles, and trade balance.

Learning Outcomes

At the end of this unit, you will be able to:

- define macroeconomics.
- summarise the focus areas of macroeconomics.
- outline macroeconomic goals.
- distinguish different macroeconomics variables.

In case if you do not achieve the aforementioned outcomes, you need to re-read the

section to further understand the concepts before proceeding to the next section. We hope by doing so you will improve your understanding.

Key Concepts

- Microeconomics
- Macroeconomics
- GDP
- GNP

Now, please proceed to the detail discussions. We wish you will have good reading time!

1.1.1 Definition of Macroeconomics

Dear learner, please define the terms microeconomics and macroeconomics. We also trust you that you do not rush to read the notes below before you give your own definition. Thank you for doing so!

That is very good! Now, read the notes below and compare your definition with the one given below. Oh, how interesting that is!

Dear learner, do you know that conventionally, economics is divided into microeconomics and macroeconomics? That is good!

Microeconomics studies about the individual decision-making behaviour of different economic units such as households, firms, and governments at a disaggregated level. On the other hand, macroeconomics studies about overall or aggregate behaviour of the economy such as the overall level of output, prices and employment. To put it in simple words, macroeconomics studies what happens to the whole economy or economic system.

Macroeconomics is a relatively new branch of economics that was emerged after the publication of John Maynard Keynes' Book entitled: *The General Theory of Employment, Interest and Money* in 1936.

Broadly speaking, macroeconomics is the study of the structure and performance of national economies and of the policies that governments try to use in order to affect economic performance. Do you know why do we study macroeconomics? The importance of studying macroeconomics lies in equipping you with knowledge to understand broader economic problems and to seek for solutions.

The word "macro' is derived from the Greek word "makro", which means large. This term differs from microeconomics. Microeconomics focuses on the actions of individual agents within the economy, while macroeconomics focuses on the economy as a whole. In a nutshell, macroeconomics is the study of the structure and performance of national economies and of the policies that governments try to use in order to affect economic performance. Therefore, to understand broader problems and to find solutions, an adequate knowledge of macroeconomics is a requirement.

The next section explores these economic problems starting by discussing the focus areas of macroeconomics. Please, go on reading and take your own short notes so as to help

you understand.

1.1.2 The Focus Areas of Macroeconomics

The focus areas of macroeconomics are aggregate behaviour of the economy, such as economic growth, employment, inflation, distribution of income, macroeconomic policies and international trade. What is the importance of studying macroeconomics? The study of macroeconomics helps us understand and try to find answers for central macroeconomic questions such as the following:

- What factors determine the flow of total output produced in the economy over time?
- How can a nation increase its rate of economic growth?
- Why do outputs and employment sometimes fail?
- What are the causes of inflation and how it can be controlled?
- How do government policies affect output, unemployment, inflation, and growth?
- How can business cycle downturns be managed?
- How does the domestic economy interact with the rest of the world?

These questions are related to *macroeconomic goals*. The goals include achieving economic growth, full employment, price stability, as well as reducing budget or balance of payment deficit, and ensuring fair distribution of income in society. Thus, a country's macroeconomic health is examined through such goals as the rise in the standard of living, low unemployment, and low inflation.

In order to address these goals, it is necessary to understand macroeconomic variables which show the status and trends of the whole economy. Examples of such variables include: gross domestic product (GDP), gross national product (GNP), economic growth rate, price level (rate of inflation and deflation), investment, savings, consumption, government budget, level of employment and unemployment, total labour force, demand for money and supply of money, total export and import, trade balance and exchange rate. The above questions and goals of macroeconomics relate to the focus areas of macroeconomics as shown in ***Table 1.1***.

Table 1.1 Focus Areas of Macroeconomics

Focus of macroeconomics	Macroeconomic variables	
National income	Aggregate demand and supply	Rate of employment and unemployment
Employment	Gross domestic production (GDP)	Money demand and supply
Money	Per capital income (PCI)	Government budget
General price level	Economic growth rate	Consumption, saving and investment
Economic growth	Price level	Balance of trade and payment
International trade		

The macroeconomic variables such as Gross Domestic Product (GDP), unemployment rate, and inflation help us determine the macroeconomic performance of a country. By

macro economy, we refer to all buying and selling, all production and consumption or everything that goes on in every market in the economy. Hence, the first step towards understanding macroeconomy is to measure its performance. Macroeconomics is primarily concerned with the forecasting of GDP, by analysing the major economic factors that show predictable trends and patterns, and how they influence with each other.

In connection with this, it is necessary to elaborate the concept of GDP which is defined as the measure of the market value of all final goods and services which are produced in a country during a year.

Gross Domestic Product (GDP)

$$GDP = \sum P_i Q_i$$

Where:

P_i = series of prices of outputs produced in different sectors of an economy in certain period

Q_i = the quantity of various final goods and services produced in an economy

A related measure is the Gross National Product (GNP), which is defined as the total value of final goods and services that are produced by domestically owned factors of production in a given period of time, usually one year, irrespective of their geographical locations. In other words, it represents the total amount of final goods and services which are produced in one year within a country plus transfers to/from other countries.

GDP and GNP are functionally related as: GNP = GDP + NFI, where NFI denotes net factor income received from abroad which is equal to factor income received from abroad by a country's citizens less factor income paid for foreigners to abroad.

There are three approaches to measure GDP/GNP. They are product/value added, expenditure and income approaches. Each of them is briefly discussed as follows.

- ***Product approach:*** here, the GDP is calculated by adding the market value of goods and services that are currently produced by each sector of the economy. Only the values of final goods and services are included to avoid double counting.
- ***Expenditure approach:*** here, the GDP is measured by adding all expenditures on final goods and services that are produced in the country by all sectors of the economy. Thus, GDP can be estimated by summing up personal consumption of households (C), gross private domestic investment (I), government purchases of goods and services (G) and net exports (NE).
- ***Income approach:*** in this approach, GDP is calculated by adding all the incomes accruing to all factors of production used in producing the national output. Then, the GDP is the sum of incomes to owners of factors of production (in the form of wages and salaries, rental income, interest income, and profits) as well as some other claims on the value of output less subsidies and transfer payments.

For as long as market values and prices are involved in GDP calculation of GDP, we have

nominal GDP (measured in actual market prices) and real GDP (calculated in constant prices by taking a base year). Real GNP accounts for difference in price levels in different counties, in cases where inter-country comparisons of GNP are considered. An upward or downward movement in real GDP is the most widely used measure of the level and growth of output.

Dear learner, how did you find the discussions above? Is everything clear? If not, please reread it before doing the following self-test exercises. Is there anyone who is distance learner like you nearby to you? If there is, get him/her face to face and ask each other if there are points which are not clear. That is nice of you! Now, go on answering the following self-test exercise.

🛠 Self-test Exercise

1. Write down notes about macroeconomics.
2. Contrast macroeconomics with microeconomics.
3. What is the importance of studying macroeconomics? It will be good if you write down notes.
4. Write the central macroeconomic questions.
5. What are the focus areas of macroeconomics?
6. Outline macroeconomics goals.
7. Distinguish the different macroeconomics variables.
8. What do the terms 'GDP' and "GNP" represent? Please, write down the answer in a piece of paper and check with the notes in the module.

Checklist of Self-test Exercise

Dear learner, we hope you enjoyed working on this section. Now, it is time to check your understanding. Please, read each question and put a tick mark (√) in the 'yes' or 'no' box, which helps you decide your level of understanding of the points presented and discussed so far.

Check List	Your Response	
	Yes	No
Understand by the term macroeconomics? Write down notes.		
Contrast macroeconomics with microeconomics.		
Mention the importance of studying macroeconomics.		
Write the central macroeconomic questions.		
Write the focus areas of macroeconomics.		
Outline macroeconomics goals.		
Distinguish the different macroeconomics variables.		

Explain what the terms 'GDP' and "GNP" represent.		
Work out the three approaches to measure GDP.		

Dear learner, did you mark any box under the 'No' column? If so, please look at the corresponding item to the left and go back to your text and read about it. That is good! Go on reading the next section!

1.2 Key Challenges in Macroeconomics

Overview

Dear learner, once the key macroeconomic variables and their measurements are explained, subsequent themes centre around the key challenges of the macroeconomy such as economic growth, inflation, unemployment, business cycles and trade balance.

Learning Outcomes

At the end of this section, you will be able to analyse the different challenges of macroeconomics.

Key Concepts

- Economic growth
- Inflation
- Unemployment
- Business cycles
- Trade balance

Now, before going to read the details in each of these concepts, write down short note of your own. Then, compare what you have written with the discussion under each of the concepts.

1.2.1 Economic Growth

Economic growth represents an increase in the capacity of an economy to produce goods and services. It is a necessary ingredient for both high incomes and higher living standards. Higher GDP per capital translates to better diet, health, life expectancy and greater educational opportunity.

The GDP expands or shrinks over time depending on the overall economic environment. The rate at which the real GDP of a country increases over a period of time is known as the "economic growth rate." A higher economic growth rate can be achieved by increasing the amount of 0 factors of production such as labour, land, capital and their productivity. It has to be supported by institutional arrangements such as adherence to the rule of law, the protection of property rights and contractual rights by a country's government so that markets can work effectively and efficiently. Principally, economic growth measures economic performance in terms of value of income, expenditure, and output.

Measuring real income in developing countries is not as simple as we may think of. This is because in developing countries real income is generally understated compared to that of developed countries. The reasons are:

a. The national income account may understate GDP in developing countries because the majority of the population are subsistence farmers who produce for their own consumption and such outputs are not correctly reported.
b. Underreporting income is common in developing countries due to fear of tax and it is partly due to inefficient taxation systems.
c. Usually, no allowance is made for non-monetary sectors in the national income account of less developed countries.
d. Distortion in prices is much higher in developing countries than in developed ones.
e. The cost of pollution and environmental degradation are not deducted from gross national product to get net GNP in developing countries while in developed countries such as Sweden and the Netherlands, the cost of pollution is deducted to get net GNP.

In addition, the above simple measure of growth has two limitations. First, the national income is in the value terms, which changes as the price level changes. Even if physical volume of goods and services remain the same, the growth rate could be positive for the simple reason that inflation has to be taken into account while measuring economic growth (in real terms). Second, it cannot take into account the population growth as there are several instances where population has grown more than national income.

In order to overcome the above two problems, economists have suggested measuring economic growth in terms of a rise in real per capita income, which is the ratio of total GNP to total population. Taking the per capita income as an indication of average standard of living has many limitations. As any average measure, it conceals more than it reveals. In recent years, this measure has come under increasing criticism as an index of development.

First, there is no difference in economic growth and development as the same indicator is used to measure both of them. Moreover, there is no relationship between the definition of development and measure of development in terms of per capita income. Therefore, attempts have been made to use other indices of development. A measure of development must take into account not only the level of per capita income and its distribution but also other indicators of quality life such as level of education and health status.

This leads us to an index called the Human Development Index (HDI). HDI was deployed by United Nations Development Programme (UNDP) and it is sometimes called the "quality of life index." This is basically a non- monetary index which measures the level of development. The typical approach in constructing such an index is to take a number of non-monetary indicators such as educational stocks and flows, fertility and mortality rates, availability of physical and social infrastructures, and compress them by various statistical techniques into a single composite index of development.

Apart from economic growth, economies face another key macroeconomic challenge, namely, inflation.

1.2.2 Inflation

Dear learner, do you think that the prices of goods and services always stay the same? Why? Why not?

Please, try to think on these questions before you start reading the following detail discussions. Thank you so much for doing so!

The prices of goods and services do not always stay the same. This means that sometimes they rise and at other times they fall. The word "inflation" represents a regular and continuous rise in the general price level. Since the general price level refers to the average price of goods and services, inflation represents the rising prices of almost all goods and services. Moreover, inflation is cumulative whereby even a small rise in price in the beginning may become a very large one in the future.

Similarly, the rate of inflation denotes the rate of growth or decline of the price level from one year to the next. It is the percentage change in the overall level of prices. It varies greatly over time and across countries. Contrarily, the fall in price level is called "deflation" (see the mathematical formulations on the next page).

Generally speaking, a substantial and rapid rise in the general price level induces a decline in the purchasing power of money, which means people must spend more to buy a litre of milk or a kilogram of sugar. It is obvious that when prices rise, money buys less and the standard of living declines over time. Therefore, inflation increases the cost of living, and decreases the purchasing power of currency.

In order to protect citizens from the increased cost of living, some governments index contracts, wage levels, and interest rates to inflation. Indexing wage contracts and interest rates means that they will increase when inflation increases to retain purchasing power. When wages do not rise as price levels rise, this leads to a decline in the real wage rate and a decrease in the standard of living. For this and other reasons, inflation is the major concern of macroeconomic policy makers throughout the world.

Inflation and Consumer Price Index

Inflation results in an increased consumer price index (CPI). The CPI is a price index whose movement reflects changes in the prices of goods and services typically purchased by consumers. Thus, the CPI of each month reflects the ratio of the current cost of the basket divided by its base-period cost.

Consumer Price Index (CPI)

$$\text{Consumer Price Index (CPI)} = \frac{\text{The current cost of basket}}{\text{The base year cost of basket}}$$

Hence, from the CPI angle, the rate of inflation or deflation is calculated as the percentage rate of change in a price index. To calculate the inflation rate, one has to subtract the past date CPI from the current date CPI and divide the answer by the past date CPI, and then multiply the results by 100. For example, if your current total price is 560 Birr and your past total price is $340, your equation would be 560/430 = 1.30. Then, multiply this by 100 to create a baseline for the consumer price index, which makes 130. Next, you will subtract 100 (baseline) from 130. That means, 130-100 = 30%. The total 30% represents a percentage change in prices from the previous year.

Inflation Rate

$$\text{Inflation rate} = \frac{\text{Current Date CPI} - \text{Past Date CPI}}{\text{Past Date CPI}} \times 100\% = \frac{CPI_t - CPI_{t-1}}{CPI_{t-1}} \times 100\%$$

Where: CPI is Consumer Price Index

Numerical example of calculating inflation is as follows. Assume that the current date CPI 25% and past date CPI is 20. So, 25 - 20 = 5/past date CPI (20) = 0.25. Then, multiply this by 100 to get a percentage. Thus, you will get that the inflation rate is 25%.

Types of Inflation

Now, let us explore the type of inflation. It is broadly the case that, during inflation, the supply of goods and services is less in comparison to their demand (i.e. aggregate demand is higher than aggregate supply) resulting in a situation where too much money is chasing too few goods. Yet shortage in supply of goods and services alone does not provide the sole explanation.

Inflation is classified on the basis of speed of occurrence and can be termed as creeping, walking, running, galloping inflation, and hyperinflation. *Creeping* inflation is moderate inflation that occurs when the price level persistently rises over a period of time at a slow rate like the price rise in 3% or less. *Walking* inflation occurs when annual inflation rate is a single digit or in the range of 3 to less than 10% per year. *Running* inflation occurs when prices rise rapidly at the rate of 10 to 20% per year. *Galloping* or *jumping* inflation occurs at a quick rate (dual or triple-digit annual rates) for a short period of time. *Hyperinflation* refers to a situation where the prices of goods and services rise uncontrollably, for example, at the rate of increase at more than 50% a month.

Likewise, inflation is also classified on the basis of causes such as demand-pull or cost-push inflation as well as wage, profit, scarcity, deficit, currency, credit and foreign trade induced inflation. Many of these causes are related to how money is supplied and demanded in the economy. For instance, when governments print money to finance expenditure, this translates into an increase in the money supply which causes inflation. The printing of money to raise revenue (also known as *seinorage*) resembles imposing an inflation tax to be paid

by money holders. As prices rise, the real value of the money in one's wallet falls. Hence, inflation is like a tax on holding money (Mankiwi, 2016).

Indeed, most episodes of high inflation and hyperinflation are caused by governments' need to obtain revenue from printing money. Sometimes, inflation reaches extraordinarily high levels. The most extreme cases are hyperinflations, which are traditionally defined as periods when inflation exceeds 50% per month. The all-time record inflation took place in Hungary in July 1946 (with the monthly inflation of 41.9 quadrillion percent amounting to prices doubling every 15.3 hours). The hyperinflation in Zimbabwe in 2007-2009 was almost as large, with prices at times doubling daily (Romer, 2019). As the result, the Zimbabwean government printed ever higher currency notes, including a $100 trillion bill, to cover its widening deficits. Then, by late 2008, the money was nearly worthless, which led Zimbabwe to adopt the US dollar, immediately halting its hyperinflation.

Moreover, there is a consistent pattern that wars are associated with inflation for some reasons. For example, during a major war, a government needs to acquire large amount of resources (goods and manpower). Printing money seems like a relatively painless way for the government to acquire some of these resources. Wars, falls in export prices, tax evasion, and political stalemate frequently leave governments with large budget deficits. In addition to this, investors often do not have enough confidence that the government will honour its debts to buy its bonds. As a result, a government's only choice is to resort to printing money which contributes to inflation.

Apart from inflation, economies face another key macroeconomic challenge, namely, unemployment.

2.3.4 Unemployment

Dear learner, what do you understand when we say employment and unemployment? What is the impact of both in a country's economy? That is good! As a usual, we hope that you have tried to answer these questions before reading the details.

A person is employed if he or she spends some of his/her time working at a paid job. A person is unemployed if he or she is not employed and has been looking for a job or is on temporary layoff. On the other hand, a person who fits into neither of the first two categories, such as a full-time student or retiree, is not in the labour force. In the case of Ethiopia, the population aged 14 to 60 is termed as economically active or of working age. Yet formal employment requires a minimum of 18 years of age. According to the Ethiopian labour law, the labour force does not include children under the age of 14, retired people over 60 years old and those in mental and correctional institutions.

From the economic point of view, unemployment is the macroeconomic problem that affects people most directly and severely. It has economic costs to broader society. For example, when millions of unemployed but willing workers cannot find jobs, economic resources are unused. The opportunity cost of unemployment is the output that the unemployed workers could have produced. Hence, the costs of unemployment justify making a low

level of unemployment which is a public policy priority. In other words, since one aspect of economic performance is how well an economy uses its resources, and workers are the economy's main resource, keeping workers employed is a paramount concern of economic policymakers. In order to address the problem of unemployment, policy makers need to know about the labour market, the labour force, labour force participation rate and the unemployment rate. These concepts are detailed below.

The labour force is defined as the sum of the employed and unemployed. The total labour force refers to the percentage of the population that is willing and able to work.

The unemployment rate is defined as the percentage of the labour force that is unemployed or the percentage of those people who want to work and who do not have jobs or those who are out of job despite willingness to work at the existing wage rate.

The labour-force participation rate is the percentage of the adult population that is in the labour force.

Labour Force

$$\text{Labour Force} = \text{Number of Employed} + \text{Number of Unemployed}$$

Unemployment Rate

$$\text{Unemployment Rate} = \frac{\text{Number of Unemployed}}{\text{Labour Force}} \times 100$$

Labour Force Participation Rate

$$\text{Labour Force Participation Rate} = \frac{\text{Labour Force}}{\text{Adult Population}} \times 100$$

There are different types of unemployment. The major ones are frictional, cyclical and structural unemployment.

Frictional unemployment: *This* occurs during the time when workers move between jobs which take time on part of both the employer and the individual to match those who are looking for employment with the correct job opportunities. This results in a lack of perfect mobility of workers between jobs. One example of frictional unemployment is the case of individuals entering the workforce for the first time after graduating from college/university or searching for first job. They are unemployed until they get their first job.

Cyclical unemployment: *This* occurs due to a deficiency of aggregate effective demand resulting from business depressions (Dewett, 1997). International factors may generate this kind of unemployment. For example, lack of demand for coffee or other agricultural products in overseas markets, resulting from unfavourable business cycles that has a knock-on effect to the employment situation in a domestic economy. Another example of this is that workers will be laid off when the economy is in recession.

Structural unemployment: *This* is a form of involuntary unemployment that happens when there is lack of adjustment between demand for and supply of labour. As the name "structural" implies, the economic changes are extensive amounting to a transformation of an economic structure. It is possible that the work force could grow faster than the stock of capital of a country and the addition of the labour force cannot be absorbed in productive employment. Moreover, there are situations where employers may lack knowledge about the availability of workers or the workers may not know that employment is available with a relevant employer. Individuals may also lack the skills that are valued by the labour market, either because demand has shifted away from the skills they have, or because they never learned any skills. Education is the key in minimizing the amount of structural unemployment. For instance, individuals who have degrees can be re-trained if they become structurally unemployed. On the other hand, for people with no skills and little education, that option is more limited. In sum, structural unemployment is caused by such factors as the lack of necessary skills for a particular job, labour immobility, breakdowns of machinery, and shortages of raw materials.

On other hand, there is a form of unemployment categorised as **underemployment** which refers to the situation in which person is forced by unemployment to take a job that he/she thinks is not adequate for his/her purpose, or not commensurate with his/her training. Furthermore, there are those who work full time in terms of hours per day but earn very little to rise above the poverty level. Open and disguised unemployment in urban and rural areas are estimated at 30-35% of the labour force in underdeveloped countries

Dear learner, have you understood all the concepts discussed above? That is very good. If there is something not clear, please reread it.

2.3.5 Business Cycle

Dear learner, have you ever heard the term business cycle? If so, what is it? Please, as a usual read the following carefully until you understand.

In real life, economic growth is often accompanied by cycles of expansion and contraction, boom and bust. The term "business cycle" (also known as "trade cycle", "economic cycle" or "boom-bust cycle") refers to economy-wide fluctuations in production, trade, and general economic activities. The fluctuations represent upward and downward movements in levels of GDP or the period of expansions and contractions in the level of economic activities around a long-term growth trend.

Business cycles as fluctuations recur with a certain degree of regularity following a pendulum like oscillation. There are upward and downward swings in business as shown in Figure 1.1. According to some economists, every boom is followed by a slump and vice versa (Vaish, 2010). Business cycles have four distinct phases: expansion, peak, contraction, and trough. **An expansion** is characterized by increasing employment, economic growth, and upward pressure on prices. **A peak** is the highest point of the business cycle, when the economy is producing at maximum possible output, employment is at full employment, and inflationary pressures on prices are evident. Following a peak, the economy typically enters

a correction which is characterized by **a contraction** where growth slows, employment declines (unemployment increases), and pricing pressures subside. The slowing ceases at the trough and at this point the economy has hit a bottom from which the next phase of expansion will emerge.

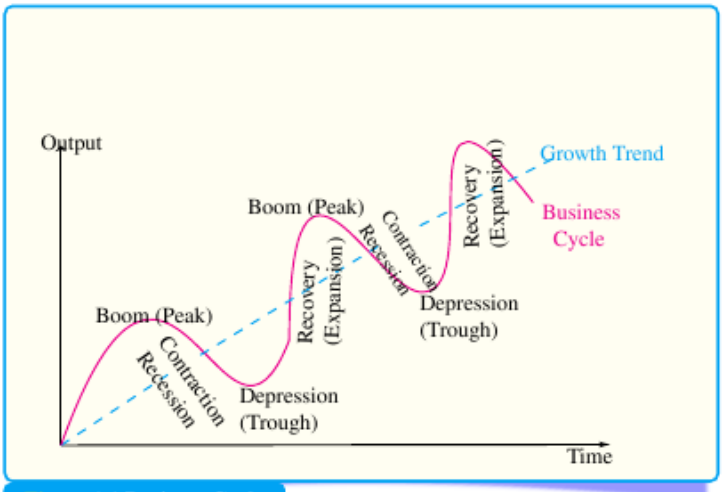


Figure 1.1 Business Cycle

In sum, economic fluctuations are not regular and predictable. Recessions are common but irregular. So, what causes short-run fluctuations? What model should we use to explain them? Here, a model refers to an organising framework that represents a simplification of the system under investigation. Can policymakers avoid recessions? If so, what policy levers should they use? It is noted that just as Egypt now controls the flooding of the Nile Valley with the Aswan Dam, modern society tries to control the business cycle with appropriate economic policies (Mankiw, 2016).

2.3.6 Balance of Trade

The ***balance of trade*** is another macroeconomic variable that affects national economies. The balance of trade is the difference between export and the import of goods and services of a country for a given period; it is also an important component of the balance of payment of a country.

The ***balance of payment*** is the systematic record of a nation's financial transactions with the outside world. It is divided into current and capital accounts. The ***current account*** shows the market value of a country's export and import of goods and services, investment income, debt service payments, and private and public net remittances and transfers.

The ***capital account*** shows the volume of private foreign investment and public grants and loans that flow into and out of a country over a given period. Countries pay interest on loans they receive. For this, they pay a sum of interest payments and repayments of principal on external debt, which is also called ***debt service*** (Todaro and Smith, 2015).

The balance of trade (or trade balance) is any gap between a nation's dollar value of exports and imports. When imports exceed exports, the result is a trade deficit in the economy. In other words, if exports exceed imports, the economy has a trade surplus. On the other hand, if exports and imports are equal, then trade is balanced. Now, let us compare two

countries, namely, Ethiopia and China, with different trade balances. In 2020, Ethiopia ran a trade deficit of about US$10.7 billion while China had a substantial commodity trade surplus amounting to about US$535 billion in the same year.

The question is: *What happens when trade is out of balance and large trade surpluses, or deficits exist?* Many nations seek trade surpluses; however, some degree of trade deficits is economically tolerable for countries when such a deficit reflects the importing of capital equipment which can then be used to boost productivity and output.

A series of financial crises which are triggered by unbalanced trade can lead economies into deep recessions. These crises begin with large trade deficits. At some point, foreign investors become pessimistic about the economy and move their money to other countries. The economy then, drops into deep recession, with real GDP often falling up to 10% or more in a single year. This happened to Mexico in 1995 when its GDP fell by 8.1%. Several countries in East Asia (Thailand, South Korea, Malaysia, and Indonesia) succumbed to the same economic illness in 1997-1998 (called the "Asian financial crisis"). In the late 1990s and into the early 2000s, Russia and Argentina had the identical experience (Mankiw, 2016).

Problems with trade imbalances do not reduce the importance of the economic benefits from foreign trade. In the globalised world of today, countries benefit from diversity in production possibilities (due to difference in endowments), economies of scale and decreasing costs as the volume of output expands, as well as satisfaction of different tastes/preferences for commodities from different countries (Samuelson and Nordhaus, 1995).

Now, write down answers for the following questions. If, in case you are unable to find answers for some of them, read further and retry them. That is good, as you are trying to do your best to understand what is written here.

🛠 Self-test Exercise

1. Write down the definition of economic growth.
2. Outline the type of inflation based on its causes.
3. What are the types of unemployment?
4. What are the phases of business cycles?
5. Distinguish between trade deficit and surplus.
6. Define current and capital accounts.

Checklist of Self-test Exercise

Dear learner, we hope you enjoyed working on this section. Now, it is time to check your understanding. Please, read each question and put a tick mark (√) in the 'yes' or 'no' box, which helps you decide your level of understanding of the points presented and discussed so far.

Check List	Your Response	
	Yes	No
Write down the definition of economic growth.		
Outline the type of inflation based on its causes.		
Outline the types of unemployment.		
Write down the phases of business cycles.		
Distinguish between trade deficit and surplus.		
Define current and capital accounts.		

Dear learner, did you mark any box under the 'No' column? If so, please look at the corresponding item to the left and go back to your text and read about it. That is good! Go on reading the next section!

1.3 The Schools of Thought in Macroeconomic Analysis

Overview

Dear learner, do you think that macroeconomic analysis involves different schools of thought? The most notable ones are the classical and neoclassical, the Keynesian, the monetarist, the new classical, and the new Keynesian schools of thought.

Learning Outcomes

At the end of this section, you will be able to:

- describe the evolution and recent development in macroeconomic analysis.
- list different schools of thought engaged in macroeconomic analysis.

Key Concepts

- Classical
- Neoclassical
- Keynesian
- Monetarist
- New classical
- New Keynesian

1.3.1 Evolution and Recent Developments

From the inception of macroeconomics, different schools of thought have engaged in macroeconomic analysis. In the subsequent sections, we will briefly distinguish the classical and neoclassical, the Keynesian, the monetarist, the new classical, and the new Keynesian schools of thought.

1.3.2 Classicals and Neoclassicals

The classical view was the predominant economic philosophy until the Great Depression. The works of Adam Smith (1723-1790), David Hume (1711-1776), David Ricardo (1772-1823),

Jean Baptiste Say (1767-1832), John Stuart Mill (1806-1873), Knut Wicksell (1851-1926), and Irving Fisher (1867-1947) can be categorised here. According to classical thinking, given flexible prices, the short-term fluctuations in economic activity would rather be quick and they would adjust back to full employment. This view of the economy implied a "hands off" policy approach. For example, if an economy slips into recession, it will temporarily exhibit a surplus of goods. Falling prices will eliminate this surplus, and the economy will return to a full employment level of GDP. In this case, no active fiscal or monetary policy is needed. Expansionary fiscal or monetary policy would only cause inflation, rather than increase the GDP. In other words, fiscal policy is useless in affecting employment and output while increasing government spending will lead to a higher rate of interest and full crowding out of private investment, without effecting changes in the price level. On the other hand, monetary policy has no effects on the real sphere of the economy, and it only leads to a higher price level. For classical economists, the real and monetary sectors could be studied separately. Demand-side policies merely affect the interest rate and/or the price level, while supply-side policies affect the real wage, employment, and output.

Linked to this preference for supply side policies are economists termed as supply-siders, e.g. Arthur Laffer (1940 -) and Robert Mundell (1932-2021). Supply-siders despise government intervention in the markets and emphasize the distorting effects of taxation. Their policy advice is to cut tax rates to stimulate the economy. They argue that there is no need to cut government spending because the tax cut will pay for itself, hence there is no need to restrain public spending on defence, for example, while having an excuse to substantially cut the tax rate. The central element of this argument lies in the Laffer Curve theory that was formalized by Arthur Laffer to show the relationship between tax rates and the amount of tax revenue that is collected by governments. The curve is used to illustrate the argument that cutting tax rates can sometimes result in increased total tax revenue.

Neoclassical economics is the name given to an economic theory that was developed at the end of the 19th century and beginning of the 20th century in Europe. The main contributors to this theory were Léon Walras (1834-1910), Alfred Marshall (1842-1924) and Vilfredo Pareto (1848-1923).

Neoclassicals base their ideas mainly on the writings of Alfred Marshall and his followers. They closely follow the findings of the classical school but emphasize the limitation of some of the classical doctrines, notably that of laissez faire. Moreover, they make use of the concept of marginal utility and accept mathematical economics as one method of presentation.

As the name implies, the neoclassical view of how the macro-economy works is a "new" view of the "old" classical model of the economy. The neoclassical view on macroeconomics holds that in the long run, the economy will fluctuate around its potential GDP and its natural rate of unemployment. The two building blocks of neoclassical economics are that the potential GDP determines the economy's size and wages, and prices will adjust in a flexible manner so that the economy will adjust back to its potential GDP level of output. The key policy implication is that the government should focus more on long-term growth and on controlling inflation than on worrying about recession or cyclical unemployment.

This means that neoclassical economics is more useful for long-run macroeconomic analysis and Keynesian economics is more useful for analysing the macroeconomic short run.

1.3.3 Keynesian

The deep and lasting impact of the Great Depression of the early 1930s changed classical thinking. The self-correcting feature of the market, which is of course the hallmark of classical theory, simply did not work. Moreover, the events of the Great Depression contradicted Say's Law which states that "supply creates its own demand". Although production capacity existed, the markets were not able to sell their products. As a result, real GDP was less than potential GDP. As far as recession/depressions are concerned, the focus of Keynesian economics was on explaining why and offering a policy prescription for minimizing their effects.

Following on from John Maynard Keynes (1883-1946), Keynesian economics prescribed active fiscal policy to alleviate weak aggregate demand. The idea for focusing on aggregate demand is simple: firms produce output only if they expect it to sell. While the availability of the factors of production determines a nation's potential GDP, the amount of goods and services that are sold, known as *real* GDP, depends on how much demand exists across the economy. Yet aggregate demand is not stable, Keynes argued; it can change unexpectedly.

Recession, according to the Keynesian view, emerges from two key building blocks. First, aggregate demand is not always automatically high enough to provide firms with an incentive to hire enough workers to reach full employment. Second, the macroeconomy may adjust only slowly to shifts in aggregate demand because of sticky wages and prices, (i.e., wages and prices that do not respond to decreases or increases in demand).

The first building block of the Keynesian diagnosis is that recessions occur when the level of demand for goods and services is less than what is produced when labour is fully employed. Suppose that the stock market crashes, as in 1929, or the housing market collapses, as in 2008. In either case, household wealth will decline, and consumption expenditure will follow the same path. Since businesses see that consumer spending is falling, they face reduced expectations of the profitability of investment, so they will decrease investment expenditure.

According to Keynes, monetary policy is of little help as the additional money will simply be absorbed by investors with no noticeable effect on the interest rate. Fiscal policy, on the other hand, will work well. The additional government spending will stimulate aggregate demand and hence employment and output.

1.3.4 Monetarist

The monetarist view is represented by Milton Friedman (1912-2006) and his colleagues. They argued that it is monetary policy and not fiscal policy that addresses macroeconomic problems. They noted that since they assumed the interest sensitivity of investment to be very high, fiscal policy leads only to strong crowding out of private investment. Fiscal policy, under

monetarist assumptions, is unable to influence employment and output. This assumption means monetarists oppose the Keynesians who believed in stimulating economic activity by investment to ward off recessions. Furthermore, the monetarists' assumptions imply that monetary policy has real effects.

A policy maker may therefore, be tempted to use monetary expansion to combat unemployment. But then monetarists remain doubtful that policy makers are good at timing the monetary policy. They underline the long- and variable-time lags before a macroeconomic problem is recognized before an appropriate macroeconomic policy is implemented and yields the required effect. When the policy is set too late, monetary policy can heighten business cycle fluctuations in the economy. To this end, Friedman suggested that the central bank should follow a constant growth rule for some monetary aggregate and not tinker with monetary policy to influence aggregate demand and employment.

1.3.5 New Classical

The new classicals are the natural successors of the classical economists. That is why they can be termed as the modern-day classical economists. Economists like Robert Lucas (1937 -), Thomas Sargent (1943 -), Robert Barro (1944 -), Edward Prescott (1940 -) are listed in this category. The new classicals stress mathematical techniques. They support classical ideas such as flexible prices and wages, rational expectations or perfect foresight, the efficiency of the market, and full employment. All observable fluctuations in the economy are due to rational agents responding to the incentives as they observe them, not due to nominal rigidities.

They strongly endorse rational expectations and microeconomic underpinning of macroeconomic relations, such as the consumption and the investment functions, and the labour market. They came up with the term "policy ineffectiveness proposition", according to which the policy maker either cannot or should not use countercyclical policy.

1.3.6 New Keynesian

Just as the New Classicals are the natural successors of classical economists, so are the new Keynesians. Under the umbrella of the new Keynesians are found economists such as George Akerlof (1940 -), Edmund Phelps (1933 -), John B. Taylor (1946 -), Stanley Fischer (1943-), Olivier Blanchard (1948 -) and Gregory Mankiw (1958 -).

Writing in the 1970s and 1980s, the New Keynesians derive their main inspiration from the insights of John Maynard Keynes. For them, markets may not be as perfect as the classical economists suggest. They accepted the rational expectation hypothesis (REH), but stressed the existence of nominal rigidities, arising from multi-period nominal wage contracts. Such rigidities invalidate the policy ineffectiveness proposition (PIP) of the new classical economists. Hence, they argue for government to stabilize the economy, even under REH.

The most recent wave of new Keynesian economics is more micro-based. The predominance of imperfect competition, coordination failures, and credit restrictions are stressed. Although

it is too early to call in the jury for a verdict, it is clear that this is a very promising avenue of research.

Dear learner, how did you find the discussions above? Is everything clear? If not, please, re-read it before proceeding to the next section of the module. Is there anyone who is distance learner like you nearby to you? If there is, get him/her face to face and ask each other if there are points which are not clear. That is nice of you! Now, go on reading the following.

🛠 Self-test Exercise

Dear learner, we hope that you have read what is discussed in the above sections. Haven't you? That is nice of you! Hence, you need to test yourself whether you have understood what you have read or not by trying the following questions.

1. List the major schools of thought in macroeconomic analysis.
2. Write down important personalities and key issues that are related to classical school of thought.
3. Write down important personalities and key issues that are related to neo-classical school of thought.
4. Compare the classing and neoclassical schools of thought.
5. Write down the supply-siders view of government intervention and tax rates.
6. Differentiate Keynesian and Monetarist economics.

Checklist of Self-test Exercise

Dear learner, we hope you enjoyed working on this section. Now, it is time to check your understanding. Please, read each question and put a tick (√) mark in the 'yes' or 'no' box, which helps you decide your level of understanding of the points presented and discussed so far.

Check List	Your Response	
	Yes	No
List the major schools of thought in macroeconomic analysis.		
Write down important personalities and key issues that are related to classical school of thought.		
Write down important personalities and key issues that are related to neo-classical school of thought.		
Compare the classing and neoclassical schools of thought.		
Write down the supply-siders view of government intervention and tax rates		
Differentiate Keynesian and Monetarist economics.		

Dear learner, did you mark any box under the 'No' column? If so, please look at the corresponding item to the left and go back to your module and read about it. That is good! Go on reading the next section!

Unit Summary

Dear learner, we hope that you have read all the sections in this unit carefully and understand. Now, it is time for you to think what you understand in the unit. Before going to read the next unit, please read the summary of the unit.

Microeconomics focuses on the actions of individual agents within the economy, like households, workers and businesses. Macroeconomics, on the other hand, looks at the economy as a whole by focusing on broad issues such as growth of production, the number of unemployed people, the inflationary increase in prices, government deficits, levels of exports and imports and trade balance. Yet both microeconomics and macroeconomics are complementary perspectives on the subject of the economy.

The focus areas of macroeconomics are aggregate behaviour of the economy, such as economic growth, employment, inflation, distribution of income, macroeconomic policies and international trade. The macroeconomic variables such as gross domestic product (GDP), the unemployment rate, and inflation help us to determine the macroeconomic performance of a country.

The state of macroeconomics has evolved since the 1930s and **different schools of thought** (the classical and neoclassicals, the Keynesians, the monetarists, the new classical economists, and the new Keynesians) emerged.

The state of macroeconomics has evolved since the 1930s. Since then, different schools of thought emerged. They include the classical and neoclassicals, the Keynesians, the monetarists, the new classical economists, and the new Keynesians. Each of them contributed to the advancement of macroeconomics.

Unit Review Exercises

Part I: True or False

Read the following statements and write "True" for correct statement and "False" for incorrect ones.

1. Macroeconomic goals include achieving high economic growth, promoting maximum employment or reducing unemployment, attaining stable prices, reducing budget or balance of payment deficit, and ensuring fair distribution of income.
2. There is a difference between microeconomics and macroeconomics.
3. Microeconomics focuses on the economy as a whole.
4. The difference between export and import of goods and services of a country for a given period is known as balance of exports.
5. Economic growth represents a decrease in the capacity of an economy to produce goods and services.

6. Inflation decreases the cost of living and increases the purchasing power of currency.
7. In business cycles, an expansion is characterized by increasing employment, economic growth, and upward pressure on prices.
8. The classical view was the predominant economic philosophy until the Great Depression of the 1930s.

Part II: Multiple Choice

For each of the following questions, choose the best answer from the given alternatives.

1. Why measuring real income in developing countries is not as simple as we may think of?
   A. Distortion in prices is much higher in developing countries than in developed ones.
   B. The national income account may understate GDP in developing countries because the majority of the population are subsistence farmers who produce for their own consumption and such outputs are not correctly reported.
   C. Usually, no allowance is made for non-monetary sectors in the national income account of less developed countries. What determines how many jobs are available in an economy?
   D. Underreporting income is common in developing countries due to fear of tax and it is partly due to inefficient taxation systems.
   E. All of the above
2. Which one of the following statements is accurate description of balance of trade?
   A. Unbalanced trade may trigger a series of financial crises that can lead economies into deep recessions.
   B. Deep recessions begin with large trade deficits.
   C. Foreign investors become pessimistic about the economy and move their money to other countries.
   D. All of the above.
   E. None of the above.
3. On which form of unemployment does technological change has the largest impact?
   A. Frictional unemployment
   B. Cyclical unemployment
   C. Structural unemployment
   D. All of the above
4. According to the Keynesian view, what key building blocks does recession emerge from? What key building blocks?
   A. Aggregate demand is not always automatically high enough to provide firms with an incentive to hire enough workers to reach full employment.
   B. The macroeconomy may adjust only slowly to shifts in aggregate demand because of sticky wages and prices.
   C. Both a and b

D. None of the above

5. The New Keynesian writings:
   A. Appeared in the 1970s and 1980s,
   B. Derive their main inspiration from the insights of John Maynard Keynes.
   C. They believe that markets may NOT be as perfect as the classical economists suggest.
   D. They accepted the rational expectation hypothesis (REH), but stressed the existence of nominal rigidities, arising from multi-period nominal wage contracts.
   E. All of the above

Part III: Short Answers

For each of the following questions, write short answers.

1. What is Human Development Index (HDI)?
2. Define the term business cycle.
3. List the different schools of thought in macroeconomics.
4. Differentiate between GDP and GNP.
5. Write the difference between the balance of trade and the balance of payments.

Answer Key for Review Exercises

Part I: True or False

1. True	3. False	5. False	7. True
2. True	4. False	6. False	8. True

Part II: Multiple choices

1. E	2. D	3. C	4. C	5. E

Part III: Short answers:

1. Human Development Index (HDI) is a factor deployed by United Nations Development Programme (UNDP) and it is sometimes called the "quality of life index." This is basically a non- monetary index which measures the level of development. The typical approach in constructing such an index is to take a number of non-monetary indicators such as educational stocks and flows, fertility and mortality rates, availability of physical and social infrastructures, and compress them by various statistical techniques into a single composite index of development.
2. Business cycles are fluctuations that recur with a certain degree of regularity following a pendulum like oscillations. There are upward swings and then downward swings in business.
3. The major schools of thought in macroeconomics include: the classical and neoclassical, the Keynesian, the monetarist, the new classical, and the new Keynesian schools of thought.

4. GDP is defined as the measure of the market value of all final goods and services which are produced in a country during a year. Gross national product (GNP) is defined as the total value of final goods and services that are produced by domestically owned factors of production in a given period of time, usually one year, irrespective of their geographical locations. In other words, it represents the total amount of final goods and services which are produced in one year within a country plus transfers to/from other countries.
5. The balance of trade is the difference between export and import of a country for a given period; it is an important component of the balance of payment of a country. The balance of payment is the systematic record of the nation's financial transactions with the outside world. It is divided into current and capital accounts. The current account shows that the market value of a country's export and import of goods and services, investment income, debt service payments, and private and public net remittances and transfers. The capital account shows the volume of private foreign investment and public grants and loans that flow into and out of a country over a given period.

References

Abel, Andrew B., Bernanke, Ben S. and Croushore, Dean (2011) *Macroeconomics,* Boston: Addison-Wesley.

Brian Snowdon, B and Vane, H. (2005) Modern Macroeconomics: Its Origins, Development and Current State. Cheltenham: Edward Elgar.

Dewett, K.K. and Chand, Adarash (1996) *Modern Economics Theory*. 21strevised edition. New Delhi: Shyam Lal Charitable Trust.

Froyen, Richard T. (2013) *Macroeconomics: Theories and Policies*. 10th edition. Harlow: Pearson Education Limited.

Mankiw, N. Gregory (2016) *Macroeconomics.* New York: Worth Publishers

Samuelson, Paul A, and Nordhaus, William D. (1995) *Economics.* 15th edition. New York: McGraw-Hill Education.

Taylor, Timothy (2011) Principles of Macroeconomics for AP® Courses 2e.

Vaish, M.C. (1995) *Macro Economic Theory*. 10th edition. New Delhi: WishwaPrakashan.

UNIT 2

AGGREGATE DEMAND AND AGGREGATE SUPPLY ANALYSIS

Time Allotted: 14 hours

INTRODUCTION

Dear learner, have you ever heard the terms aggregate supply and aggregate demand? If your answer is yes, write what you understand about these terms. That is good! Now, go on reading the notes given below and compare your answer with what you read.

Aggregate Supply - demand (AS-AD) analysis is simply an aggregation of the microeconomic model. Instead of the quantity of output of a single industry, this model represents the quantity of output of an entire economy. Just as there are two sides to a market, a buying side (demand) and a selling side (supply), there are also two sides to an economy: demand and supply sides. These are the two forces which operate on the macro economy and they are important tools that help us explain the major economic trends. In macroeconomic analysis, we determine the level of overall economic activity in an economy, particularly the levels of output and prices through an interaction of aggregate demand and aggregate supply.

This unit is divided into three sections. The first section presents aggregate demand and aggregate demand curve and about factors which shift the aggregate demand curve. The second section discusses the aggregate supply and aggregate supply curve, and the last section discusses the equilibrium of aggregate demand and aggregate supply.

Dear learner, we expect you to complete unit two in **14 hours**. Please, assess your progress, performance and overall understanding by referring to the learning outcomes, self-test exercises and checklists. We also expect you to learn at your own pace and cover portions of the subject within a defined time frame as a requirement.

If you want to understand the whole of this unit, you need to read everything discussed in the unit.

Unit Learning Outcomes

After completing this unit, you will be able to:

- articulate the difference between a change in the quantity demanded and a change in demand.
- outline various explanations for wage and price stickiness.
- construct graphs which represent the short and long runs' equilibrium in relation to potential output.
- understand how the AS–AD model is used to analyse economic fluctuations.

Dear learner please reread the outcomes that you are going to achieve after reading the whole of this unit. The very reason for this is that unless you know where you are going, you do not know when you arrive.

Unit Contents

Learning Strategies

Dear learner, please use the following and other learning strategies to successfully learn what is discussed in this unit.

1. Create a schedule and follow it.
2. Take the time to research questions.
3. Assess the technology used in the course.
4. Utilize alarms and calendars to keep you abreast with deadlines.
5. Appreciate and value yourself.
6. Participate in tutorial classes.
7. Search for different available learning opportunities that will help you to better understand the subject in this unit.

2.1 Aggregate Demand

Overview

Dear learner, in this section you will study the concept of aggregate demand and aggregate demand curve. You will also look at the different factors which shift the aggregate demand curve.

Dear learner! Your successful completion of this section will enable you to:

- define concept of aggregate demand.
- describe the basic determinants of aggregate demand.
- distinguish the difference between a change in the quantity demanded and a change in demand.

Dear learner, please don't forget that the following important concepts which will be discussed in detail in this section of the unit.

- Aggregate demand
- Aggregate demand Curve
- Change in aggregate demand
- Determinants of AD

Now, please, precede to the detail discussions of this section. We wish you Good Reading!

2.1.1 Concept of Aggregate Demand

Dear learner, what important ideas do come into your mind when you think of aggregate demand in an economy? Have you attempted? Oh, it is appreciable. Now, have a look at the next notes about aggregate demand.

Aggregate demand (AD) refers to the total amount that different sectors in the economy willingly spend in a given period. This is because it is measured by the total expenditure of the economy's community on goods and services. Specifically, AD is defined as: the total amount of money which all sections (households, firms, and governments) are ready to spend on the purchase of goods and services which are produced in an economy during a given period.

In simple words, AD is the sum of spending by consumers, businesses, and governments which depends on the level of prices as well as on monetary policy, fiscal policy and other factors. In other words, it is the total spending by all the entities in the economy. Moreover, we may say aggregate demand is the total expenditure on consumption and investment. There are four major components of AD:

- household consumption demand (C)
- private investment demand (I)
- government demand for goods and services (G)
- net export demand (X-M)

So that:

$AD = C + I + G + (X - M)$ **Consumption (C)** is primarily determined by disposable income, which is personal income less taxes, household wealth, longer term trends in income, and the aggregate price level.

A. **Investment (I)** spending includes private purchases of structures, equipment and accumulation of inventories. The major determinants of investment are the level of output, the cost of capital and expectation about the future.
B. **Government purchase (G)** is expenditures on goods and services by federal, state, and local governments.
C. **Net Exports (X-M)** is the value of exports minus the value of imports. Net exports are determined by domestic and foreign incomes, relative prices and exchange rates.

Have you understood the concept of aggregate demand? That is good! If you are not sure, reread please. After doing so, go on reading the next section!

2.1.2 The Aggregate Demand Curve

Dear learner, do you think that aggregate demand curves always slope downwards from left to right? Why? Why not? Please, try to think on these questions before you start reading detailed discussions below. That is wonderful! Now, have a look at the next notes about aggregate demand curve.

Aggregate demand (AD) curve shows the amount of real output that buyers collectively desire to purchase at each price level ceteris paribus. The relationship between the price level and real GDP demanded is inverse or negative.

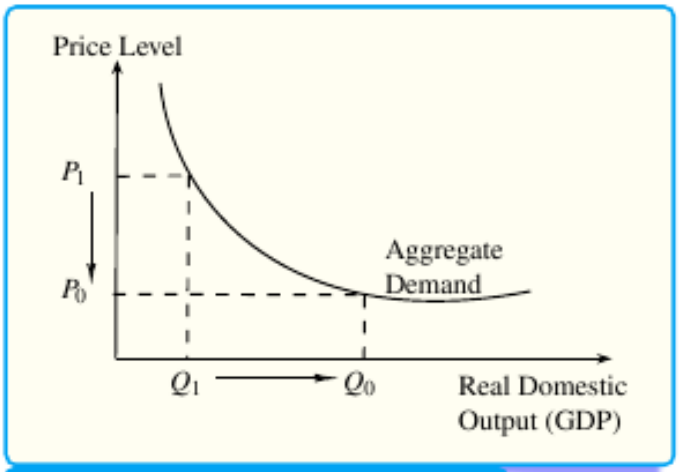


Figure 2.1 Aggregate Demand Curve

In general, it is observed that with other factors held constant, aggregate demand rises with a fall in general price level. The inverse is also true. Thus, the AD curve is a downward sloping curve. This indicates the output (goods and services) which will be demanded in an economy at various general price levels.

Figure 2.1 shows that when the general price level falls $P_1 to P_0$, the aggregate quantity demanded of the output increases $Q_1 to Q_0$. Consequently, there is an inverse relationship between the general price level and aggregate demand. Remember here what you learnt in ***Grade 9*** about the relationship between the price of an individual commodity and its demand (law of demand).

The downward slope of the AD curve is explained by the real balance effect, the interest rate, and the international trade effect. Please, read the detail of these concepts briefly discussed here under.

(i) Real Balance Effect

The **real balance effect** states that the inverse relationship between the price level and the quantity demanded of Real GDP is established through changes in the value of **monetary wealth**, or money holdings. A rise in the price level causes purchasing power to fall, which decreases a person's monetary wealth. For example, as people become less wealthy, the quantity demanded of real GDP falls.

(ii)Interest Rate Effect

This is also called a "money supply effect". A rise in price with a fixed money supply, other things being equal, leads to tight money and produces a decline in total real spending.

The inverse relationship between the price level and the quantity demanded of real GDP is established through changes in household and business spending that is sensitive to changes in interest rates. A higher price level increases the demand for money. So, given a fixed supply of money, an increase in money demand will drive up the price which is paid for its use. That price is the interest rate. Higher interest rates curtail investment spending and interest-sensitive consumption spending. Firms that expect a 6% rate of return on a potential purchase of capital will find that investment is potentially profitable when the interest rate is, say, 5%. But the investment will be unprofitable and will not be made when the interest rate has risen to 7%. Similarly, consumers may decide not to purchase a new house or new automobile when the interest rate on loans goes up. So, by increasing the demand for money and consequently the interest rate, a higher price level reduces the amount of real output demanded.

(iii) International Trade Effect

The **international trade effect** states the inverse relationship between the price level and the quantity demanded of real GDP, which is established through foreign sector spending. Suppose that the price level in Ethiopia rises. As this happens, Ethiopian goods become relatively more expensive than foreign goods. As a result, both Ethiopians and foreigners buy fewer Ethiopian goods. Due to this, the quantity demanded of Ethiopia's real GDP falls.

Change in Quantity Demanded Vs Change in Aggregate Demand

A change in the quantity demanded of Real GDP is brought about by a change in the price level. For example, as the price level falls, the quantity demanded of Real GDP rises, ceteris paribus (other things being constant).A change in the quantity demanded of real GDP is represented as a *movement* from one point to another along the same demand curve.

A change in aggregate demand is a *shift* in the aggregate demand curve from AD_1 to AD_2 (***Figure 2.2***). Notice also that when the aggregate demand curve shifts, the quantity demanded of real GDP changes even though the price level remains constant. General Price level remaining constant, any positive change in any of these factors causes a rightward shift in the AD curve, and a negative change shifts the AD curve leftward. These factors include:

- general level of income of the people,
- real interest rate,
- level of economic activity in other countries (it determines the level of exports),
- availability of credit
- the level of economic activity in the economy itself.

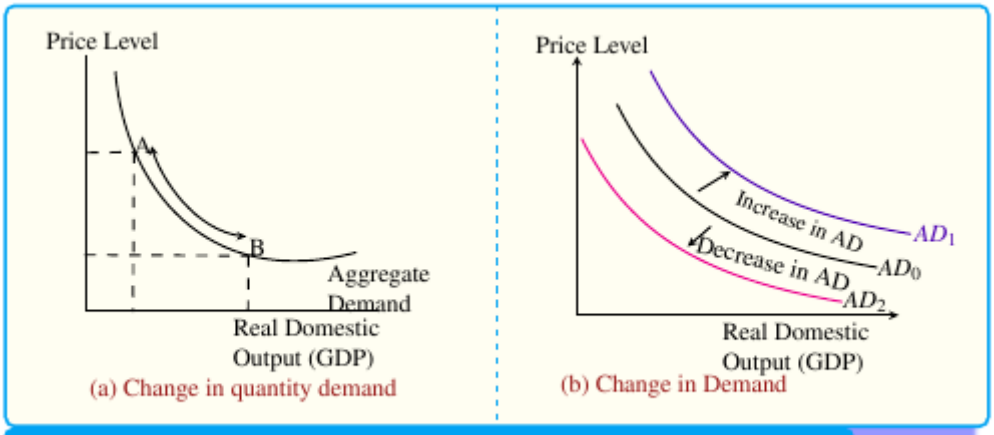


Figure 2.2 Change in Quantity Demanded Vs Change in Aggregate Demand

2.1.3 Shifts in the Aggregate Demand Curve

Dear learner, what are the kinds of variables that lead to shift in aggregate demand? In other words, what can cause aggregate demand to rise and what can cause it to fall? Please, try to think of these questions before you start reading the following detail discussions. That is very nice of you! How do you compare your answers with following answer?

The simple answer to these questions is that aggregate demand changes when the spending on Ethiopian goods and services changes. For example, if spending increases at a given price level, aggregate demand rises; on the other hand, if spending decreases at a given price level, aggregate demand falls.

When individuals, firms, and governments want to buy more Ethiopian goods and services even though the prices of these goods have not changed, then we say that aggregate demand has increased. As a result, the *AD* curve shifts to the right. Of course, when individuals, firms, and governments want to buy fewer Ethiopian goods and services at a given price level, then we say that aggregate demand has decreased. As a result, the *AD* curve shifts to the left. In short, a rise in consumption, investment, government purchases, or net exports will increase spending on Ethiopian goods and services. Similarly, a fall in consumption, investment, government purchases, or net exports will lower spending on Ethiopian goods and services.

Since you now know what causes total expenditure on Ethiopian goods and services to change, you can relate the components of spending to (Ethiopian) aggregate demand. If, *at a given price level,* consumption, investments, government purchases, or net exports rise, aggregate demand will rise and the *AD* curve will shift to the right. On the other hand, If, *at a given price level,* consumption, investment, government purchases, or net exports fall, aggregate demand will fall and the *AD* curve will shift to the left. We can write these relationships as:

Consumption and Aggregate Demand

- **If, at a given price level,** $C \uparrow \Rightarrow G \uparrow \Rightarrow NE \uparrow \Rightarrow AD \uparrow$
- **If, at a given price level,** $C \downarrow \Rightarrow G \downarrow \Rightarrow NE \downarrow \Rightarrow AD \downarrow$

Dear learner, please note that there are two categories of AD determinants. The first one is policy variables which are under government control, e.g. monetary and fiscal policy variables, and exogenous variables which are determined outside the AD-AS framework, e.g. foreign economic activity, technological change.

In this section, you will look at some of the factors that can change consumption, investment, government spending and net exports.

Factors which Affect Consumption

The four factors that can affect consumption are wealth, expectations about future prices and income, the interest rate, and income taxes. Read the discussions in each of them here under.

1. ***Wealth***. Individuals consume not only the basis of their present income but also the basis of their wealth. Greater wealth makes individuals feel financially more secure and thus, more willing to spend. Increases in wealth lead to increases in consumption. For example, if consumption increases, then aggregate demand rises and the *AD* curve shifts to the right. What will happen if wealth decreases? Decreases in wealth lead to a fall in consumption, which in its turn leads to a fall in aggregate demand, consequently, the *AD* curve shifts to the left. To easily understand, please look at the following!

Wealth and Aggregate Demand

- **Increase in Wealth** $\Rightarrow C \uparrow \Rightarrow AD \uparrow$
- **Decrease in wealth** $\Rightarrow C \downarrow \Rightarrow AD \downarrow$

2. ***Expectations about future prices and income***. If individuals expect higher prices in the future, they increase current consumption expenditures to buy goods at the lower current prices. This increase in consumption leads to an increase in aggregate demand. If individuals expect lower prices in the future, they decrease current consumption expenditures. This reduction in consumption leads to a decrease in aggregate demand. Similarly, expectation of a higher future income increases consumption, which leads to an increase in aggregate demand. In contrast to this, expectation of a lower future income decreases consumption, which leads to a decrease in aggregate demand.

Expectations about future prices

- **Expect higher future prices** $\Rightarrow C \uparrow \Rightarrow AD \uparrow$
- **Expect lower future prices** $\Rightarrow C \downarrow \Rightarrow AD \downarrow$

Expectations about future income

- **Expect higher future income** $\Rightarrow C \uparrow \Rightarrow AD \uparrow$
- **Expect lower future income** $\Rightarrow C \downarrow \Rightarrow AD \downarrow$

3. ***Interest rate***. Current empirical work shows that spending on consumer durables is sensitive to the interest rate. Many of these items are financed by borrowing. So, an increase in the interest rate increases the monthly payment amounts which are linked to their purchase and thereby reduces their consumption. This reduction in consumption leads to a decline in aggregate demand. To put it in other words, a decrease in the interest rate reduces monthly payment amounts which is linked to the purchase of durable goods and thereby increases their consumption. This increase in consumption leads to an increase in aggregate demand.

Interest Rate and Aggregate Demand

- **Decrease in Interest Rate** $\Rightarrow C \uparrow \Rightarrow AD \uparrow$
- **Increase in Interest Rate** $\Rightarrow C \downarrow \Rightarrow AD \downarrow$

4. ***Income taxes***: income taxes rise, disposable income decreases and when people have less take-home pay to spend, consumption falls. Consequently, aggregate demand decreases. Reduction in taxes has the opposite effect; it raises disposable income. This is to mean that when people have more take-home pay to spend, consumption rises and aggregate demand increases.

Income Tax and Aggregate Demand

- **Decrease in Income Tax** $\Rightarrow C \uparrow \Rightarrow AD \uparrow$
- **Increase in Income Tax** $\Rightarrow C \downarrow \Rightarrow AD \downarrow$

Factors Affect Investment

Three factors that can change investment are the interest rate, expectations about future sales, and business taxes. Please, critically read the detailed discussions in each of these in order to understand them.

1. ***Interest rate***: changes in interest rates affect business decisions. For example, as the interest rate rises, the cost of a given investment project rises and businesses invest less. As investment decreases, aggregate demand also decreases. On the other hand, as the interest rate falls, the cost of a given investment project falls and businesses invest

more. Consequently, aggregate demand increases.

Interest Rate Investment and Aggregate Demand

- **Decrease in Interest Rate** $\Rightarrow I \uparrow \Rightarrow AD \uparrow$
- **Increase in Interest Rate** $\Rightarrow I \downarrow \Rightarrow AD \downarrow$

2. ***Expectations about future sales:*** businesses invest because they expect to sell the goods they produce. If businesses become optimistic about future sales, investment spending grows and aggregate demand increases. On the other hand, if businesses become pessimistic about future sales, investment spending contracts and aggregate demand decreases.

Expectation about future sales and Aggregate Demand

- **Businesses become optimistic about future sales** $\Rightarrow I \uparrow \Rightarrow AD \uparrow$
- **Businesses become pessimistic about future sales** $\Rightarrow I \downarrow \Rightarrow AD \downarrow$

3. ***Business taxes***: Businesses naturally consider expected after-tax profits when making their investment decisions. For example, an increase in business taxes lowers expected profitability. With less profit expected, businesses invest less. As investment spending declines, aggregate demand declines. A decrease in business taxes, on the other hand, rises expected profitability and investment spending. This in its turn increases aggregate demand.

Business Taxes and Aggregate Demand

- **Business Taxes** $\downarrow \Rightarrow I \uparrow \Rightarrow AD \uparrow$
- **Business Taxes** $\uparrow \Rightarrow I \downarrow \Rightarrow AD \downarrow$

Factors which Affect Government Spending

An increase in government purchases (for example, on military equipment) will shift the aggregate demand curve to the right as long as tax collections and interest rates do not change as a result. In contrast, a reduction in government spending (for example, fewer transportation projects) will shift the curve to the left.

Factors which Affect Net Exports

The main determinants of net export are domestic and foreign incomes, relative price, exchange rate, domestic and foreign trade policies, and preferences and technology. For instance, a change in national income affects net exports. Just as Ethiopians earn a national income, so do people in other countries. For example, as foreign real national income rises, foreigners buy more Ethiopian goods and services. Thus, Ethiopia's exports (*EX*) rise and as exports rise, net exports rise, ceteris paribus. As net exports rise, aggregate demand increases. This process works in reverse, too. This means that as foreign real national

income falls, foreigners buy fewer Ethiopian goods and as a result of which exports fall. This in its turn lowers net exports which reduces aggregate demand.

Foreign real national income and Aggregate Demand

- Foreign real national income ↓⇒ Exports ↓⇒ Ethiopian net exports ↓ ⟹ AD ↓
- Foreign real national income ↑⇒ Exports ↑⇒ Ethiopian net exports ↑⇒ AD ↑

In the case of change in exchange rate affects net exports, when a currency **appreciates** in value if more of a foreign currency is needed to buy it. A currency is said to **depreciate** if more of it is needed to buy a foreign currency. For example, a change in the exchange rate from $1 = 32 Birr to $32 = 1 Birr means that more dollars are needed to buy 1 Birr, and the Birr is appreciates. This is because more dollars are needed to buy 1 Birr, when the dollar depreciates.

Depreciation of nation's currency makes foreign goods more expensive. For example, consider an Ethiopia leather jacket that is priced at 1500 Birr when the exchange rate is 1Birr = 2 Indian Rupee. This would mean a person in India would have to pay 3000 Rupee. Now, suppose that the people in India Rupee depreciates to 3 Rupee =1 Birr. The Indians now have to pay 4500 Rupee for the jacket. This process is symmetrical, so an appreciation in a nation's currency makes foreign goods cheaper.

The depreciation and appreciation of the Ethiopian Birr affect net exports. For example, as Birr depreciates, foreign goods become more expensive. Hence, Ethiopians cut back on imported goods, and foreigners (whose currency has appreciated) increase their purchases on Ethiopian exported goods. If exports rise and imports fall, net exports increase and aggregate demand increases. As the Birr appreciates, foreign goods become cheaper; Ethiopians increase their purchases of imported goods, and foreigners (whose currency has depreciated) cut back on their purchases of Ethiopia's exported goods. So, if exports fall and imports rise, net exports decrease, and thus, lower aggregate demand.

Exchange Rate and Aggregate Demand

- **ETB Depreciates ⇒ Exports ↑ and Imports ↓⇒ Ethiopia's net exports ↑ ⇒ AD ↑**
- **ETB Appreciates ⇒ Exports ↓ and Imports↑⇒ Ethiopia's net exports ↓ ⇒ AD ↓**

Dear learner, have you understood all the concepts discussed above? That is very good. If there is something which is not clear, please reread it, before doing the following Self-test exercise. After doing so, you can try to answer the following self-test questions.

🛠 Self-test Exercise

1. What is aggregate demand?
2. Why do aggregate demands curves shift?
3. Explain why aggregate demand curve slopes are downward.

Checklist of Self-test Exercise

Dear learner, we hope you enjoyed working on this section. Now, it is time to check your understanding about the concept of aggregate demand, aggregate demand curve and the different factors which shift the aggregate demand curve.

Please, read each question and put a tick mark (√) in the 'yes' or 'no' box, which helps you decide on your level of understanding of the points which are presented so far.

Check List	Your Response	
	Yes	**No**
Can you define what Aggregate Demand is?		
Can you list the components of AD?		
Can you explain why demand curve slopes are downward?		

Dear learner, did you mark any box under the 'No' column? If so, please look at the corresponding item to the left and go back to your text and read about it.

2.2 Aggregate Supply

Overview

Once the concepts of aggregate demand, aggregate demand curve and the different factors which shift the aggregate demand curve are explained, this section moves to aggregate supply. In this section, you will study the concepts of aggregate supply, the basic determinants of aggregate supply, the short and long run aggregate supply curves.

Learning Outcomes

At the end of this section, you will be able to:

- define the concept of aggregate supply.
- construct and interpret supply curve.
- describe the basic determinants of aggregate supply.

Please, look at the following important concepts which are the focus of this section.

Key Concepts

- aggregate supply
- Short Run Aggregate Supply Curve
- Real Wages
- Change in Aggregate Demand
- Determinants of Aggregate Supply

Dear learner, from your past experience, what do you understand about aggregate supply curves? What do you think about it? Please, try these questions before you start reading the following detailed discussions. We hope you attempted it! Ok! Now, please read the next notes!

The aggregate demand and aggregate supply model is the basic macroeconomic model for studying output and price level determination. Aggregate demand is one side of the economy; and aggregate supply is the other side.

Generally speaking, aggregate supply refers to the quantity supplied of all goods and services (Real GDP) at various price levels, ceteris paribus. There is a direct or positive relationship between the price level and the amount of real output that firms offer for sale. Aggregate supply also includes both short-run aggregate supply (SRAS) and long-run aggregate supply (LRAS). The short-run aggregate supply and long-run aggregate supply are discussed in the following section in detail.

The Keynesian supply curve is horizontal. Firms will supply whatever amount of good is demanded at the existing price level since there is unemployment. Firms can also obtain as much labour as they want at the current wage. Average costs of production are assumed not to change as their output level changes.

The classical aggregate supply curve is vertical, indicating that the same amount of goods will be supplied whatever the price level is based on the assumption that the labour market is always in equilibrium with full employment of the labour force (Dorrnbushpp, 2011).

2.2.2 The Upward Sloping Aggregate Supply Curve: The Short Run Aggregate Supply Curve (SRAS)

Dear learner, have you ever heard the terms short run and long-run Aggregate Supply Curve? If so, what do these terms mean to you? Please, as a usual read the following carefully until you understand the difference between short run and long-run aggregate supply curves.

The short run is a time horizon during which at least one of the firm's inputs cannot be varied, whereas, the long run, is a time horizon that is long enough for a firm to vary all of its inputs.

The amount of output which firms will to supply depends on the prices they receive for their goods and the amount which they have to pay for labour and other factors of production. Accordingly, the aggregate supply curve reflects conditions in the factor markets as well as the goods' markets.

The short-run aggregate supply (SRAS) curve shows the quantity supplied of all goods and services (real GDP or output) at different price levels, ceteris paribus. Notice also that the SRAS curve is upward sloping: as the price level rises, firms increase the quantity supplied of goods and services; as the price level drops, firms decrease the quantity supplied of goods and services. *Why do you think is the SRAS curve upward sloping?* Economists have put

forth a few explanations, from which we will discuss only two of them,, sticky wages and worker misperceptions.

***Sticky wages*:** some economists believe that wages are sticky, or inflexible. This is the case due to the fact that wages are "locked in" for a few years due to labour contracts entered into between workers and employers. For example, management and labour may agree to lock in wages for the next one to three years, where both may see this as in their best interest. Management has some idea of what its labour costs will be during the time of the contract, and workers on the other hand, may have a sense of security knowing that their wages cannot be lowered. Alternatively, wages may be sticky because of certain social conventions or perceived notions of fairness. Whatever the specific reason for sticky wages, let's see how they provide an explanation of an upward-sloping SRAS curve.

Firms pay nominal wages (e.g., $30 an hour), but they often decide how many workers to hire based on real wages. Real wages are nominal wages which are divided by the price level.

$$\text{Real wage} = \frac{\text{Nominal wage}}{\text{Price level}}$$

For example, suppose that the nominal wage is $30 an hour, and the price level as measured by a price index is 1.50. The real wage is therefore, $20.

Note also that the quantity supplied of labour is *directly related* to the real wage: as the real wage rises, the quantity supplied of labour rises; on the other hand, as the real wage falls, the quantity supplied of labour falls. However, the quantity demanded of labour is *inversely related* to the real wage: as the real wage rises, the quantity demanded of labour falls; on the other hand, as the real wage falls, the quantity demanded of labour rises.

Dear learner, with this as background, supposes a firm has agreed to pay its workers $30 an hour for the next three years and it has hired 1,000 workers. When to this nominal wage was agreed, it was thought that the price index would remain at 1.50 and the real wage would stay at $20.

Now, suppose that the price index *falls* to 1.25. When the price level falls to an index of 1.25, the real wage rises to $24 ($30/1.25). This is a higher real wage than the firm expected when it agreed to lock in nominal wages at $30 an hour. If the firm had known that the real wage would turn out to be $24 (and not remain at $20), it would never have hired 1,000 workers, it would rather have hired, say, 800 workers instead.

So, what does the firm do? As we stated, there is an inverse relationship between the real wage and the quantity demanded of labour (the number of workers that firms want to hire). Now, the real wage has risen (i.e. from $20 to $24). Then, the firm cuts back on its labour (say, from 1,000 to 800 workers). This shows that when fewer workers work, less output is produced.

In conclusion, if wages are sticky, a decrease in the price level (which pushes real wages up) will result in a decrease in output. This is what an upward-sloping *SRAS* curve represents:

as the price level falls, the quantity supplied of goods and services declines.

We hope that you have understood what we mean *Sticky Wages. Haven't you? If you haven't, please read once more before you start reading the next section.* That is good!

Worker misperceptions: another explanation for the upward-sloping SRAS curve holds that workers may misperceive real wage changes. To illustrate this, suppose that the nominal wage is $30 per hour and the price level as measured by a price index is $1.50. Then, it follows that the real wage is $20. Now, suppose that the nominal wage falls to $25 and the price level falls to $1.25. The real wage is still $20 ($25/1.25 = $20), but workers may not know this. They will know that their nominal wage has fallen (i.e. they know that they are earning $25 per hour instead of $30 per hour). They may also know that the price level is lower, but they may not know that initially how much lower the price level is. For example, suppose that they mistakenly believe that the price level has fallen from $1.50 to $1.39. They will then, think that their real wage has actually fallen from $20 ($30/1.50) to $17.98 ($25/1.39).

In response to (the misperceived) falling real wage, workers may reduce the quantity of labour that they are willing to supply. Hence, with fewer workers (resources), firms will end up producing less. In conclusion, if workers misperceive real wage changes, then a fall in the price level will bring about a decline in output, which is illustrative of an upward-sloping SRAS curve.

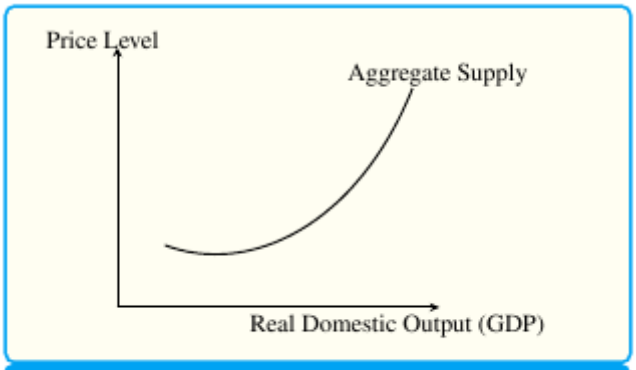


Figure 2.3 Short Run Aggregate Supply Curve (SRAS)

Changes in Short-Run Aggregate Supply and Shifts in the *SRAS* Curve

A change in the quantity supplied of real GDP is brought about by a change in the price level. This is shown as a *movement* along the *SRAS* curve. So, what are the factors that are likely to *shift* the *SRAS* curve?

Aggregate supply is determined by a number of factors. Some of these factors are as follows:

a. cost of input or change in input price
b. domestic resource availability
   - ✔ Managerial ability, land, labour and capital
   - ✔ Price of imported resource
   - ✔ Market power
c. change in productivity

d. state of technology
e. tax policy of government (business taxes and subsidies)
f. weather (applies particularly to agricultural output)

Wage rates: labour is the major input that contributes for cost of production. Hence, wage rate can be taken as an example of cost of input in the supply process. Changes in wage rates have a major impact on the position of the *SRAS* curve because wage costs are usually a firm's major cost item. The impact of a rise or fall in equilibrium wage rates can be understood in terms of the following equation:

$$\text{Profit per unit} = \text{Price per unit} - \text{Cost per unit}$$

Higher wage rates mean higher costs and, at constant prices, are translated into lower profits and a reduction in the number of units (of a given good) managers of firms will want to produce. Lower wage rates mean lower costs and, at constant prices, are translated into higher profits and an increase in the number of units (of a given good) managers will decide to produce.

The impact of higher and lower equilibrium wages is shown in ***Figure 2.4***. At the given price level, P_1 on $SRAS_1$, the quantity supplied of Real GDP is Q_1. When higher wage rates are introduced, a firm's profits at a given price level decrease. Consequently, the firm reduces production. In the diagram below, this corresponds to moving from Q_1 to Q_2, which at the given price level is point B. Point B represents a point on a new aggregate supply curve ($SRAS_2$). Thus, a rise in equilibrium wage rates leads to a leftward shift in the aggregate supply curve. The steps are simply reversed for a fall in equilibrium wage rates.

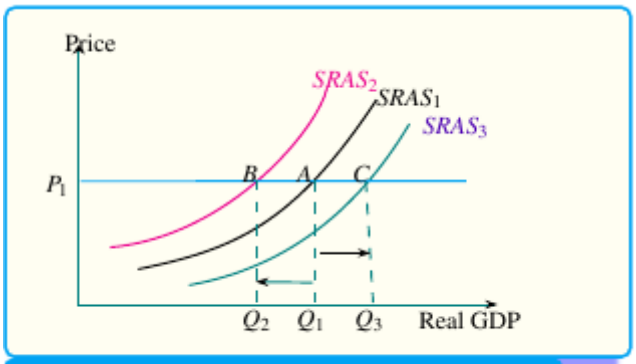


Figure 2.4 Wage rates and a shift in SRAS curve

2.2.3 The Vertical Aggregate Supply Curve: The Long Run (LRAS)

In this sub-section, we will discuss long-run aggregate supply and draw a long-run aggregate supply (*LRAS*) curve. We will also discuss long-run equilibrium and explain how it differs from short-run equilibrium. As explained above, economists give different reasons for an upward-sloping *SRAS* curve. Please, try to recall that those reasons have to do with: sticky wages and workers misperception. It follows, then, that short-run equilibrium identifies the real GDP where the economy produces when either of these two conditions hold. In time, wages will become flexible and misperceptions will turn into accurate perceptions. When this happens, the economy is said to be in the *long run*. In other words, in the long run, these

two conditions do not hold.

An important macroeconomic question is: *Will the level of real GDP that the economy produces in the long run be the same as in the short run?* Most economists say that it will not. They argue that in the long run, the economy produces the full-employment real GDP or the **natural real GDP** (Q_N). The aggregate supply curve that identifies the output of the economy produces in the long run is the **long-run aggregate supply (*LRAS*) curve**.

Dear learner, we hope that you have understood what is discussed in the above paragraph. What about is your opinion regarding the responses of economists? Do you agree or disagree? Why? Ok, that is good! Go on reading the discussions below.

It follows that **long-run equilibrium** identifies the level of real GDP that the economy produces when wages and prices have adjusted to their (final) equilibrium levels and there are no misperceptions on the part of workers. Furthermore, the level of real GDP that the economy produces in the long-run equilibrium is natural real GDP (*QN*).

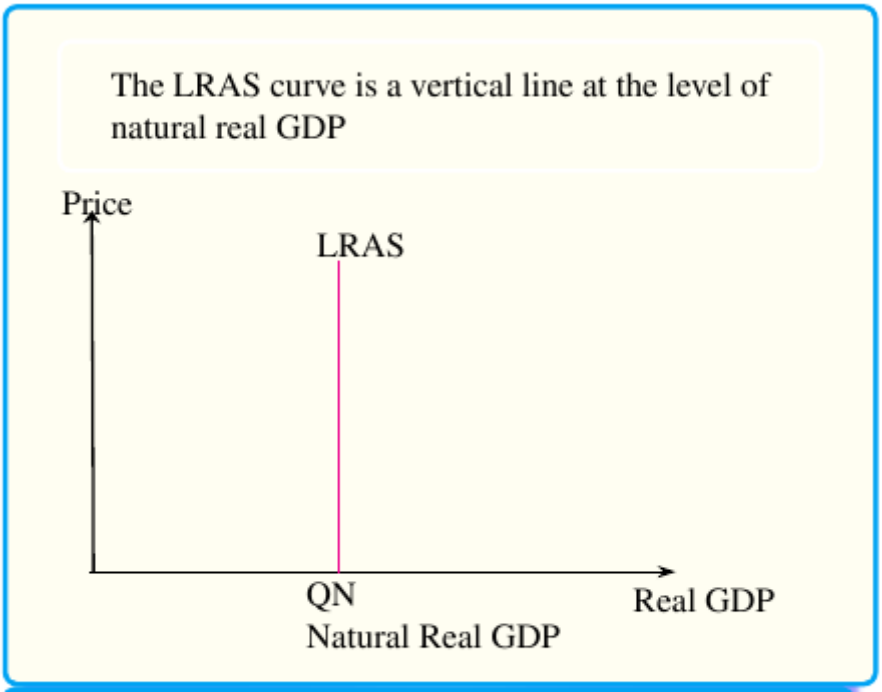


Figure 2.5 Long run Aggregate Supply (LASC) curve

🛠 Self-test Exercise

1. What are the determinants of aggregate supply?
2. Why does the supply curve slope upward to the right?
3. Explain the meaning of the AS curve and why it shifts when technology or factor prices change.
4. How are movements along the supply curve different from shifts of the supply curve?

Checklist of Self-test Exercise

Dear learner, we hope you enjoyed working on this section. Now, it is time to check your understanding about the concept of aggregate supply, the basic determinants of aggregate supply, the short run and long run aggregate supply curves.

Please, read each question and put a tick mark (√) in the 'yes' or 'no' box, which helps you decide your level of understanding of the points presented and discussed so far.

Check List	Your Response	
	Yes	No
Can you define what aggregate supply is?		
Can you describe the basic determinants of aggregate supply?		
Can you explain the difference between short run and long run aggregate supply curves?		

Dear learner, did you mark any box under the 'No' column? If so, please look at the corresponding item to the left and go back to your text and read about it. That is good! Go on reading the next section!

2.3 Equilibrium of Aggregate Demand and Aggregate Supply

Overview

Dear learner, in this section you will study about market equilibrium, concepts of short-run and long-run equilibrium, the difference factors that could cause a change in market equilibrium, and differentiate between demand shock and supply shock.

Learning Outcomes

At the end of this section, you will be able to:

- define market equilibrium.
- identify the concepts of short-run and long-run equilibrium.
- analyse how the market reaches equilibrium, and the possible factors that could cause a change in equilibrium.
- differentiate between demand shock and supply shock.

Key Concepts

- market equilibrium
- short-run equilibrium
- long-run equilibrium
- change in equilibrium

Now, before going to read the details in each of these concepts, write down short note of your own about market equilibrium, short-run and long-run equilibrium, and the difference

factors that could cause a change in market equilibrium. Then, compare what you have written with the discussion under each of the concepts.

Dear learner, please bring aggregate demand and supply curve together to see how the market price of a product is determined. In this section, you have to put aggregate demand and short-run aggregate supply together to achieve short-run equilibrium in the economy. Aggregate demand and short-run aggregate supply determine the price level and real GDP. ***Figure 2.6*** shows that an aggregate demand (*AD*) curve and a short-run aggregate supply (*SRAS*) curve. We consider the quantity demanded of real GDP and the quantity supplied of real GDP at three different price levels: *P*1, P_2, and *PE*.

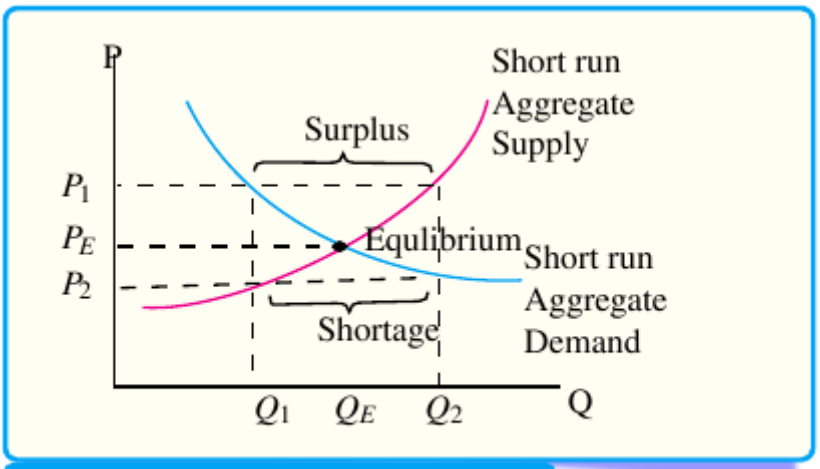


Figure 2.6 Short run equilibrium

At P_1, the quantity supplied of real GDP (Q_1) is greater than that of the quantity demanded (Q_1). This shows that there is a surplus of goods. As a result, the price level drops, firms decrease output, and consumers increase consumption. Why do consumers increase consumption as the price level drops? (**Hint**: think of the real balance, the interest rate, and the international trade effects.)

At P_2, the quantity supplied of real GDP (Q_1) is less than that of the quantity demanded (Q_2). In this case, there is a shortage of goods. As a result, the price level rises, firms increase output, and consumers decrease consumption.

In instances of both surplus and shortages, economic forces are moving the economy towards equilibrium, where the quantity demanded of real GDP equals the (short-run) quantity supplied of real GDP. This is the point of **short-run equilibrium**. P_E is the short-run equilibrium price level; Q_E is the short-run equilibrium Real GDP.

Static Equilibrium

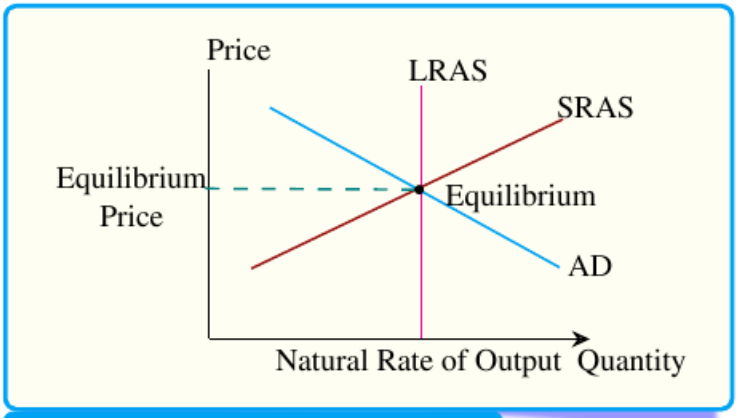


Figure 2.7 Long run Equilibrium

It is obvious that the short-run equilibrium of the economy occurs at the intersection of the aggregate demand and short-run aggregate supply curves and that the long-run equilibrium is where the aggregate demand curve intersects the long-run aggregate supply curve. ***Figure 2.7*** shows this state of long-run and short-run equilibrium. For example, if the aggregate demand curve and aggregate supply curves were to remain unchanged, the economy would continue to produce the natural rate of output and have an equilibrium price indefinitely.

2.3.1 Shocks to Aggregate Demand

Dear learner, as noted above, there are many reasons why the AD and AS curves could shift. A change in aggregate demand, short-run aggregate supply, or both will obviously affect the price level and/or real GDP.

Demand shocks cause P and Y to change in the same direction; both rise with an increase in demand, and both fall with a decrease in demand.

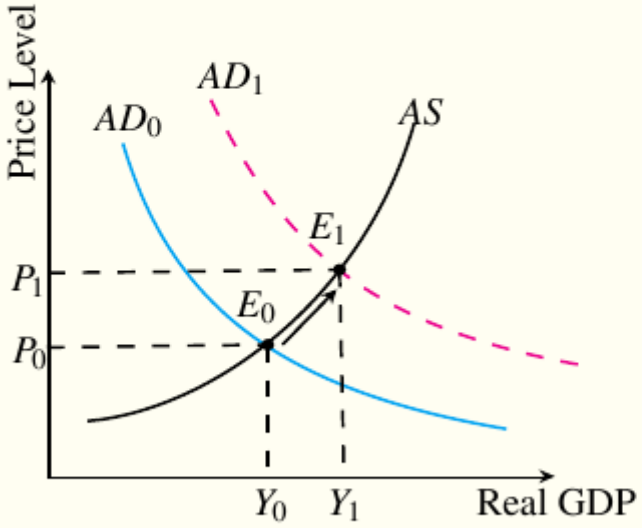


Figure 2.8 Effects of an increase in aggregate demand

Consider first the effects of a one-time unexpected exogenous positive shock to aggregate demand. This could arise from an expansionary monetary-policy action, an expansionary fiscal-policy action, or an increase in desired expenditures from another source. For instance, an increase in aggregate demand shifts the AD curve to the right where more output is demanded at each level of the aggregate price index. A demand shock can either be expansionary or contractionary. An expansionary demand shock shifts the AD curve to the right, increasing both P and Y. Notice also that we use the word "expansionary" or "contractionary" to refer to the effect of the shock on the equilibrium level of output.

2.3.2 Shocks to Aggregate Supply

Aggregate supply shocks cause P and Y to change in opposite directions. For example, an improvement in production technology or an increase in the amount of labour or capital resources available would increase the aggregate amount produced and thus, shift the short-run AS curves to the right. A storm that destroyed agricultural crops or a sudden interruption in the availability of imported inputs such as oil might cause a reduction shift to the left in the AS curves. Consider the effects of a negative supply shock. An example of a negative supply shock is an increase in the price of oil. Beginning at point A, an increase in the price of oil causes a decrease in the supply of the product which results in a leftward shift of the aggregate supply curve from SRAS, results in a decrease in output from Y_1 to Y_2 and an increase in price from P_1 to P_2.

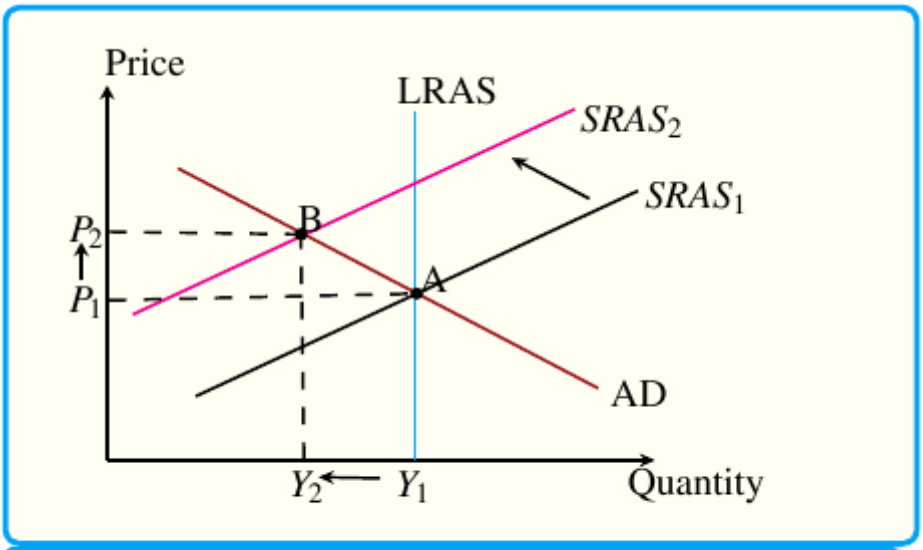


Figure 2.9 Effects of decrease in aggregate supply

Dear learner, how did you find the discussions above? Is everything clear? If not, please reread it before doing the following self-test exercises. Is there anyone who is distance learner like you nearby to you? If there is, get him/her face to face and ask each other if there are points which are not clear. That is nice of you! Now, go on doing the following self-test exercise.

🛠 Self-test Exercise

1. Define "macroeconomic market equilibrium."
2. Explain the effects of aggregate demand and aggregate supply shocks on equilibrium real GDP and the price level.
3. Write the down similarities and differences between short-run and long-run equilibrium.
4. List the major factors that could cause a change in macroeconomic market equilibrium.

Checklist of Self-test Exercise

Dear learner, we hope you enjoyed working on this section. Now, it is time to check your understanding about the concept of aggregate supply, the basic determinants of aggregate supply, the short run and long run aggregate supply curves.

Read each question and put a tick mark (√) in the 'yes' or 'no' box, which helps you decide your level of understanding of the points presented and discussed so far.

Check List	Your Response	
	Yes	No
Can you define what macroeconomic market equilibrium is?		
Can you mention the major factors that could cause a change in macroeconomic market equilibrium?		
Can you explain the difference between short-run and long-run equilibrium?		

Dear learner, did you mark any box under the 'No' column? If so, please look at the corresponding item to the left and go back to your text and reread about it.

Unit Summary

Dear learner, we hope that you have read all the sections in this unit carefully and understood it. Now, it is time for you to think what you understand in the unit. Before going to do the following self-test questions, please read the summary of this unit.

Aggregate demand refers to the total amount of money which all sections (households, firms, and governments) are prepared to spend on the purchase of goods and services that are produced in an economy during a given period. $AD = C + I + G + (X - M)$ The AD curve is a downward sloping curve. It indicates the output (goods and services) which will be demanded in the economy at various general price levels. Determinants of aggregate demand are: general level of income of the people, the real interest rate, and level of

economic activity in other countries (it determines the level of exports), availability of credit, and the level of economic activity in the economy itself.

Aggregate supply refers to the quantity supplied of all goods and services (real GDP) at various price levels in a given period of time, ceteris paribus. Determinants of aggregate supply are the cost of input or change in input price, domestic resource availability, state of technology, tax policy of government (business taxes and subsidies) and weather conditions. The short-run AS curve is an upward sloping, whereas the long-run AS curve is vertical. Interaction between AD and AS determines the equilibrium level of national output and price level.

Unit Review Exercises

Part I: True or False

Read the following statements and write "True" for correct statements and "False" for incorrect ones.

1. Unemployment and inflation can coexist.
2. An increase in business excise taxes will shift the aggregate supply curve leftward.
3. Other things equal, an increase in productivity will shift the aggregate supply curve leftward.
4. An increase in aggregate demand (given no change in aggregate supply) will cause higher inflation.
5. The increase in spending that occurs because of the increases in the real value of money, when the price level falls is called the interest rate effect.

Part II: Multiple Choice

For each of the following questions, choose the best answer from the given alternatives.

1. The aggregate demand curve:
   A. is up-sloping because a higher price level is necessary to make production profitable as production costs rise.
   B. is down sloping because production costs decline as real output increases.
   C. shows the amount of expenditures required to induce the production of each possible level of real output.
   D. shows the amount of real output that will be purchased at each possible price level.
2. Which one of the following would NOT cause a shift in AD?
   A. An increase in government spending
   B. A fall in the cost of production
   C. A reduction in income tax
   D. A reduction in interest rates

3. Which one of the following would NOT cause a SHIFT in AS?
   A. The costs of the factors of production
   B. Incentives
   C. The level of government spending
   D. The structure of the economy
4. Which one of the following is likely to result from a rapid rise in aggregate demand?
   A. Rising prices
   B. Increased unemployment
   C. Static living standards
   D. Surplus on the balance of payments
5. A higher domestic price level will result in
   A. Higher imports.
   B. Higher exports.
   C. Probably both higher imports and higher exports.
   D. Higher net exports.

Part II: Explanation

Distinguish between the following.

1. Change in aggregate supply and change in aggregate quantity supplied.
2. Change in aggregate demand and change in aggregate quantity demanded.
3. How is the equilibrium level of output determined by aggregate demand and aggregate supply? Show this using a diagram.

Answer Key for Self-test Exercises

Part I: True or False

1. True	2. True	3. False	4. True	5. Ture

Part II: Multiple Choice

1. D	2. B	3. D	4. A	5. A

Part III: Explanation

1. A change in aggregate supply means that the aggregate supply curve shifts either left or right. Whereas a change in quantity supplied refers to a movement along the same aggregate supply curve, which is caused only by a chance in price of the goods itself. In this case, the aggregate supply curve doesn't move; rather, it moves

along the existing aggregate demand curve.

2. A change in aggregate demand means that the aggregate demand curve shifts either left or right. Whereas a change in quantity demanded refers to a movement along the same aggregate demand curve, which is caused only by a chance in price of the goods itself. In this case, the aggregate demand curve doesn't move; rather, it moves along the existing aggregate demand curve.
3. Equilibrium level of output is determined where the quantity demanded is equal to the quantity supplied. It is represented on the AS-AD model where the demand and supply curves intersect.

References

Branson, W. (1995). Macroeconomic theory and policy, 2nd Ed, New Delhi: Universal Book Stall.

Dornbush, R. and Fisher, S. (1994). Macroeconomics, Mack Graw Hill.

Edwin Shapiro (1996). Macroeconomic analysis, 5th Ed, New Delhi: Galgota publications.

Mankiw, G. (2000). Macroeconomics, 3rd Ed, worth publishing.

UNIT 3

MARKET FAILURE AND CONSUMER PROTECTION

Time Allotted: 12 hours

INTRODUCTION

Dear Learner, in the free market, the equilibrium of a market is determined by the market forces of demand and supply. However, the equilibrium price and the equilibrium quantity of a good may not be the optimal price and quantity. For example, tobacco and alcohol are over-consumed and education and healthcare are under-consumed in the absence of government intervention. Market failure occurs when the free market fails to allocate resources efficiently or distribute goods and services equitably.

Allocative efficiency is achieved when it is impossible to change the allocation of resources in the economy in a way that will increase the welfare of society. This occurs when marginal social benefit is equal to marginal social cost. Marginal social benefit is the sum of marginal private benefit and marginal external benefit, whereas marginal social cost is the sum of marginal private cost and marginal external cost. On the other hand, external costs and benefits, or externalities, are costs and benefits of consumption or production which are experienced by society other than the producers or the consumers. Although the free market has numerous merits, it may not allocate resources efficiently or distribute goods and services equitably.

In this unit, market failure, public goods, externalities, asymmetric information and consumer protection will be discussed.

Learning Outcomes

After completing this unit, you will be able to:

- understand market failure.
- analyse the cause of market failure.
- state the characteristics of public goods.
- outline the concept of externalities and asymmetric Information.
- know the concept of consumer protection.

Unit Contents

Unit Summary

Self-test questions

Answer Key for Self-test Exercises

References

Dear learner, we expect you to complete this unit in **12 hours**. Please, assess your progress, performance and overall understanding by referring to the learning outcomes, self-test exercises and checklists. We also expect you to learn at your own pace and cover portions of the subject within a defined time frame as a requirement.

Learning Strategies

Dear learner, please, use the following and other learning strategies to successfully learn this unit. These strategies include:

1. Create a schedule and follow it.
2. Take the time to research questions.
3. Assess the technology used in the course.
4. Utilize alarms and calendars to keep you abreast with deadlines.
5. Appreciate and value yourself.
6. Participate in tutorial classes
7. Search for different available learning opportunities that will help you to better understand the subject

3.1 Market Failure

Overview

Dear learner, in this section you will study about the concept of market failure and the different types of market failures.

Learning Outcomes

At the end of this section, you will be able to:

- define market failure.
- explain the different types of market failures.
- analyse the solutions of market failures.

Key Concepts

Dear learner, please don't forget the following important concepts which will be discussed in detail in this section of the unit.

- Market Failure

- ☞ Common Types of Market Failures

Now, please, proceed to the detail discussions of this section.

Dear learner, what is market failure from your point of view? What possible solutions can you suggest to solve the problem of market failure? Have you attempted? It is appreciable. Now, have a look at the next text about market failure.

Market failure is the economic situation defined by an inefficient distribution of goods and services in the free market. It occurs when the price mechanism fails to account for all of the costs and benefits that are necessary to provide and consume a good. Furthermore, the individual incentives for rational behaviour do not lead to rational outcomes for the group. In other words, each individual makes the correct decision for himself/herself, but these may prove to be the wrong decisions for the group. In traditional microeconomics, this is shown as a steady state disequilibrium in which the quantity supplied is not equal to the quantity demanded.

- ✔ The structure of market systems contributes to market failure. It is obvious that in the real world that it is not possible for markets to be perfect due to inefficient producers, externalities, environmental concerns, and lack of public goods.
- ✔ Government responses to market failure include legislation, direct provision of merit and public goods, taxation, subsidies, tradable permits, extension of property rights, advertising, and international cooperation among governments.

A market failure occurs whenever the individuals in a group end up worse off than if they had not acted in perfectly rational self-interest. Such a group either incurs too many costs or receives too few benefits. The economic outcomes under market failure deviate from what economists usually consider optimal and are usually not economically efficient. Even though the concept seems simple, it can be misleading and easy to misidentify.

Contrary to what the name implies, market failure does not describe inherent imperfections in the market economy-there can be market failures in government activity, too. One noteworthy example for this is that rent-seeking by special interest groups. Special interest groups can gain a large benefit by lobbying for small costs on everyone else, such as through a tariff. When each small group imposes its costs, the whole group is worse off than if no lobbying that had taken place.

Additionally, not every bad outcome from market activity counts as a market failure. Nor does a market failure imply that private market actors cannot solve the problem. On the flip side, not all market failures have a potential solution, even with prudent regulation or extra public awareness.

3.1.1 Common Types of Market Failures

Commonly cited market failures include externalities, monopoly, information asymmetries, and factor immobility. One of the examples to illustrate market failure is the public goods problem. Public goods are goods or services for which the producer cannot limit consumption

to paying customers and for which the consumption by one individual does not limit the consumption by others.

National defence is one among such public goods because each citizen receives similar benefits regardless of how much they pay. It is very difficult to privately produce the optimal amount of national defence. Since governments cannot use a competitive price system to determine the correct level of national defence, they also face major difficulty producing the optimal amount. This is an example of a market failure with no pure solution.

3.1.2 Solutions to Market Failures

There are many potential solutions for market failures. These can take the form of private market solutions, government-imposed solutions, or voluntary collective action solutions.

Externalities such as pollution are solved with tort lawsuits that increase opportunity costs for the polluter. Tech-companies that receive positive externalities from tech-educated graduates can subsidize computer education through scholarships.

Governments can also impose taxes and subsidies as possible solutions. Subsidies can help encourage behaviour that can result in positive externalities. Meanwhile, taxation can help cut down negative behaviour. For example, placing a tax on tobacco can increase the cost of consumption, therefore making it more expensive for people to smoke.

Private collective action is often employed as a solution to market failure. Parties can privately agree to limit consumption and enforce rules among themselves to overcome the market failure of the tragedy of the commons. Consumers and producers can band together to form co-ops to provide services that might otherwise be underprovided in a pure market, such as a utility co-op for electric service to rural homes or a co-operatively held refrigerated storage facility for a group of dairy farmers to chill their milk at an efficient scale.

Dear learner, have you understood all the concepts discussed above? That is very good. If there is something not clear, please reread it, before doing the following self-test exercise.

Self-test Exercise

1. What is market failure?
2. Explain some common causes of market failure?
3. What possible solutions can you suggest to solve the problem of market failure?

Checklist of Self-test Exercise

Dear student, we hope you enjoyed working on this section. Now it is time to check your understanding about concept of aggregate demand, aggregate demand curve and the different factors which shift the aggregate demand Curve. Read each question and put a

tick mark (√) in the 'yes' or 'no' box, which helps you decide on your level of understanding of the points presented so far.

Check List	Your Response	
	Yes	No
Can you define what market failure is?		
Can you explain some common causes of market failure?		
Can you suggest possible solutions to solve the problem of market failure?		

Dear learner, did you mark any box under the 'No' column? If so, please look at the corresponding item to the left and go back to your text and read about it.

3.2 Public Goods

Overview

Once the concepts of market failure, this section moves to public goods. In this section, you will study the concepts of public goods and its main characteristics, efficiency difference between pure public and private goods.

Learning Outcomes

At the end of this section, you will be able to:

- define public goods.
- explain the characteristics of public goods.
- explain the free rider problem.
- Compare and contrast efficiency difference between pure public and private goods.

Key Concepts

Please, look at the following important concepts that you should read carefully in the following sections and understand.

- ☞ Public goods
- ☞ Free rider

Dear learner, from your past experience, what do you understand about public goods? What makes them different from the private goods? What do you think about it? Please, try these questions before you start reading the following detailed discussions. We hope you attempted it! Ok! Now, please read the next text!

Definition and Features

Public goods are goods whose benefits are shared. Generally speaking, public goods have two major features.

- **Non rivalry in consumption**: once the good is provided or supplied, consumption by one person does not reduce the quantity which is available for consumption by another. This means that the same amount is left for the remaining consumers. This implies that the cost /marginal cost of allowing another person to consume the good is zero.
- **Non-excludability**: it is difficult and expensive to prevent or to exclude someone (non-payers) from consuming the good.

Goods that fulfil both these properties are known as "pure public goods". Examples of such goods are national defence, clean air, biodiversity, wilderness, etc. These are extreme cases. At the other extreme, pure private goods which are rivalrous in consumption and excludable. Most goods around us fall into this category. E.g. Food items, clothes, household furniture, houses.

There are also goods which fall in between these two extremes. A good can satisfy one part of the definition of a public good and not another. These kinds of goods are called "impure public goods". Based on this, we can generally classify public goods into four major groups, as presented in ***Table 3.1*** below.

Table 3.1 Characteristics of public goods

Rivalry	Excludability	
	Excludable	**Non Excludable**
Rivalrous	Pure private goods (e.g. Food, clothing, cars, pens etc.)	Common pool resources or Congestible goods (Example: fish stocks, timber, coal, national health service, Road etc)
Non Rivalrous	Club goods (e.g. cinemas, private parks, satellite television, etc.)	Pure public goods(e.g. National defense, air, free to air television, etc)

Classification of goods as public goods is not absolute; it depends on market conditions and technology. Technology now allows radio or TV broadcasts to be encrypted so that those without a special decoder are excluded from the broadcasts. Many forms of information have characteristics of public goods. For example, a poem can be read by many people without reducing the consumption of those goods by others; in this sense, it is non-rivalrous. However, the individual who wrote the poem may prohibit non-payers from using it through copyright (excludable). Some countries have developed tool booths and radio waves to monitor traffic and enforce some payments of using certain road (for example, Ethiopian express roads Addis Ababa to Adama or Addis Ababa to Hawassa). Hence, with the help of technology excludability can easily be applied.

- Another aspect of public goods is that although everyone consumes the same quantity of goods, they may not value them equally. For example, for some individuals, national defence is very important while others do not care for it, some others still value it negatively though it is equally available to all.

- A number of things that are not conventionally considered to be commodities have public good characteristics. Examples include honesty, fair income distribution, certain information, polio vaccination, and HIV/AIDS blood tests.
- Private goods are not necessarily supplied by the private sector; government may provide private goods too. Many private goods such as electricity and telecommunications are supplied by governments and many pubic goods like protection and guarding are supplied by the private sector.
- Public provision of a good does not necessarily mean that it is produced by the public sector/government. For instance, a government/municipality may collect the garbage using its own trucks and labour or it may hire a private firm to do the job. In both cases, the government provides the services, but it produces only in the former case. ***Table 3.2*** distinguish the difference between pure private and pure public goods.

Table 3.2 Distinguish between pure private and pure public goods

No	Criteria	pure private good	pure public good
1	Divisibility	At certain price, individuals may consume different amounts.	Indivisible: the same quantity is available to different individuals.
	a) The ability to price a good	Benefits can be priced	Benefits cannot be priced since individuals do not have the incentive to reveal their true preferences.
	b) Principle of exclusion	Possible to apply	Cannot be applied
2	Externality	No externality	Usually characterized by the existence of externality
3	Marginal cost	There is usually positive MC i.e. additional cost by the additional person	Characterized by zero MC. Additional cost incurred by an additional person in obtaining the service is zero
4	Decreasing average Cost	It may or may not be subject to economies of scale depending on the size and scale of production.	Characterized by decreasing AC since they are subjected economies of scale

The free rider (social loafer)

A person who seeks to enjoy the benefit of public goods without contributing anything to the cost of financing the amount made. This problem was first observed in trade union where not-members benefit from the successful bargaining of unions members. As result, they were not willing to become a member and make a contribution. Free ridership arises as public goods are non-excludable. Since it is difficult to exclude non-payers from using/ benefiting, there is an incentive not to pay/to be free rider. It is this free rider problem that causes markets to operate inefficiently for public goods. Suppose that individual A chooses to be free rider. Since B is equally smart, he/she also has an incentive to let other people pay. Hence, there is no automatic force that makes the good provided. For this reason,

market is failed to supply it. The private market may provide no output as no one is willing to purchase it.

Other Mechanisms for Providing the Efficient Level of Public Goods

In those cases where the private market fails to provide the efficient level of public goods, provision of public goods requires collective action. People need to realize that public goods' situation exists and either raise contributions from private individuals to fund the public goods or let the government provides the public goods. Mechanisms to provide public goods include the following:

a. private provision of excludable public goods (e.g. movies, music concerts).
b. public provision of excludable public goods through the use of entrance fees(e.g. entrance fees for a National Park).
c. public provision of non-excludable public goods through the use of tax revenues (e.g. taxes earmarked for national defence).
d. religious beliefs, e.g. church/mosque services are public goods; during the ceremony a basket is passed around for collections. Religion can prevent free riding by convincing people that God is watching.

🛠 Self-test Exercise

1. What are public goods? How are they distinguished from private goods?
2. What are the characteristics of public goods?
3. Give examples of public goods, and state why such goods cannot be provided through market?

Checklist of Self-test Exercise

Dear learner, we hope you enjoyed working on this section. Now, it is time to check your understanding about the concept of public goods, the main characteristics of public goods, efficiency difference between pure public and private goods.

Please, read each question and put a tick mark (√) in the 'yes' or 'no' box, which helps you decide your level of understanding of the points presented and discussed so far.

Check List	Your Response	
	Yes	No
Can you define what public good is?		
Can you describe the main characteristics of public goods?		
Can you explain the efficiency difference between pure public and private goods?		

Dear learner, did you mark any box under the 'No' column? If so, please look at the corresponding item to the left and go back to your text and read about it. That is good! Go on reading the next section!

3.3 Externalities

Overview

Dear learner, in this section you will study about the concept of externalities, nature and types of externality, externality and efficiency and solutions for externality.

Learning Outcomes

At the end of this section, you will be able to:

- define the concept of externalities.
- describe positive and negative externalities.

Key Concepts

- Externalities
- Positive externalities
- Negative externalities

Now, before going to read the details in each of these concepts, write down short note of your own about externalities, positive and negative externalities. Then, compare what you have written with the discussion under each of the concepts.

Definition, nature and types of externality

Dear learner, an externality occurs when the consumption or the production of goods has positive or negative effects on other people's utility where these effects are not reflected in the price.

What is the difference between positive and negative externalities? Positive externalities occur when one person's consumption of a good also increases other people's utility without them having to pay for it. On the other hand, negative externality occurs when one person's consumption of good decreases, other people's utility without them receiving any compensation. This is also true in case of production. Firms produce goods, but in doing so they also pollute the environment. The pollution does not cost the firm anything, but there is a negative externality to society.

Examples: smoking contaminates the clean air in the room or environment. Non-smokers suffer while they have no part in its in consumption. Downstream farmers suffer from the effects of sewage discharge into rivers, while no compensation is made for them through market mechanism.

The characteristics of externalities are listed below:

1. As mentioned above, externalities can be either positive or negative. Some externalities are beneficial, while others are harmful. An economic agent is said to generate positive externalities when its activities benefit the third party. It generates negative externalities when its activity harms the third party. Here, we consider the producer/seller as first party, and the buyer as the second party. Examples of activities that generate positive externalities include, flower farming, education, street light, neighbouring fence, park, beautifying land escape, neatness of neighbourhood, etc. Activities that generate negative externalities are smoking, shouting, and manufacturing of products such as textiles or leather garments which emit carbon dioxide to the air and waste into the nearby rivers. Pollution, global warming, and climate change are also negative externalities.
2. Externalities can be generated by consumers or producers. E.g, smoking by individuals and some manufacturing both cause air pollution. Externalities can be viewed as special kind of public good or bad. They are no rival, and non-excludable. And public good generate external benefit.
3. Externalities are reciprocal in nature.

A firm may impose externalities on residents by creating bad smell or odour on the other hand, resident demand for less aroma which can be seen as imposing cost upon firm. Fishermen can be thought as polluting as it creates cost upon producers in using the water. Smoker imposes an extensity on non-smoker, but non-smoker also imposes a burden on smoker. This concept is related to the question that whether the injured or injurer is responsible in car accident. Externalities are not the result of one person's action, but results from combined action of two or more parties.

Externality and Efficiency

In the presence of externality, the free market economy will not allocate resources efficiently. This is because the presence of negative or positive externality creates a difference between marginal cost (MC) and price (P) as efficiency requires MC = P.

1) **Negative Externality and Efficiency**

When there is negative externality, $MSC > MPC$, as there is an external cost of pollution. This will create a difference between MPC and P, and hence inefficiency. Graphically, we can analyse it as follows. Where MSC is marginal social cost, MPC is marginal private cost, MEC is marginal external cost and $MSC = MPC + MEC$.

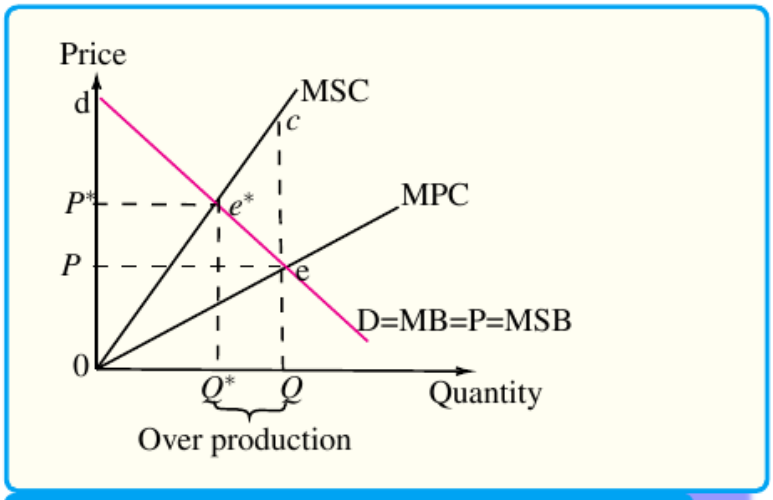


Figure 3.1 Negative externality and efficiency

Profit maximizing condition requires MPC=P and hence, point e. whereas the social optimal point is at e*. Therefore, over production arises to the amount of Q*Q.

At point e, Welfare= Consumer surplus + Producer surplus – external cost

$$W = Ped + oeP - oec = oe^*d + ee^*c$$

At point e^* Welfare= Consumer surplus + Producer surplus

$$W = P^*e^*d + oe^*P^* = oe^*d$$

Thus, W of point e*< W of point e by the amount of ee*c and hence, there is dead weight loss or efficiency loss to the amount of ee*c.

2) **Positive Externality and Efficiency**

In the presence of positive externality, MSB > *MPB* as there is external benefit. This will create the difference between MPB and MC, and hence inefficiency. Graphically, we can analyse it as in ***Figure 3.2***.

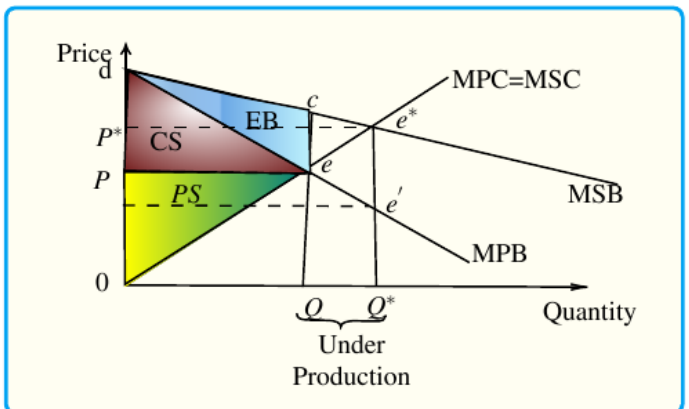


Figure 3.2 Positive externalities and efficiency

MSB =MPB + MEB. Profit maximizing condition requires MPB=MC and hence, point e. The social optimal point is at e*. Therefore, under production arises to the amount of QQ*.

At point e, W= Consumer surplus + Producer surplus+ External benefit

= Ped + oep + dec

= oed + dec

At pint e*, Welfare = Consumer surplus + Producer surplus

= P*e*d+ oe*p*

= oed + dec + ee*c

Thus, W of point e*>W of point e by the amount of ee*c and hence there is a dead weight loss or efficiency loss to the amount of ee*c.

In general, inefficiency is created due to over production and under production or due to the difference between the profit maximizing and social optimal levels of output.

Suggested solutions to avoid externality

1. **Solutions for negative externality**

a. Per unit tax equivalent to the amount of the difference between SMC and PMC corresponding to the socially optimal output. From figure 3.2. the per unit tax should be $e'e^*$. Therefore, the total amount of tax to be imposed should be equivalent to "$Oe'e^*$".

However, we should bear in mind that this type of solution was proposed for the first time by A.C. Pigou in 1920 on the basis of the following assumptions.

- Externality is the difference between MSC and MPC.
- There is competitive industry.
- A firm producing output and emitting smoke.
- Pollution per unit of output is constant.
- The external cost of pollution is borne by others.

b. Private bargaining between the affected parties. This solution was proposed by Coase in 1960 on the basis of the following assumptions:

- zero and minimum transaction cost
- small number of individuals (the parties affected are relatively small).
- well defined initial property rights.

Therefore, according to Coase, given the above assumptions, the optimum outcome depends on the bargaining power of the parties which is known as the Coase theorem. Bear in mind that optimum pollution does not mean zero pollution as the latter implies zero production.

c. Defining and enforcing property rights for those who would like to pollute the environment. This means the sale of property rights. Since producers incur some additional costs due to the property rights, they will take this consideration into their production decisions and hence, produce relatively smaller quantities, as a result of which less pollution occurs.

However, there is one limitation of assigning/selling property rights. That is, the market in which we exchange these property rights may not be a perfectly competitive markets.

2. Solutions for positive externality

a. Provide per unit subsidy which is equivalent to the difference between SMB and PMB corresponding to the socially optimal output. Thus, if private firms are subsidized, they will supply optimal output. As we can see from Figure 3.2, the per unit subsidy should be e'e* and hence, the total amount of subsidy to be provided is de'e*.

b. The government itself can supply the product at a price of P_s and hence, bear the loss. As can be seen from the preceding figure.

In general, all solutions to externality (positive and negative) problems recognize that the need for internalizing externalities. This is to say that the external cost (benefit) should be in the private cost (benefit) of individuals so that people take into account the external effects in their actions/decisions.

Self-test Exercise

1. What is an externality?
2. What is meant by positive and negative externalities? Give examples.

Checklist of Self-test Exercise

Dear learner, we hope you enjoyed working on this section. Now, it is time to check your understanding about the concept of externalities, nature and types of externality, externality and efficiency and solutions for externality.

Please, read each question and put a tick mark (√) in the 'yes' or 'no' box, which helps you decide your level of understanding of the points presented and discussed so far.

Check List	Your Response	
	Yes	No
Can you define what externality is?		
Can you describe the nature and types of externality?		
Can you explain the solutions for externality?		

Dear learner, did you mark any box under the 'No' column? If so, please look at the corresponding item to the left and go back to your text and read about it. That is good! Go on reading the next section!

3.4 Asymmetric Information

Overview

Dear learner, in this section you will study about asymmetric information and its implications.

Learning Outcomes

At the end of this section, you will be able to:

- define asymmetric information.
- outline the implications of asymmetric information.

Key Concepts

- Asymmetric information
- Adverse Selection
- Moral Hazard

Dear learner, from your past experience, what do you understand about asymmetric information? What do you think about it? Please, try these questions before you start reading the following detailed discussions. We hope you attempted it! Ok! Now, please read the next text!

Asymmetric information is a situation in which different agents have a different amount of information about a good. In other words, asymmetric information is when one party in a transaction is in possession of more information than another. In certain transactions, sellers can take advantage of buyers because asymmetric information exists whereby the seller has more knowledge of the good being sold than the buyer.

In general, information asymmetry deals with the study o\f decisions in transactions where one party has more information than another. This creates an imbalance in power in transactions which can sometimes cause the transaction to go away. Two types of problems associated with asymmetric information are adverse selection and moral hazard.

Adverse Selection Problem

This refers to situations where one side of the market cannot observe the "type" or quality of the goods on the other side of the market. It is sometimes known as "hidden information problem" or "anti-selection problem" or "negative selection problem". Adverse selection problem is a term that is used in economics, insurance, statistics and risk management.

Examples:

i) When bad results occur due to information asymmetries between buyers and sellers, the bad products or customers are more likely to be selected.

ii) Health insurance is more likely to be purchased by people who are more likely to get sick.

Moral Hazards Problem

This refers to situation where one side of the market cannot observe the actions of the others. It is sometimes known as "hidden action problem". In simple words, it is the inability to observe and/or verify the agents' action. Furthermore, it is the prospect that a party insulated from risk may behave differently from the way it would behave if it was fully exposed to the risk. A moral hazard problem arises when an individual or situation does not bear the full consequences of its actions, and therefore has a tendency to act less carefully than it otherwise would, leaving another party to bear some responsibility for the consequences of those actions.

Examples:

i) An individual with insurance against automobile theft may be less vigilant about locking his/her car, given that the negative consequences of automobile theft are (partially) borne by the insurance company.

ii) Ex-post moral hazard: insured parties do not behave in a more risky manner that results in more negative consequences, but they do ask an insurer to pay for more of the negative consequences from risk as insurance coverage increases.

E.g. without medical insurance, some forgo medical treatment due to its costs or simply deal with substandard health. But, after medical insurance becomes available, some may ask and insurance provider to pay for the cost of medical treatment that would not otherwise have undergone.

Solutions for moral hazard and adverse selection

Signalling: this is the idea that one party (agent) conveys some meaningful information about itself to another party (principal).

Examples:

i. Employees signal the levels of their skills to employers by acquiring a certain degree of education.

ii. In a market for used goods, those who own a good used car can offer warranty so that owners of good used car are signalling that they have good cars as owners of bad used cars cannot afford.

Limitations:

- How much time, energy, or money should the sender (agent) spends on sending the signal?
- How can the receiver (principal) trust the signal to be an honest declaration of information?

- Assume that there is signalling equilibrium (sender signals honestly and receiver, trusts that information), under what circumstances will that equilibrium break down?

Screening refers to a strategy of combating adverse selection. Assume that there are two individuals Hana and Hikma. Hana knows more about herself than Hikma knows about Hana. If they are going to engage in some sort of transaction, they need to develop a long-term relationship. The screener (the one who is with less information, Hikma) attempts to rectify this asymmetry by learning as much as she can about Hana.

Examples:

i. Banks often screen people who are interested in borrowing money in order to weed out those who will not be able to repay the debt. They might also ask potential borrowers for their financial history, job security, and reason for borrowing assets, education, experience, etc.

ii. Offering health insurance as part of the package of fringe benefits. The insurance company can base its rates on the averages over the set of employees and is assured that all employees will participate in the program, thus eliminating the adverse selection.

Dear learner, we hope that you have read what is discussed in the above sub-sections. Haven't you? That is nice of you! Hence, you need to test yourself whether you have understood what you have read or not by trying the following Self-test exercise.

1.Define asymmetric information.

2.Explain how asymmetric information leads to adverse selection.

3.List the possible solutions for adverse selection and moral hazard.

3.5 Consumer Protection

Overview

Dear learner, in this sub-section you will study about the concept of consumer protection, the need for consumer protection, rights and responsibilities of consumers, and main provisions of the consumer protection.

Learning Outcomes

At the end of this section, you will be able to:

- explain the concept of consumer protection.
- outline the need for consumer protection.
- describe the rights and responsibilities of consumers.
- analyse the main provisions of the Consumer Protection Act.

Key Concepts

- Consumer protection
- Need for Consumer Protection

Dear learner, what important ideas come into your mind when you think of consumer protection? What is consumer protection from your point of view? Have you attempted? Oh, it is appreciable. Now, have a look at the next text about consumer protection

Concept of Consumer Protection

We buy a variety of goods and receive services in our day-to-day life. Whatever we buy, we pay for it and derive satisfaction from its consumption and use. However, sometimes we do not feel satisfied with the product we buy. This may be on account of poor quality of the product, overcharging by the shopkeeper, lower quantity of parts, misleading advertising, and so on. Should we allow these practices to continue? Obviously not; then, is there any remedy for such malpractices? The answer lies in the concept and practice of consumer protection, the rights and responsibilities of consumers, legal provisions and mechanisms for settlement of consumer grievances. In this section, we will examine the details about all these points.

Consumer protection means safeguarding the interest and rights of consumers. In other words, it refers to the measures adopted for the protection of consumers from unscrupulous and unethical malpractices by the business in order to provide them with speedy redressal of their grievances. The most common business malpractices leading to consumer exploitation are given below.

a) Sale of adulterated goods, i.e., adding something inferior to the product being sold.
b) Sale of spurious goods, i.e., selling something of little value instead of the real product.
c) Sale of sub-standard goods, i.e., sale of goods which do not conform to prescribed quality standards.
d) Sale of duplicate goods.
e) Use of false weights and measures leading to underweight.
f) Hoarding and black-marketing leading to scarcity and rise in price.
g) Charging more than the maximum retail price fixed for the product.
h) Supply of defective goods.
i) Misleading advertisements, i.e., advertisements that falsely claim a product or service is of superior quality, grade or standard.
j) Supply of inferior services, i.e., quality of service is inferior to the quality agreed upon etc.

What are some of business malpractices in your area? Give examples. Should we allow this to happen? So, the measures adopted by the government or non-government organizations (NGOs) for safeguarding the interests of the consumers constitute consumer protection.

Need for Consumer Protection

The necessity of adopting measures to protect the interest of consumers arises mainly due to the helpless position of the consumers. There is no denying the fact that the consumers have the basic right to be protected from the loss or injury which is caused by defective goods and deficiency of services. But many consumers do not exercise their rights due to lack of awareness, ignorance or laziness. However, in view of the prevailing malpractices and their vulnerability to them, it is necessary to provide them physical safety, protection of economic interests, access to information, satisfactory product standard, and statutory measures for redressal of their grievances. The other main arguments in favour of consumer protection are outlined below:

Social Responsibility

The business must be guided by certain social and ethical norms. It is the moral responsibility of the business to serve the interest of consumers. Keeping in line with this principle, it is the duty of producers and traders to provide the right quality and quantity of goods at fair prices to consumers.

Increasing Awareness

Consumers are becoming more mature and conscious of their rights against the malpractices by business. There are many consumer organizations and associations which are making efforts to build consumer awareness, taking up their cases at various levels and helping them to enforce their rights.

Consumer Satisfaction

Consumers' satisfaction is the key to the success of a business. Hence, business people should take every step to serve the interests of consumers by providing them the quality goods and services at reasonable prices.

Principle of Social Justice

In keeping in line with this principle, it is expected from the manufacturers, traders and service providers to refrain from malpractices and take care of consumers' interest.

Principle of Trusteeship

Manufactures and producers are not the real owners of business. This is because resources are supplied by the society. Businesses are merely the trustees of the resources and, therefore, they should use such resources effectively for the benefit of the society, which includes the consumers.

Survival and Growth of Business

Businesses have to serve consumer interests for their own survival and growth. On account of globalization and increased competition, any business organization which indulges in malpractices or fails to provide improved services to their ultimate consumer should find it difficult to continue. Hence, in their own long run interest, they should become consumer oriented.

Consumer protection experience in Ethiopia

In Ethiopia, the ***Consumer Proclamation No. 813/2013*** has provided the rights to consumers. Here is a brief outline of about these rights of consumers.

1. Consumers should receive sufficient and accurate information or explanation as to the quality and type of goods or services they purchase.
2. They should buy goods and services on the basis of their own choice.
3. They should not to be obliged to buy because they looked into quality or options of goods and services or they made price bargains.
4. They should be received humbly and respectfully by any business person and be protected from insult, threat, frustration and defamation by the business person.
5. They should be able to claim compensation either jointly or severally from persons who have participated in the supply of goods or services such as the manufacturer, importer, and wholesaler retailer or in any other way for damages suffered as a result of purchase or use of the goods or services.

The main outcomes of the Consumer Protection Act in Ethiopia are to:

1. protect that the business community from anti-competitive and unfair market practices, and consumers from misleading market conducts, and to establish a system that is conducive to the promotion of a competitive free market.
2. ensure that consumers get goods and services safe and suitable to their health and equivalent to the price they pay.
3. accelerate economic development.

Dear learner, how did you find the discussions above? Is everything clear? If not, please reread it before doing the following self-test exercises. Is there anyone who is distance learner like you nearby to you? If there is, get him/her face to face and ask each other if there are points which are not clear. That is nice of you! Now, you need to test yourself whether you have understood what you have read or not by trying the following Self-test exercise.

🛠 Self-test Exercise

1. Define consumer protection.
2. Explain how consumer protection measures affect business.
3. Analyse the main arguments in favour of consumer protection.

Checklist of Self-test Exercise

Dear learner, we hope you enjoyed working on this section. Now, it is time to check your understanding about the concept of consumer protection, how consumer protection measures affect business, and the need for consumer protection.

Read each question and put a tick mark (√) in the 'yes' or 'no' box, which helps you decide your level of understanding of the points presented and discussed so far.

Check List	Our Response	
	Yes	No
Can you define what macroeconomic market equilibrium is?		
Can you explain how consumer protection measures affect business?		
Can you list the need or the main arguments in favour of consumer protection?		

Dear learner, did you mark any box under the 'No' column? If so, please look at the corresponding item to the left and go back to your text and reread about it.

Unit Summary

Market failure is the economic situation that is defined by an inefficient distribution of goods and services in the free market. Commonly cited market failures include externalities, monopoly, information asymmetries, and factor immobility.

Public goods are goods whose benefits are shared. They have two key characteristics: they are non-excludable and non-rivalrous. These characteristics make it difficult for market producers to sell the goods to individual consumers. **Non-excludable** means, that it is costly or impossible for one user to exclude others from using a good. **Non-rivalrous** means, that when one person uses a good, it does not prevent others from using it.

An externality is a cost or benefit that affects an otherwise uninvolved party who did not choose to be subject to the cost or benefit. **Economic efficiency** is the use of resources to maximize the production of goods; negative externalities are imperfections that limit efficiency. **Symmetric information** means that all parties have complete information about the economic variables that are relevant for their decisions. However, **asymmetric information** arises when some parties know more than others.

Consumer protection means that safeguarding the interest and rights of consumers. In other words, it refers to the measures adopted for the protection of consumers from unscrupulous and unethical malpractices by a business and to provide them speedy redressal of their grievances.

Unit Review Exercises

Part I: True or False

Read the following statements and write "True" for correct statements and "False" for incorrect ones.

1. In the absence of externalities, government actions are needed to ensure the

efficiency of the market system.

2. Market failure is a situation in which there is an efficient allocation of goods and services in the free market.
3. Externalities refer to the side effects of production or consumption that cause private and social costs to differ.
4. Asymmetric information occurs when one party knows more about an economic transaction or asset than the other party does.
5. Consumer protection means jeopardizing the interest and rights of consumers.

Part II: Multiple Choice

For each of the following questions choose the best answer from the given alternatives.

1. Which one of the following is an example of market failure?
   A. Negative externality
   B. Positive externality
   C. Public goods
   D. All of the above
2. A good that is rival and non-excludable is a:
   A. Private good.
   B. Regulated good.
   C. Public good.
   D. Common resource.
3. When people buy insurance, they often adopt risky behavior. This is an example of:
   A. adverse selection.
   B. moral hazard.
   C. a negative externality.
   D. moral hazard and a positive externality.
   E. moral hazard and public goods.
4. Which one of the following statements represent the correct definition of market failure? It means that a market economy will:
   A. fail to secure economic efficiency.
   B. fail to secure Pareto-efficiency.
   C. fail to secure productive efficiency.
   D. fail to secure technical efficiency.
5. All of the following are possible methods of correcting a negative externality **except**:
   A. taxing the producer
   B. forcing the producer to correct the results of the externality
   C. forcing the producer to pay the recipients the cost of the externality
   D. taxing the recipients of the externality and using the revenue to correct the problem
6. An externality is defined as:
   A. an additional cost that is imposed by the government on producers.
   B. a cost or benefit that arises from production and falls on someone other than the producer, or a cost or benefit that arises from consumption and falls on someone other than the consumer.
   C. an additional gain received by consumers from decisions made by the government.
   D. the additional amount that consumers have to pay to consume an additional amount of a good or service.

7. Public goods are those for which consumption is:

   A. Rival.
   B. regulated
   C. non-rival
   D. unregulated

8. Pure private goods are those for which consumption is:

   A. non-rival and excludable
   B. rival and non-excludable
   C. rival and excludable
   D. non-rival and non-excludable

9. Education at a private university is NOT a public good because it is :

   A. excludable
   B. non-rival.
   C. both non-rival and non-excludable.
   D. None of the above answers is correct.

10. Which one of the following is an example of a negative externality?

   A. cigarette smoke in a bowling alley.
   B. a college student listening to music through his headphone.
   C. spoiled milk served at a restaurant.
   D. a truck dumping trash in a legal landfill
   E. a worker calling in sick to work in order to go to a movie instead

Part III: Short Answer and Work Out

For the following questions write short answers and provide required solutions accordingly.

1. What is the free rider problem?
2. What are the two key characteristics of public goods?
3. Explain why the federal government funds national defence.
4. Suppose that a producer of commodity Y is located on the upstream of river Z. The MC of producing Y is given by the function. In addition to this, MC however, an external cost is incurred. Each unit of product Y produces a pollutant that flows to the river, which causes damage valued at Birr 10. Suppose that this external cost is borne by the wider community rather than by the polluting firm. The MR obtained from each unit of Y is given by
   a) Derive the profit maximizing level of output for Y.
   b) Derive the socially optimum level of output for Y.
   c) Explain why the socially efficient level of output is lower than the profit maximizing level output of Y.

Answer Key for Self-test Exercises

Part I: True or False

1. Ture
2. False
3. True
4. True
5. False

Part II: Multiple Choices

1. D	3. B	5. D	7. C	9. A
2. C	4. B	6. B	8. C	10. A

Part II. Workout and Short Answer

1. Examples of public goods include fresh air, national defence, flood control systems, and street lighting. These characteristics make it difficult for market producers to sell the good to individual consumers. This is because the private market is profit-driven, and it produces only those goods for which it can hope to earn a profit.
2. Non-rivalry in consumption and non-excludability.
3. The free rider problem is the burden on a shared resource that is created by its use or overuse by people who aren't paying their fair share for it.
4. Because it is non-rival and non-exclusive. If left to private producers, no individual would have an incentive to pay, because he could simply free ride on the service provided by others.
5. a) MC = 10 + 0.5Y

   MR = 30 – 0.5Y

   MC equal to MR for profit maximisation is

   10 + 0.5Y = 30 – 0.5Y which solves for 20 as the profit maximising output level.

   b) Given that MEC = 10

   SMC = MC + MEC = 10 + 0.5Y + 10 = 20 + 0.5Y and social net benefit maximisation requires

   SMC = MB which is 20 + 0.5Y = 30 - 0.5Y which solves for Y = 10 as the level of output that goes with Allocative efficiency.

   C) Because production of Y output generates a negative externality to the downstream community.

References

Myles, Gareth, D. (1997) *Public Economics.*Cambridge University press

Gruber, Jonathan (2005). PUBLIC FINANCE AND PUBLIC POLICY. New York, NY: Worth Publishers.

Bernand, Harber P. (1999) *Modern Public Finance.* Delhi: AITBS Publishers & Distributors.

UNIT 4

MACROECONOMIC POLICY INSTRUMENTS

Time Allotted: 15 hours

INTRODUCTION

Dear learner, every economy aims at achieving certain well-defined targets relative to its national income and output. Economies over the world also strived for a full employment, stability in prices, and equality in the distribution of income and wealth. How do they plan to achieve all these issues? How are the obstacles to these targets removed? What sorts of macroeconomic policies do they adopt? And how do these policies work? This unit gives introductory-level answers to some of these questions. Specifically, in this unit, we will look at the different types of polices for controlling economic aggregates and how they function to increase output and stabilize the economy.

Unit Learning Outcomes

After completing this unit, you will be able to:

- know the difference among fiscal, monetary and income policy.
- distinguish the difference between expansionary and contractionary fiscal and monetary policies.
- justify how income policy affects aggregate supply and aggregate demand.
- understand the different exchange rate policies

Unit Contents

Dear learner, we expect you to complete this unit in **15 hours**. Please, assess your progress, performance and overall understanding by referring to the learning outcomes, self-test exercises and Checklist of self-test exercises. We also expect you to learn at your own

pace and cover portions of the subject within a defined time frame as a requirement.

Learning Strategies

Dear learner, please, use the following and other learning strategies to successfully learn this unit. These strategies include:

1. Create a schedule and follow it.
2. Take the time to research questions.
3. Assess the technology used in the course.
4. Utilize alarms and calendars to keep you abreast with deadlines.
5. Appreciate and value yourself.
6. Participate in tutorial classes
7. Search for different available learning opportunities that will help you to better understand the subject

4.1 Definition and Types of Macroeconomic Policies

Overview

Dear learner, in this section you will study about macroeconomic policy instruments and the general objectives of macroeconomic policy.

Learning Outcomes

At the end of this section, you will be able to:

- define macroeconomic policy instruments.
- state the general objectives of macroeconomic policy.

Key Concepts

- Macroeconomic policy instruments.
- Objectives of macroeconomic policy.

Dear learner, from your past experience, what do you understand about macroeconomic policy instruments? Why is learning about macroeconomic policies important? Please, try these questions before you start reading the following detailed discussions. We hope you attempted it! Ok! Now, please read the next text!

We know that macroeconomic analysis deals with the behaviour of the economy as a whole with respect to output, income, employment, general price level and other aggregate economic variables. With a view to bringing about desirable changes in such variables, nations, developed as well as developing, need to adopt various macroeconomic policies. These policies and the instruments used for their implementation vary from one economy to another and also according to the prevailing economic conditions within a specific economy.

The economy does not always work smoothly. This is because fluctuations often occur in the level of economic activity. At times the economy finds itself in the grip of recession when levels of national income, output and employment are far below their full potential levels. During recession, there is a lot of idle or unutilized productive capacity, that is, available machines and factories are not working to their full capacity. As a result, unemployment of labour increases along with the existence of excess capital stock. On the other hand, at times the economy is "overheated" which means inflation (i.e., rising prices) occurs in the economy. Thus, in a free market economy there is a lot of economic instability.

The classical economists believed that an automatic mechanism works to restore stability in the economy; recession would cure itself and inflation will be automatically controlled. However, the empirical evidence during the 1930s when severe depression took place in the Western capitalist economies showed that no such automatic mechanism works to bring about stability in the economy. That is why Keynes argued for government intervention to cure depression and inflation by adopting appropriate tools of macroeconomic policy as you learnt in Unit 1.

Every nation wants to raise the level of living of its people. This can be attained by bringing about economic growth which in turn depends on raising the rates of saving and investment and accumulating capital. In this regard, macroeconomic policies can play a useful role in raising the rate of saving and investment and ensure rapid economic growth.

The general objectives of macroeconomic policy are to achieve:

- maximum feasible output
- high rate of economic growth
- full employment
- price stability
- equality in the distribution of income and wealth
- a healthy balance of payments.

To achieve these objectives, different types of macroeconomic policies – fiscal, monetary, income, and foreign exchange policies – are adopted. Each of these policies and their instruments are discussed below.

🛠 Self-test Exercise

1. Define macroeconomic policy instruments.
2. List the objectives of macroeconomic policy

Checklist of Self-test Exercise

Dear learner, we hope you enjoyed working on this section. Now, it is time to check your understanding about the concept of macroeconomic policy instruments and the objectives of macroeconomic policy.

Read each question and put a tick mark (√) in the 'yes' or 'no' box, which helps you decide your level of understanding of the points presented and discussed so far.

Check List	Your Response	
	Yes	No
Can you define what a macroeconomic policy instrument is?		
Can you list the main objectives of macroeconomic policy?		

Dear learner, did you mark any box under the 'No' column? If so, please look at the corresponding item to the left and go back to your text and reread about it.

4.2 Fiscal Policy

Overview

Dear learner, in this section you will study about the concept of fiscal policy, types of fiscal policy, and how fiscal policy can shift aggregate demand and influence the economy.

Learning Outcomes

At the end of this section, you will be able to:

- explain fiscal policy.
- distinguish the difference between expansionary and contractionary fiscal policy.
- explain how expansionary and contractionary fiscal policy can shift aggregate demand and influence the economy.
- analyse the reason why fiscal policy is important.

Key Concepts

- Tools of Fiscal Policy
- Expansionary Fiscal Policy
- Contractionary Fiscal Policy

Dear learner, what important ideas come into your mind when you think of fiscal policy? Have you attempted? Oh, it is appreciable. Now, have a look at the next text about fiscal policy.

Fiscal policy is the expenditure and revenue (tax) policy of the government to achieve the desired objectives.

4.2.1 Tools of Fiscal Policy

There are two key tools of the fiscal policy:

Taxation: funds in the form of direct and indirect taxes, capital gains from investment, etc, which help the government function. Taxes affect the consumer's income and changes in consumption lead to changes in real gross domestic product (GDP).

Government spending: it includes welfare programmes, government salaries, subsidies, infrastructure, etc. Government spending has the power to raise or lower real GDP; hence, it is included as a fiscal policy tool.

In the standard textbook classification, government spending/expenditure has four major components, namely, government spending, transfer payments, grants in aid, and net interest payments.

(a) Government spending (G)

Government spending is the sum of government expenditures on final goods and services. It includes salaries of public servants, purchase of weapons for the military, and any investment expenditure by a government.

(b) Transfer payments

Transfer payments are direct payments to individuals- such as unemployment insurance benefits, social security benefits, medicare, or welfare payments - where goods or services are not provided in return. They are commonly referred to as entitlements because they are not made on a discretionary basis, but are locked in by earlier legislation.

(c) Grants in aid

This reflects federal assistance to state and local governments.

(d) Net interest payments

Net interest payments are interest payments that are made to holders of government debt, less interest which is paid to the government for debts like student loans.

From the revenue side, the four major components of tax revenue (taxes) are the following:

- **Personal taxes** are composed of income taxes and property taxes, and are major sources of total government revenue.
- **Contributions for social insurance** are primarily social security taxes, which are assessed as a fixed percentage of a worker's wages, up to a fixed ceiling (or cap).
- **Taxes on production and imports** are primarily sales taxes, but they also include taxes on imported goods, known as "tariffs".
- **Corporate taxes** are primary taxes on the profits of businesses.
- **Grants in aid** are the federal assistance to state and local governments and are revenue for them (while they are spending for the federal government).

4.2.2 Types of Fiscal Policy

A fiscal policy can be of two types – expansionary or contractionary depending upon prevailing economic conditions.

I. Expansionary Fiscal Policy

In a situation in which an economy is facing the problem of deficient demand, i.e., aggregate demand falling short of output at full employment, there is a depression marked by overproduction, a rise in unemployment, and a fall in prices and incomes. To increase the aggregate demand and thereby total output and employment levels, expansionary fiscal policies are adopted by governments. The major instruments of expansionary fiscal policy are:

- ***Expenditure policy (increase expenditure)*:** the objective of an expenditure policy should be to pump more money into the system in order to boost demand. During a period of deficiency in demand, the government should make large investments in public works like the construction of roads, bridges, buildings, railway lines, canals, etc. In such periods, the government should also provide free education and medical facilities, even though these activities might enlarge budget deficits. The aim is to put more money in the hands of people so that they would also spend more.
- ***Revenue policy (reduce tax rate)*:** Taxes on personal incomes and taxes on expenditures on buildings etc. should be reduced. If possible, taxes on lower income groups should be abolished in order to increase their disposable income for spending. In addition, subsidies, old age pensions, unemployment allowances, grants, interest-free loans, expand so as to increase aggregate demand in the economy.

The aggregate demand/aggregate supply model is useful in judging whether expansionary or contractionary fiscal policy is appropriate. For instance, as we can see in ***Figure 4.1***, the intersection of aggregate demand (AD_0) and aggregate supply ($SRAS_0$) are occurring below the level of potential GDP as the LRAS curve indicates. At the equilibrium (E_0), a recession occurs and unemployment rises. In this case, expansionary fiscal policy using tax cuts or increases in government spending can shift aggregate demand to AD_1, closer to the full-employment level of output. In addition, the price level will rise back to the level P_1 that is associated with potential GDP.

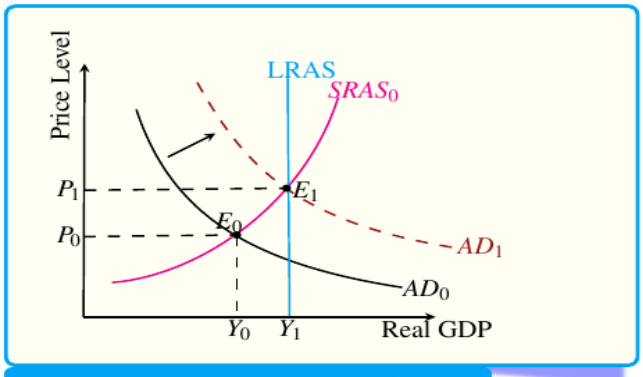


Figure 4.1 Expansionary Fiscal Policy

Contractionary Fiscal Policy

When an economy's aggregate demand is for a level of output that is more than the full-employment, the demand is said to be an excess demand. In other words, excess demand refers to the excess of aggregate demand over the available output at full employment.

This gap results in an inflationary situation as it causes inflation (a continuous rise in prices) in the economy. To control the situation of excess demand and thereby reduce the pressure of high inflation, contractionary fiscal policies are adopted by governments.

Major instruments of contractionary fiscal policy are:

- ***Expenditure policy (reduce expenditure):*** In a situation of excess demand, the government should curtail its expenditures on public works such as roads, buildings, rural electrification, irrigation work, etc., thereby reducing the money income of the people and thus, their demand for goods and services. In this way, the government will reduce the budget deficit, which shows excess expenditure over revenue.
- ***Revenue policy (increase taxes):*** during inflation, the government should raise rates of all taxes, especially taxes on rich people, because taxation withdraws purchasing power from the taxpayers and, to that extent, reduces effective demand. Care should be taken that measures adopted to raise revenue are disinflationary and at the same time have no harmful effects on production and savings.

Fiscal policy can also contribute to pushing aggregate demand beyond potential GDP in a way that leads to inflation. As ***Figure 4.2***shows, a very large budget deficit pushes up aggregate demand, so that the intersection of aggregate demand (AD_0) and aggregate supply ($SRAS_0$) occurs at equilibrium E_0, which is an output level above potential GDP. Economists sometimes call this an "overheating economy" where demand is so high that there is upward pressure on wages and prices, causing inflation. In this situation, contractionary fiscal policy involving federal spending cuts or tax increases can help to reduce the upward pressure on the price level by shifting aggregate demand to the left, to AD_0, and causing the new equilibrium E_1 to be at potential GDP, where aggregate demand intersects the LRAS curve.

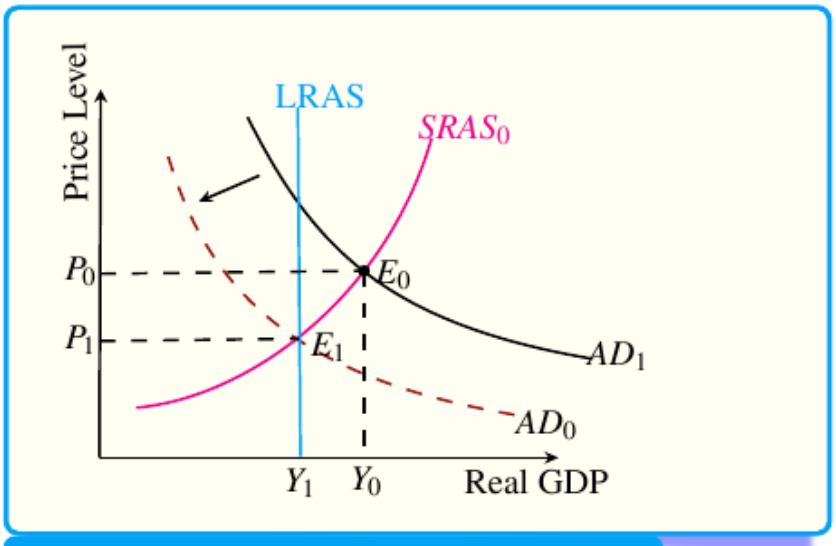


Figure 4.2 Contractionary Fiscal Policy

Dear learner, have you understood all the concepts discussed above? That is very good. If there is something not clear, please reread it, before doing the following Self-test exercise. After doing so, you can try to answer the following self-test questions.

🛠 Self-test Exercise

1. What is an expansionary fiscal policy? How does it operate in the economy?
2. Who manipulates fiscal policy tools and why?

Checklist of Self-test Exercise

Dear learner, we hope you enjoyed working on this section. Now, it is time to check your understanding about tools of fiscal policy, the types of fiscal policy, and its effect on the economy. If it is not clear, go back to your text and reread about it. After reading each question, put a tick mark (√) in the 'yes' or 'no' box, which helps you decide your level of understanding of the points presented and discussed so far.

Check List	Your Response	
	Yes	No
Can you define what expansionary fiscal policy is? How does it operate in the economy?		
Can you explain who manipulates fiscal policy tools and why?		

Dear learner, did you mark any box under the 'No' column? If so, please look at the corresponding item to the left and go back to your text and reread about it.

4.3 Monetary Policy

Overview

Dear learner, in this section you will study about monetary policy, types of monetary policy and it's important in an economy.

Learning Outcomes

At the end of this section, you will be able to:

- contrast expansionary monetary policy and contractionary monetary policy.
- explain how monetary policy impacts interest rates and aggregate demand.
- analyse why monetary policy is important.

Key Concepts

- Monetary policy
- Tools of monetary policy
- Expansionary monetary policy
- Contractionary monetary policy

Now, before going to read the details in each of these concepts, write down short note of your own about monetary policy, types of monetary policy and the important in an economy. Then, compare what you have written with the discussion under each of the concepts.

Monetary policy is the process of drafting, announcing, and implementing the plan of actions taken by the National Bank, or other monetary authority of a country that controls the quantity of money in an economy and the channels by which new money is supplied. The National Bank is a government agency that oversees the banking system and is responsible for the conduct of monetary policy. This bank takes different names in different countries: the Federal Reserve System in the United States and National Bank in Ethiopia, for instance.

Monetary policy consists of the management of money supply and interest rates, aimed at meeting macroeconomic objectives such as controlling inflation, consumption, growth, and liquidity. This is achieved by actions such as modifying the interest rate, buying or selling government bonds, regulating foreign exchange rates, and changing the amount of money which banks are required to maintain as reserves.

Monetary policy is formulated based on inputs which are gathered from a variety of sources. For instance, the monetary authority may look at macroeconomic numbers such as gross domestic product (GDP) and inflation, industry/sector-specific growth rates and associated figures, as well as geopolitical developments in international markets—including oil embargos or trade tariffs. These entities may also ponder concerns which are raised by groups representing industries and businesses, survey results from organizations of repute, and inputs from the government and other credible sources.

4.3.1 Tools of Monetary Policy

The National Bank influences the money supply indirectly by changing the monetary base or the reserve deposit ratio. To do this, it has three instruments at its disposal: **Open market operations (OMO)**: these are the purchases and sales of government bonds by the National Bank. The Birr it pays when the National Bank purchases bonds increases the monetary base and the money supply. When the National Bank sells bonds to the public, the Birr it receives reduces the monetary base and then, decreases the money supply.

The conduct of OMO varies from country to country depending on the legal and institutional setting, the structure of financial system and the stages of development in the securities market of the country. NBE conducts its OMO actively through treasury bills market to influence the variables like liquidity level and net domestic assets of the banking system and money supply in the economy and monitor whether they conform with the targeted level. In light of this, the NBE uses open market operations as one of its monetary policy instruments. In the absence of its own securities, a certain amount of government treasury bills need to be allocated to NBE by the government for its monetary policy purpose (NBE, 2009).

1. **Discount rate (DR)**: the discount rate is the interest rate that the National Bank charges banks to borrow funds from a National Bank. The discount rate is set by the National Bank's board of governors, and can be adjusted up or down as a tool of monetary policy. It is usually set below the short term inter-bank market rate. Accessing the discount window allows institutions to vary credit conditions (i.e., the amount of money they have to loan out), thereby affecting the money supply. Through the discount window, the central bank can affect the economic environment, and thus unemployment and economic growth. In Ethiopia the discount window facility for commercial banks started in March 2001.
2. **Required reserve ratio (RRR):** this refers to the funds that banks must retain as a proportion of the deposits made by their customers in order to ensure that they are able to meet their liabilities. Lowering this reserve requirement releases more capital for the banks to offer loans or to buy other assets. Increasing the reserve requirement, on the other hand. has a reverse effect, curtailing bank lending and slowing growth of the money supply. The NBE uses this instrument to control the liquidity of banks by varying the rate according with the targeted level. The higher reserve requirement contracts the liquidity as well as credit expansion power of commercial banks and the opposite will increase liquidity and credit expansion power of banks. The National Bank of Ethiopia cut the minimum deposit reserve from 15% to 10% in January 2012. It also cut the liquid assets to deposits ratio by the same margin to 20% from 25% previously. The move is aimed to encourage banks to lend money, particularly to the export sector.

4.3.2 Types of Monetary Policies

Generally speaking, monetary policies can be categorized as either: a monetary policy that lowers interest rates and stimulates borrowing, i.e. an expansionary monetary policy or loose monetary policy, conversely or a monetary policy that raises interest rates and reduces borrowing in the economy. i.e., a contractionary monetary policy or tight monetary policy.

Expansionary Monetary Policy

If a country is facing a high unemployment rate during a slowdown or a recession, the monetary authority can opt for an expansionary policy which aims at increasing economic growth and expanding economic activity. As a part of expansionary monetary policy, the monetary authority often lowers the interest rates through various measures, serving to promote spending and make money-saving relatively unfavourable.

Increased money supply in the market aims to boost investment and consumer spending. Lower interest rates mean that businesses and individuals can secure loans on convenient terms to expand productive activities and spend more on big-ticket consumer goods.

Major instruments of expansionary monetary policy are discussed below.

***Reducing a discount rate*:** to increase money supply, the National Bank reduces the discount

rate and, then, enables the commercial banks to take more loans from it and in turn to give more loans to producers (investors) at lower interest rates.

Buying securities through open market operations: this refers to the buying and selling of government securities which influence money supply in the economy. For example, during a depression, the central bank buys government bonds and securities from commercial banks, paying in cash to increase their cash stock and lending capacity.

Reducing required reserve ratio: every commercial bank is required to keep with the central bank a particular percentage of its deposits or reserves in the form of cash. This percentage is called the "required reserve ratio (RRR)" or "cash reserve ratio (CRR)". During a depression, the central bank lowers the CRR, thereby increasing commercial bank's capacity to give credit.

If the economy is suffering a recession and high unemployment, with output below potential GDP, expansionary monetary policy can help the economy return to potential GDP. ***Figure 4.3*** below illustrates this situation. This example uses a short-run upward-sloping Keynesian aggregate supply curve (SRAS). The original equilibrium during a recession of E_0 occurs at an output level of 600. An expansionary monetary policy will reduce interest rates and stimulate investment and consumption spending, causing the original aggregate demand curve (AD_0) to shift right to AD_1, so that, the new equilibrium (E_1) occurs at the potential GDP level of 700.

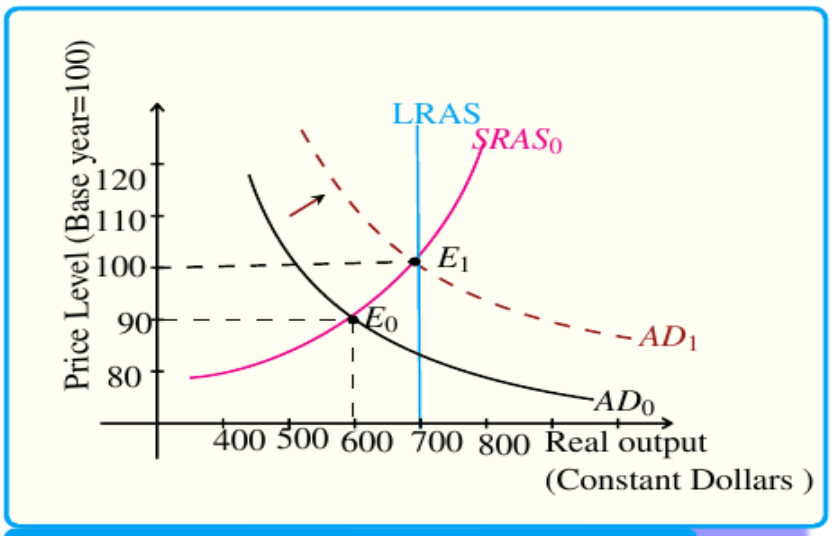


Figure 4.3 Expansionary Monetary Policy

Contractionary Monetary Policy

Increased money supply can lead to higher inflation, raising the cost of living and cost of doing business. Contractionary monetary policy, increasing interest rates, and by slowing the growth of the money supply, aims to bring inflation down. This can slow economic growth and increase unemployment but it is often necessary to cool down the economy and keep it in check.

Major instruments of contractionary monetary policy are discussed below.

Increasing the discount rate: in a situation of excess demand leading to inflation, the central

bank raises its rate. This raises the cost of borrowing, which discourages commercial banks from borrowing from the central bank. An increase in the bank rate forces the commercial banks to increase their lending rates of interest, which makes credit costlier. As a result, the demand for loans falls. On the other hand, the high rate of interest induces households to increase their savings by restricting expenditure on consumption and discourages investment. Thus, expenditure on investment and consumption is reduced, thereby reducing the aggregate demand.

Selling securities through open market operations: during inflation, the central bank sells government securities to commercial banks, which lose an equivalent amount of their cash reserves, thereby reducing their capacity to offer loans. This absorbs liquidity from the system. Consequently, there is a fall in investment and in aggregate demand.

Increasing the RRR: during inflation, the central bank increases the RRR, thereby curtailing the lending capacity of commercial banks.

For example, if an economy is producing at a quantity of output above its potential GDP, a contractionary monetary policy can reduce the inflationary pressures for a rising price level. In ***Figure 4.4*** below, the original equilibrium (E_0) occurs at an output of 750, which is above potential GDP. A contractionary monetary policy will raise the interest rate, which discourages borrowing for investment and consumption spending, and causes the original demand curve (AD_0) to shift left to AD_1, so that, the new equilibrium (E_1) occurs at the potential GDP level of 700.

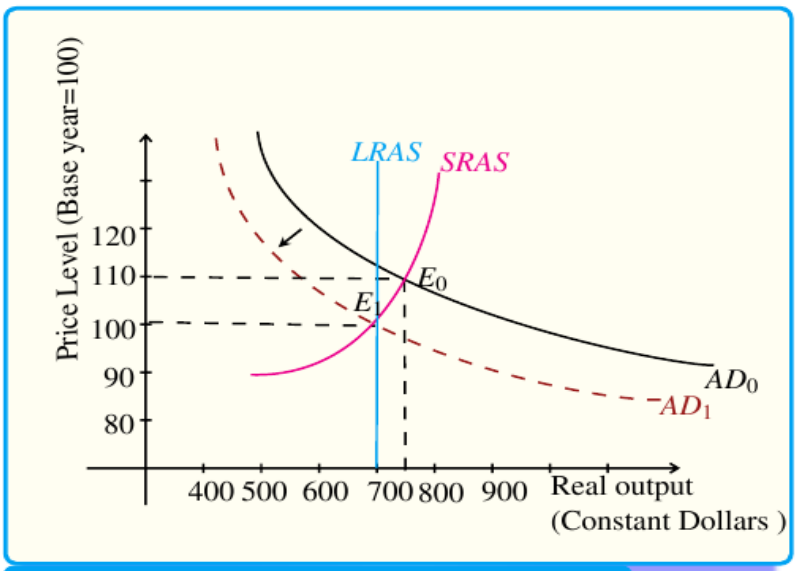


Figure 4.4 Contractionary Monetary Policy

The two examples above suggest that monetary policy should be countercyclical; that is, it should act to counterbalance the business cycles of economic downturns and upswings. The National Bank should loosen monetary policy when a recession has caused unemployment to increase and tighten it when inflation threatens. Of course, countercyclical policy does pose a danger of overreaction. If loose monetary policy that seeks to end a recession goes too far, it may push aggregate demand so far to the right that it triggers inflation. If tight monetary policy that seeks to reduce inflation goes too far, it may push aggregate

demand so far to the left that a recession begins. ***Figure 4.5 (a) and (b)*** summarizes that the chain of effects that connect loose and tight monetary policy to changes in output and the price level.

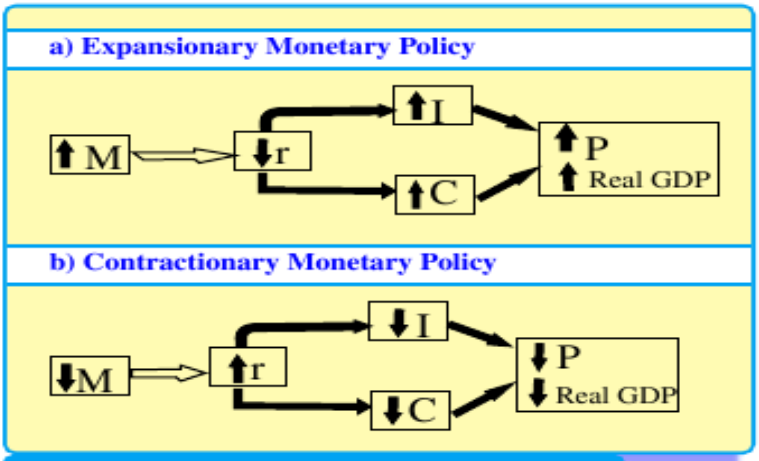


Figure 4.5 The Pathways of Monetary Policy

In the expansionary monetary policy (a) pathway, the central bank causes the supply of money and loanable funds to increase, which lowers the interest rate, stimulating additional borrowing for investment and consumption, and shifting aggregate demand right. The result is a higher price level and, at least in the short run, higher real GDP. (b) In contractionary monetary policy path way (b), the central bank causes the supply of money and credit in the economy to decrease, which raises the interest rate, discouraging borrowing for investment and consumption, and shifting aggregate demand left. The result is a lower price level, and at least in the short run, and lower real GDP.

Dear learner, we hope that you have read what is discussed in the above sections. Haven't you? That is nice of you! Hence, you need to test yourself whether you have understood what you have read or not by trying the following Self-test exercise.

🛠 Self-test Exercise

1. Define monetary policy.
2. List the instruments of monetary policy.
3. Explain the effects of contractionary and expansionary monetary policy on economy.

Checklist of Self-test Exercise

Dear learner, we hope you enjoyed working on this section. Now, it is time to check your understanding about monetary policy, the instruments of monetary policy, and the effects of contractionary and expansionary monetary policy on economy.

Read each question and put a tick mark (√) in the 'yes' or 'no' box, which helps you decide your level of understanding of the points presented and discussed so far.

Check List	Your Response	
	Yes	No
Can you define what monetary policy is?		
Can you mention the instruments of monetary policy?		
Can you explain the effects of contractionary and expansionary monetary policy on economy?		

Dear learner, did you mark any box under the 'No' column? If so, please look at the corresponding item to the left and go back to your text and reread about it.

4.4 Income Policy and Wage

Overview

Dear learner, in this section you will study about income policy, how income policy impacts aggregate supply and aggregate, about minimum wages and the effect of 'pricing policy.

Learning Outcomes

At the end of this section, you will be able to:

- state income policy.
- explain how income policy impacts aggregate supply and aggregate demand.
- explain minimum wages and the effect of 'pricing policy
- summarize the purposes of income policy.

Key Concepts

- Income policy
- Minimum wages
- Price ceiling
- Price floor

Dear learner, from your past experience, what do you understand about minimum wages, price ceiling and price floor? Please, try these questions before you start reading the following detailed discussions. We hope you attempted it! Ok! Now, please, precede to the detail discussions of this section. We wish you Good Reading!

Income policies in economics are economy-wide wages and price controls, most commonly instituted as a response to inflation, and usually seeking to establish wages and prices below free market level. Income policies vary from "voluntary" wage and price guidelines to mandatory controls such as price/wage freezes.

Income policy is the suitable complement for expansionary monetary and fiscal policies, in particular under conditions that reduce the space for further macroeconomic expansion. In some developing countries, wage expansion has proved to be a more reliable source of demand expansion. A policy that maintains real wages expanding in line with productivity would provide a sustainable source of domestic demand expansion.

In an inflationary environment, it is possible to stabilize the price level through the instruments of the income policy. Governments can take this step if restrictive fiscal and monetary policies fail to reduce the increasing price level. We can use these tools of the income policy to preserve price stability:

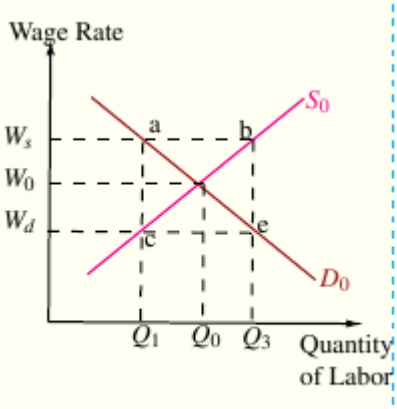
Determination of wage rates in a free market

Just as in any market, the price of labour, the wage rate, is determined by the intersection of supply and demand. When the supply of labour increases, the equilibrium price falls, and when the demand for labour increases, the equilibrium price rises.

A perfectly competitive labour market has the following characteristics:

- A large number of firms competing with each other to hire a specific type of labour to fill identical jobs.
- Numerous qualified people who have identical skills and independently supply their labour services.
- "Wage taking" behaviour, that is, neither workers nor firms exert control over the market wage,
- Perfect, costless information and labour mobility.

Market labour demand is a "price adjusted" downward-sloping curve, whereas, the market labour supply however, generally slopes upward to the right, indicating that collectively workers will offer more labour hours at higher relative wage rates. Higher relative wages attract workers away from either household production, leisure, or other labour markets and towards the labour market in which the wage is increased. This means that even though there are some workers who reduce hours of work as wage rate increase, there are still new workers who enter into the labour market looking at the higher wage rate. The vertical height of the market labour supply curve, measures the opportunity cost of employing the last labour hour. In other words, in perfectly competitive product and labour markets, labour supply curves measure marginal opportunity costs. Furthermore, in order to attract more hours to the labour market, the opportunity costs must be compensated via a higher wage rate.



Wage and employment Determination; the equilibrium wage rate W_O and level of employment Q_O occur at the intersection of labor supply and demand. A surplus, or excess supply, of *ba* would occur at wage rate W_s, a shortage or excess demand would occur if the wage was at W_d. At equilibrium wage W_O the number of hours offered by labor suppliers just matches the number of hours that firms desire to employ.

Figure 4.6 Equilibrium wage rate in a free market economy

Minimum Wages

A minimum wage is the lowest wage per hour that a worker may be paidas mandated by federal law. In simple words, it is a legally mandated price floor on hourly wages, below which workers may not be offered or accept a job.

Minimum wages have been defined as the minimum amount of remuneration that an employer is required to pay to wage earners for the work that is performed during a given period, which cannot be reduced by collective agreement or an individual contract.

The purpose of minimum wages is to protect workers from unduly low pay. They help ensure a just and equitable share of the fruits of progress to all, and a minimum living wage to all who are employed and in need of such protection. Minimum wages can also be one element of a policy to overcome poverty and reduce inequality, including between men and women, by promoting the right to equal remuneration for work of equal value.

Pricing Policy

One of the income policies in economics is price controls; most commonly instituted as a response to inflation, and usually seeking to establish prices which are below free market level. Price ceilings and price floors are the two types of price controls. They do the opposite thing, as their names suggest. A price ceiling puts a limit on the cost that one has to pay or that one can charge for something; it sets a maximum cost, keeping prices from rising above a certain level. A price floor establishes a minimum cost for something, a bottom-line benchmark. It keeps a price from falling below a particular level.

Price Ceiling

A price ceiling is the mandated maximum amount that a seller is allowed to charge for a product or service. Usually set by law, price ceilings are typically applied to staples such as food and energy products when such goods become unaffordable to regular consumers. A price ceiling is a maximum legal price below the equilibrium price. It provides perverse incentives (unintended consequence), causing a shortage (~~see~~ ***Figure 4.7***).

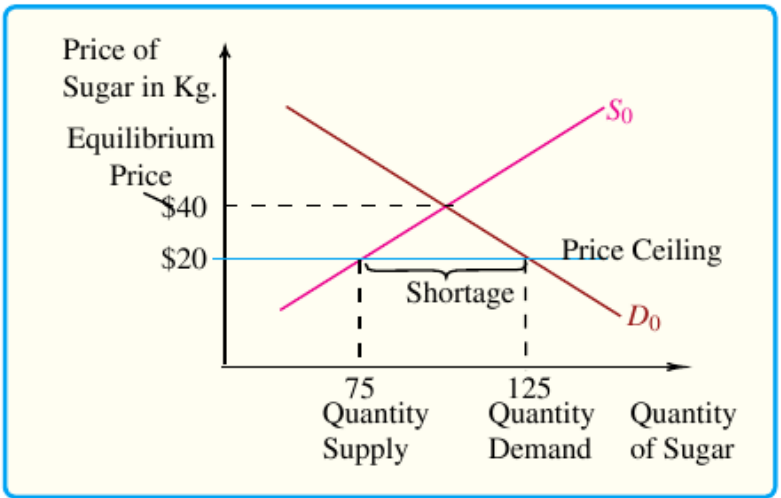


Figure 4.7 Price Ceiling

Price Floor

A price floor is a government- or group-imposed price control or limit on how low a price can be charged for a product, good, commodity, or service. A price floor must be higher than the equilibrium price in order to be effective. An example of a price floor is minimum wage laws, where the government sets out the minimum hourly rate that can be paid for labour.

Price floors are often imposed by governments; however, there are also price floors which are implemented by non-governmental organizations such as companies, and the practice of resale price maintenance. With resale price maintenance, a manufacturer and its distributors agree that the distributors will sell the manufacturer's product at certain prices (resale price maintenance), at or above a price floor (minimum resale price maintenance).

A price floor which is set above the market equilibrium price has several side-effects. Consumers find that they must now pay a higher price for the same product. As a result, they reduce their purchases, switch to substitutes (e.g., from butter to margarine) or drop out of the market entirely. Meanwhile, suppliers find that they are guaranteed a new, higher price than they were charging before, but with fewer willing buyers.

Taken together, these effects mean that there is now an excess supply (known as a "surplus") of the product in the market to maintain the price floor over the long term. The equilibrium price is determined when the quantity demanded is equal to the quantity supplied. Furthermore, the effect of mandating a higher price transfers some of the consumer surplus to producer surplus, while creating a deadweight loss as the price moves upward from the equilibrium price. A price floor may lead to market failure if the market is not able to allocate scarce resources in an efficient manner (see ***Figure 4.8***).

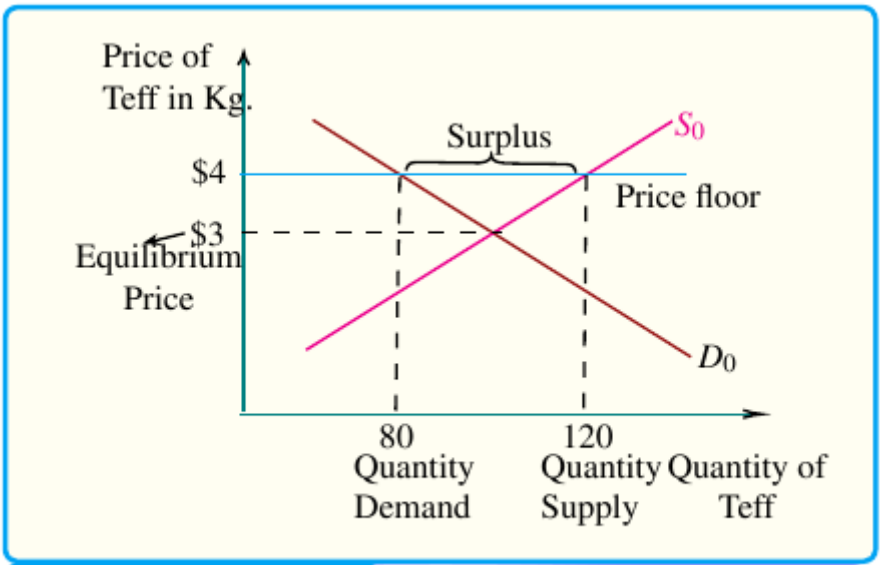


Figure 4.8 Price floor

Dear learner, how did you find the discussions above? Is everything clear? If not, please reread it before doing the following Self-test exercises. Is there anyone who is distance learner like you nearby to you? If there is, get him/her face to face and ask each other if

there are points which are not clear. That is nice of you! Now, go on answering the following self-test exercise.

🛠 Self-test Exercise

1. Explain the difference between price ceilings and price floors.
2. What is the effect of a price ceiling on the quantity demanded of a product?
3. Does a price ceiling change the equilibrium price?
4. What would be the impact of imposing a price floor below the equilibrium price?

Checklist of Self-test Exercise

Dear learner, we hope you enjoyed working on this section. Now, it is time to check your understanding about income policy, how income policy impacts aggregate supply and aggregate, about minimum wages and the effect of 'pricing policy.

Read each question and put a tick (√) mark in the 'yes' or 'no' box, which helps you decide your level of understanding of the points presented and discussed so far.

Check List	Our Response	
	Yes	No
Can you explain the difference between price ceilings and price floors?		
Can you mention the effect of a price ceiling on the quantity demanded of a product?		
Does a price ceiling change the equilibrium price?		
Can you explain the impact of imposing a price floor below the equilibrium price?		

Dear learner, did you mark any box under the 'No' column? If so, please look at the corresponding item to the left and go back to your text and reread about it.

4.5 Foreign Exchange Policies

Overview

Dear learner, in this last section of the unit you will study about types of exchange rate policies, impact of exchange rate fluctuation, key factors that affect foreign exchange rates, advantages and disadvantages of fixed and floating exchange rate systems, and exchange rate structure in Ethiopia.

Learning Outcomes

At the end of this section, you will be able to:

- explain how appreciating or depreciating currency affects exchange rates.
- analyse how the foreign exchange market works.
- identify exchange rate policies.

Key Concepts

- Foreign exchange policies
- fixed exchange rate systems
- floating exchange rate systems

Now, before going to read the details in each of these concepts, write down short note of your own about foreign exchange policies, fixed and floating exchange rate systems, and the economic importance of government's foreign exchange rate policies. Then, compare what you have written with the discussion under each of the concepts.

Dear learner, the policy of the exchange rate affects aggregate demand through its effect on export and import prices of tradable goods and services; in turn, influencing other prices in the economy depending on the foreign exchange regime in place. The policymakers may exploit this connection, in order to influence the macroeconomic trends through the so-called foreign exchange policy, which is defined as the foreign exchange regime including floating, fixed, managed, etc. and regulates foreign exchange transactions in the financial system.

Most countries have different currencies, although that is not true in all cases. Sometimes small economies use an economically larger neighbour's currency. For example, Ecuador, El Salvador, and Panama have decided to dollarize; that is, to use the US dollar as their currency. Sometimes nations share a common currency. A large-scale example of a common currency is the decision by 17 European Nations—including some very large economies such as France, Germany, and Italy to replace their former currencies with the Euro. With these exceptions, most of the international economy takes place in a situation of multiple national currencies in which both people and firms need to convert from one currency to another when selling, buying, hiring, borrowing, travelling, or investing across national borders. We call the market in which people or firms use one currency to purchase another currency, the foreign exchange market. Exchange rate policy is concerned with how the value of the domestic currency, relative to other currencies, is determined.

An exchange rate is nothing more than a price, that is the price of one currency in terms of another currency and so we can analyse it with the tools of supply and demand. The formula for calculating exchange rates is: Starting amount (original currency) / Ending amount (new currency) = Exchange rate. For example, if you exchange 1 U.S. Dollars for 30 Birrs, the exchange rate would be 0.033, but if you exchange 30 Birr for 1 U.S. dollars, the exchange rate would be 30.

In foreign exchange markets, demand and supply are closely interrelated. This is because a person or firm who demands one currency must at the same time supply another currency and vice versa. To get a sense of this, it is useful to consider four groups of people or firms who participate in the market: (1) firms that are involved in international trade of goods and services; (2) tourists visiting other countries; (3) international investors buying ownership (or part ownership) of a foreign firm; (4) international investors making financial investments that do not involve ownership.

Firms that buy and sell in international markets find that their costs for workers, suppliers, and investors are measured in the currency of the nation in which their production occurs, but their revenues from sales are measured in the currency of the different nations in which their sales took place. Thus, an Ethiopians firm exporting abroad will earn some other currency, say US dollars, but will need Ethiopian Birr to pay the workers, suppliers, and investors who are based in Ethiopia. In the foreign exchange markets, this firm will be a supplier of US. dollars and a demander of Ethiopia Birr.

International tourists will supply their home currency to receive the currency of the country that they are visiting. For example, an American tourist who is visiting Ethiopia will supply US dollars into the foreign exchange market and demand Ethiopian Birr.

Types of Exchange Rate Policies

There are two types of exchange rate policy. Namely: fixed and flexible exchange rate policies. Each of them is discussed below.

a) **Fixed Exchange Rate Policy**

Exchange rate is determined by the government's political and economic decisions. There are some problems which are associated with this policy. An example is the creation of a parallel market (also known as a "black market"). Governments use fixed exchange rate systems to accomplish various goals. For example, an undervalued exchange rate acts as an import tax and an export subsidy. Fixing the exchange rate at an artificially low level promotes domestic industries by encouraging exports and discouraging imports. It can also hurt other industries by increasing the price of imported inputs. An overvalued exchange rate has the opposite effect, acting as an import subsidy and an export tax. Fixing the exchange rate at an artificially high level, benefits domestic consumers by encouraging imports and discouraging exports, through decreasing the price of imported inputs.

Fluctuation in exchange rate under fixed exchange rate policy:

- **Devaluation**: an increase in the exchange rates due to political and economic decisions of the government.
- **Revaluation**: a decrease in exchange rate due to political and economic decisions of the government.

b) **Flexible/Floating Exchange Rate Policy**

Exchange rate determination is left for market forces. A flexible/floating exchange rate is a

regime where the currency price of a nation is set by the foreign exchange market based on supply and demand relative to other currencies.

Fluctuation in the exchange rate under flexible exchange rate policy:

- Depreciation: an increase in exchange rate due to market forces.
- Appreciation: a decrease in exchange rate due to market forces.

The exchange rate under a floating exchange rate policy is determined by the supply and demand for foreign currencies (see ***figure 4.9*** below).

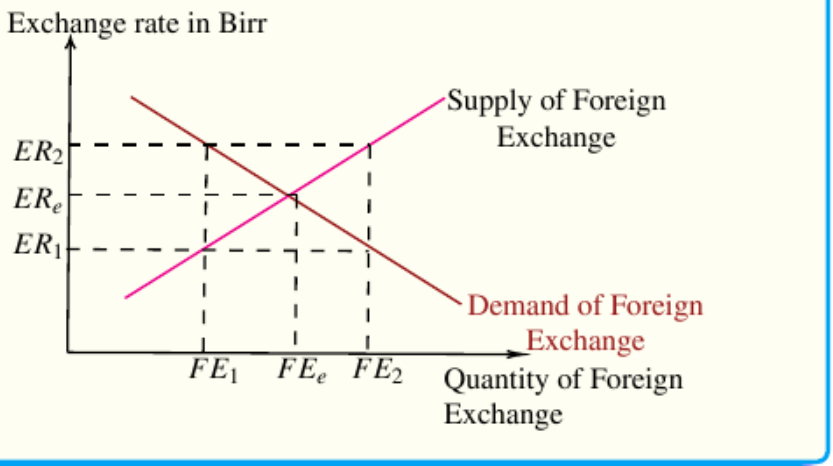


Figure 4.9 Exchange rate under floating exchange rate regime

Impact of Exchange Rate Fluctuation x 0.5 y 0.5 w 7.27 h 10.69

a) ***Impact of devaluation and depreciation***: improves the current account balance and/or overall balance of payment by making exports cheaper and imports more expensive. Given a depreciation of a currency, foreigners find exports cheaper while residents find imports more expensive.
b) ***Impact of revaluation and appreciation***: worsens the external balance by making exports more expensive and import cheaper than before. Given an appreciation of a currency, foreigners find exports more expensive while residents find imports cheaper. All else being equal, an appreciation raises the relative price of the country's exports and decreases the relative price of its imports. Depreciation has the opposite effect.

Key Factors that affect Foreign Exchange Rates

The foreign exchange rate is one of the most important means through which a country's relative level of economic health is determined. A country's foreign exchange rate also provides a window to its economic stability, which is why it is constantly watched and analysed. If you are thinking of sending or receiving money from overseas, you need to keep a keen eye on the currency exchange rates.

The exchange rate is defined as "the rate at which one country's currency may be converted into another". It may fluctuate daily with the changing market forces of supply and demand of currencies from one country to another. For these reasons, when sending or receiving

money internationally, it is also important to understand what determines exchange rates.

Inflation rates: changes in market inflation cause changes in currency exchange rates. A country with a lower inflation rate than another will see an appreciation in the value of its currency. The prices of goods and services increase at a slower rate where the inflation is low. A country with a consistently lower inflation rate exhibits a rising currency value while a country with higher inflation typically sees depreciation in its currency and is usually accompanied by higher interest rates.

Interest rates: changes in the interest rate affect currency value and dollar exchange rate. Foreign exchange rates, interest rates, and inflation are all correlated. Increases in interest rates cause a country's currency to appreciate because higher interest rates provide higher rates to lenders, thereby attracting more foreign capital, which causes a rise in exchange rates.

Balance of payments: a country's current account reflects the balance of trade and earnings on foreign investment. It consists of the total number of transactions including its exports, imports, debt, etc. A deficit in the current account due to spending more of its currency on importing products than its earning through sale of exports causes depreciation.

Government debt: this is public debt or national debt that is owned by the central government. A country with government debt is less likely to acquire foreign capital, leading to inflation. Foreign investors will sell their bonds in the open market if the market predicts government debt within a certain country. As a result, a decrease in the value of its exchange rate will follow.

Terms of trade: related to current accounts and balance of payments, the terms of trade is the ratio of export prices to import prices. A country's terms of trade improves if its export' prices rise at a greater rate than its imports prices. This results in higher revenue, which causes a higher demand for the country's currency and an increase in its currency's value. This in its turn results in an appreciation of the exchange rate.

Political stability and performance: a country's political state and economic performance can affect its currency strength. For example, a country with less of political turmoil is more attractive to foreign investors, so, drawing investment away from other countries with more political and economic stability. An increase in foreign capital, in its turn leads to an appreciation in the value of its domestic currency. A country with sound financial and trade policy does not give any room for uncertainty in the value of its currency. However, a country prone to political unrest may see depreciation in exchange rates.

Recession: when a country experiences a recession, its interest rates are likely to fall, decreasing its chances to acquire foreign capital. For this reason, its currency weakens in comparison to that of other countries, therefore lowering the exchange rate.

Speculation: if a country's currency value is expected to rise, investors will demand more of that currency in order to make a profit in the near future. Thus, the value of the currency

will rise due to the increase in demand. With this increase in currency value comes a rise in the exchange rate as well.

Advantages and disadvantages of fixed exchange rate systems

Advantages of fixed exchange rates

- **Certainty** - with a fixed exchange rate, firms will always know the exchange rate which makes trade and investment less risky.
- **Absence of speculation** - with a fixed exchange rate, there will be no speculation if people believe that the rate will stay fixed with no revaluation or devaluation.
- **Constraint on government policy** - if the exchange rate is fixed, then the government may be unable to pursue extreme or irresponsible macro-economic policies as these would cause a run on the foreign exchange reserves and this would be unsustainable in the medium-term.

Disadvantages of fixed exchange rates

- **The economy may be unable to respond to shocks** - a fixed exchange rate means that there may be no mechanism for the government to respond rapidly to balance of payments crises.
- **Problems with reserves** - fixed exchange rate systems require large foreign exchange reserves and there can be international liquidity problems as a result.
- **Speculation** - if foreign exchange markets believe that there may be a revaluation or devaluation, then there may be a run of speculation. Fighting this may cost the government significantly in terms of its foreign exchange reserves.
- **Deflation** - if countries with balance of payments deficits deflate their economies to try to correct the deficits, this will reduce the surpluses of other countries as well as deflating their own economies to restore their surpluses. This may give the system a deflationary bias.
- **Policy conflicts** - the fixed exchange rate may not be compatible with other economic targets for growth, inflation and unemployment and this may cause conflicts of policies. This is especially true if the exchange rate is fixed at a level that is either too high or too low.

Advantages and disadvantages of floating exchange rates

Advantages of floating exchange rates

- **Protection from external shocks** - if the exchange rate is free to float, then it can change in response to external shocks like oil price rises. This should reduce the negative impact of any external shocks.
- **Lack of policy constraints** - the governments are free with a floating exchange rate system to pursue the policies they feel are appropriate for the domestic economy without worrying about them conflicting with their external policy.
- **Correction of balance of payments deficits** - a floating exchange rate can

depreciate to compensate for a balance of payments deficit. This will help restore the competitiveness of exports.

Disadvantages of floating exchange rates

- **Instability** - floating exchange rates can be prone to large fluctuations in value and this can cause uncertainty for firms. Investment and trade may be adversely affected.
- **No constraints on domestic policy** - governments may be free to pursue inappropriate domestic policies (e.g. excessively expansionary policies) as the exchange rate will not act as a constraint.
- **Speculation** - the existence of speculation can lead to exchange rate changes that are unrelated to the underlying pattern of trade. This will also cause instability and uncertainty for firms and consumers.

Exchange Rate Structure in Ethiopia

The legal currency of Ethiopia (Birr) was first introduced in 1945 with an official exchange rate of Birr 2.48 per US dollar with a value of 0.36 grams of fine gold. The linkage with fine gold was in accordance with the monetary system established by the Bretton Woods Agreement of 1944 which established the exchange rate between the national currency and other currencies with the same arrangement. This fixed exchange rate was under operation for almost two decades. On 1 January 1964 the Ethiopian Birr was slightly devalued to 2.50 birr per US dollar. Following the collapse of the Bretton Woods System in 1971, the Ethiopian dollar was revalued to 2.30 birr per US dollar on 21 December 1971. The subsequent 10% devaluation of the US dollar temporarily brought about undervaluation of the Birr. It was again revalued to 2.07 Ethiopian Birr per US dollar in February 1973. From then on, the Ethiopian currency was pegged to the US dollar at the rate of 2.07 Birr per dollar until massive devaluation in October 1992.

Following the overthrown of the Derg Regime, EPRDF introduced the auction-based exchange rate determination scheme and the interbank money market. Additionally, the principle of gradualism in liberalization of exchange rate market is at the heart of this policy development. The exchange rate reform was started by devaluing the currency, which had been fixed for about two decades to 2.07 Birr per US dollar, by 140% to 5 birr per US dollar in October 1992. In 1993 the NBE introduced the auction-based exchange rate system. It was conducted on a fortnightly basis and took the form of discriminatory price which clears the market for the coming two weeks. The supply of funds for this market was obtained from export earnings, loans and grants. The auction-based exchange rate system was initially worked side by side with the official exchange rate. Before the unification of official exchange rate and auction-based exchange rate systems in August 1995, the official exchange rate was used for imports of fertilizer, petroleum, pharmaceutical products, Ethiopia's contribution to international organizations and external debt service payments. In July 1996 the NBE introduced a weekly auction replacing the previous auction system. The NBE also replaced the retail auction system by a wholesale auction system where banks are considered as wholesale bidders.

In 1998, the NBE issued directives aimed at establishing interbank foreign exchange and

money markets. The interbank foreign exchange market is a wholesale market, where the amount traded is large and the spread between buying and selling rates is narrower than the normal situation for commercial transactions. It is an exclusive market for banks to trade foreign exchange with each other. The establishment of this market is primarily motivated by the recognition that the foreign exchange supply by NBE through the auction system is not sufficient to satisfy the demand of banks. Currently, the exchange rate is determined through an interbank foreign exchange market on a daily basis, a clear indication of the government's policy of gradualism toward liberalizing the exchange rate market.

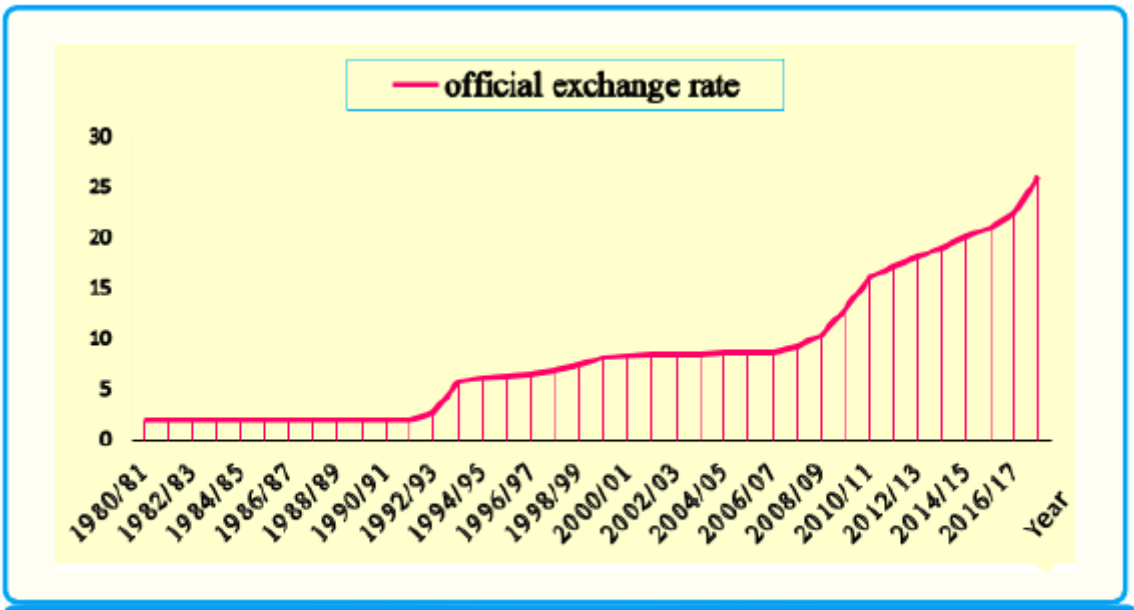


Figure 4.10 Trends of Official Exchange Rate in Ethiopia (Birr Per USD)

Source: *Computed based on NBE data*

Furthermore, NBE continued to devalue the Birr in August 2010 by 20% from 13.63 to 16.35 per US dollar as a mechanism to boost foreign exchange earnings. The devaluation of the Birr in 2010 was followed by the rise in inflation of about 33% in 2011 (after one year of currency devaluation). This type of relationship between exchange rate change and change in inflation tells us that inflation in Ethiopia responds positively to devaluation. The Birr continued to depreciate but at a very slow rate and it reached 18.19/US$ October 2012/13. This gradual depreciation is in line with the goal to enhance the competitiveness of Ethiopian exports and attract foreign direct investment. The average exchange rate of Birr against US dollar in the official market showed an annual depreciation of 5.4% since 2011/12. In January 2014, the exchange rate reached 19.107 Birr/US$, a 4.85% depreciation since January 2013.

The fluctuation in commodity prices in international markets and the strength of US dollar relative to other currencies, led to the decline of Ethiopia's export commodities, especially coffee, oilseed, gold, and leather. The World Bank suggested that the Ethiopian government should devalue its currency by at least 10%, pointing out that in real terms it may lead to a 5% increase in export earnings and 2% increase in growth. As a result, on October 10, 2017, the NBE devalued the Birr by 15% against international currencies (National Bank of Ethiopia,

2017). According to the government, the devaluation was undertaken to encourage exports and overcome the foreign exchange shortage as well as to suppress the black market. Since 10 October 2017, inflation seems to have picked up. Annual inflation as measured by the CPI growth rate increased from 2.8% in 2010 to 20.2% 2020. In general, at every time of devaluation, the rise in inflation is inevitable (National Bank of Ethiopia,2020/21).

🛠 Self-test Exercise

Dear learner, we hope that you have read what is discussed in the above sections. Haven't you? That is nice of you! Hence, you need to test yourself whether you have understood what you have read or not by trying the following Self-test exercise.

1. Define exchange rate policy.
2. Explain the effects of foreign exchange rate policies on an economy.

Checklist of Self-test Exercise

Dear learner, we hope you enjoyed working on this section. Now, it is time to check your understanding about the concept of exchange rate policy and its effects on an economy.

Read each question and put a tick (√) mark in the 'yes' or 'no' box, which helps you decide your level of understanding of the points presented and discussed so far.

Check List	Your Response	
	Yes	No
Can you define what exchange rate policy is?		
Can you explain the effects of foreign exchange rate policies on an economy?		

Unit Summary

Macroeconomic policies can play a useful role in achieving maximum feasible output, a high rate of economic growth, full employment, and price stability, equality in the distribution of income and wealth, and a healthy balance of payments. To achieve these objectives, different types of macroeconomic policies, such as, fiscal, monetary, income, and foreign exchange policies are adopted. **Expansionary policies** are adopted in the situation of deficient demand, whereas **contractionary policies** are adopted in the situation of excess demand.

Fiscal policy is the expenditure and revenue (tax) policy of the government to achieve the desired objectives. It can be expansionary or contractionary depending upon prevailing economic conditions. The instruments of expansionary fiscal policies are an increase in government expenditure and a reduction in tax rates; and the instruments of contractionary

fiscal policies are a reduction in government expenditure and an increase in tax rates.

Monetary policy is what a government, National Bank, or monetary authority of a country uses to control the supply of money and the cost of money (rate of interest). Similar to fiscal policy, monetary policy can also be expansionary or contractionary depending upon prevailing economic conditions. The instruments of expansionary monetary policy are: a reduction in the bank rate (discount rate), buying of securities by the central bank and reduction in required reserve ratio. On the other hand, the instruments of contractionary monetary policies are increase in discount rate, selling of securities by the central bank and an increase in required reserve ratio.

Income policies are wage and price controls which usually seek to establish wages and prices that are below free market level. Minimum wages have been defined as the minimum amount of remuneration that an employer is required to pay wage earners for the work performed during a given period, which cannot be reduced by collective agreement or an individual contract. A **price floor** is a minimum price at which a product or service is permitted to sell. Many agricultural goods have price floors imposed by the government. The most important example of a price floor is the minimum wage. **Foreign exchange policy** is concerned with how the value of the domestic currency, relative to other currencies, is determined. **Fixed and floating** are the major categories of exchange rate policies.

Unit Review Exercises

Part I: True or False

Read the following statements and write "True" for correct sentences and "False" for incorrect ones.

1. Expansionary monetary policy when the economy is operating with little or no excess capacity will likely result in more inflation than increase in GDP
2. Expansionary fiscal policies are adopted to reduce aggregate demand.
3. Government should reduce tax rates to increase aggregate demand.
4. Control of wages becomes necessary when there is a situation of inflation.
5. When G – T is positive, the government budget is in surplus.

Part II: Multiple Choices

For the following question choose the best answer from the given alternatives.

1. the Federal Government can implement contractionary fiscal policy by:
   A. Increasing taxes on personal income and corporations.
   B. Increasing government spending on infrastructures like roads and bridges
   C. Increasing grant funding to state and local governments for local spending needs.
   D. Decreasing taxes on personal income and corporations.

2. A reduction in bank rate is:

   A. a contractionary fiscal policy. B. an expansionary fiscal policy.

C. an expansionary monetary policy.
D. a contractionary monetary policy.

3. Contractionary fiscal policy consists of reductions in government spending or increases in taxes

A. True
B. False

4. To control the situation of excess demand the central bank:

A. reduces discount rate.
B. sells government securities.
C. decreases RRR.
D. none of the above.

5. Monetary policy

A. involves running a surplus and deficit
B. involves changing money supply and taxes
C. is managed by the National Bank
D. none of the above

6. To control the situation of deficient demand:
   A. government expenditure is reduced.
   B. tax rates are increased.
   C. the bank rate is reduced.
   D. all of the above.
7. What is meant by monetary policy?
   A. The process by which the Parliament controls the money supply
   B. The process by which the National Bank or monetary authority of a country controls the supply of money
   C. The process by which International Market controls the money supply
   D. None of the above
8. Fiscal policy refers to:
   A. government spending and taxation decisions.
   B. control of the money supply.
   C. decisions to alter market interest rates.
   D. control of the producer price index.
9. The key issues of macroeconomics are:
   A. unemployment
   B. inflation
   C. economic growth
   D. all of the above.
10. An appreciation of the Ethiopian Birr relative to the US dollar would result in all of the following except:
    A. increase net exports.
    B. increase AD.
    C. a reduction in the price of imported resources.
    D. an increase in the price of exported resources.

Part III: Short Answer

For the following questions write short answers.

1. What is the meaning of fiscal policy? Explain how the following two things affect demand in an economy:
   a) Change in government expenditure.
   b) Change in tax rates.
2. What is the difference between fiscal policy and monetary policy?
3. What is the difference between excess and deficient aggregate demand?
4. Why do we need a foreign exchange market?
5. Explain the various monetary policy instruments by which excess demand in an economy can be controlled.

Answer Key for Self-test Exercises

Part I: True or False

1. True	2. False	3. False	4. True	5. False

Part II: Multiple Choices

1. A	3. A	5. C	7. B	9. D
2. C	4. B	6. C	8. A	10. C

Part III: Short Answers

1. Fiscal policy is the expenditure and revenue (tax) policy of the government to achieve the demand objective.
   a) Change in government expenditure: - during a period of deficiency in demand, the government should make large investments in public works, like construction of roads, bridges, buildings, railway lines, canals etc. and provide education and medical facilities. In a situation of excess demand government should curtail its expenditure on public works such as roads, buildings, rural electrification, irrigation work, etc. There by reducing the money income of the people and their demand for goods and services.
   b) Taxes on personal incomes and taxes on expenditures on building etc, should be reduced, if possible tax on lower incomes groups be abolished. During inflation, government should raise rates of all taxes especially on rich people, but care should be taken that the revenue should be disinflationary.

2.

	Fiscal Policy	Monetary Policy
1	It is related to public revenue, public expenditure and public debt.	It is related with the supply, availability and cost of money.
2	The main instruments of fiscal policy are taxes, public expenditure, deficit financing and public borrowing	Its main instruments are the bank rate, open market operations, and cash reserve ratio
3.	It has a direct impact on all sectors of the economy.	It has a direct impact on selective business activities in the economy.

3.

	Excess Demand	Deficient Demand
1	It is a situation in which planned aggregate expenditure is greater than the output at full employment level.	It is a situation when planned aggregate expenditure falls short of output corresponding to full employment level.
2	It generates inflation in the economy.	It generates deflation in the economy.
	It indicates over full employment equilibrium.	It indicates under employment or less than full employment equilibrium.
3	In this situation, output and employment do not increase with increase in aggregate demand.	In this situation, both output and employment increase along with increase in aggregate demand.

4. Foreign currency rates fluctuate based on the market forces of demand and supply. This means the rates can change at any given moment. We need a foreign exchange market to determine a value for each foreign currency and this makes it easier to exchange different currencies for one another.
5. Monetary measures by which excess demand in an economy can be checked includes: - changing the bank rate (discount rate), buying and selling of government of securities and hanging the required reserve ratio.

Reference

Branson, W. (1989) *Macroeconomic Theory and Practice*, 3re ed., New York Harper & Row Publishers.

Dornbusch, R. and S. Fischer (1994) *Macroeconomics*, 2nd edition, New York: McGraw-Hill.

Gareth D. Myles (1997) *Public Economics*.Cambridge University press

Gruber, Jonathan (2005). PUBLIC FINANCE AND PUBLIC POLICY. New York, NY: Worth Publishers.

Harber P. Bernand (1999) *Modern Public Finance*. Delhi: AITBS Publishers & Distributors.

Mankiw, G. (2000) *Macroeconomics*, 5th edition, Worth Publishing International Edition.

Glossary

Aggregate: Total for the whole economy.

Aggregate demand – a schedule or curve that shows the total quantity of goods and services demanded (purchased) at different price levels.

Aggregate supply – A schedule or curve showing the total quantity of goods and services supplied (produced) at different price levels.

Appreciation: A rise in the value of a currency relative to other currencies in the market for foreign exchange.

Budget deficit – The amount by which the expenditures of the Federal government exceed its revenues in any year.

Budget surplus – The amount by which the revenues of the Federal government exceed its expenditures in any year.

Business cycle – A term that is used to describe the ups and downs in economic activity.

Capabilities – The freedoms that people have, given their personal features and their command over commodities.

Demand – the quantity of a product that consumers will purchase at each possible price.

Demand curve – a graph indicating the product quantities that will be demanded at different possible prices.

Demand shocks: Exogenous events that shift the aggregate demand curve.

Determinants of aggregate demand – Factors such as consumption spending, investment, government spending, and net exports that, if they change, shift the aggregate demand curve.

Determinants of aggregate supply – Factors such as input prices, productivity, and the legal-institutional environment that, if they change, shift the aggregate supply curve.

Equilibrium - A state of rest; a situation that, once achieved, will not change unless some external factor previously held constant, changes.

Employment rate – The percentage of the labour force employed at time.

Excess demand- At a given price, the excess of quantity demanded over quantity supplied.

Excess supply- At a given price, the excess of quantity supplied over quantity demanded.

Functionings - What people do or can do with the commodities of given characteristics that they come to possess or control.

Gross Domestic Product (GDP) – the most common measure of an economy's production; the current market value of all final goods and services produced in an economy for a specific period of time (typically one year), using factors of production located within the country.

Gross National Product (GNP)- The total income of all residents of a nation, including the income from factors of production used abroad; the total expenditure on the nation's

output of goods and services.

Gross national income (GNI) - The total domestic and foreign output claimed by residents of a country, consisting of gross domestic product (GDP) plus factor incomes earned by foreign residents, minus income earned in the domestic economy by non-residents.

Hyperinflation-Extremely high inflation.

Imports- Goods and services produced abroad but consumed domestically.

Inflation – a sustained increase in the average price level.

Investment: Goods purchased by individuals and firms to add to their stock of capital.

Market failure- A market equilibrium that fails to take advantage of every Pareto improvement.

Money – anything that functions as a medium of exchange; a unit of account; and a store of value.

Monetary policy – A central bank's changing of the money supply to influence interest rates and assist the economy in achieving price stability, full employment, and common growth.

Money supply – the quantity of money available to be spent at a given time.

Net exports – the difference between the total value of a nation's exports and the total value of its imports.

New Keynesian economics: The school of thought according to which economic fluctuations can be explained only by admitting a role for some microeconomic imperfection, such as sticky wages or prices.

Purchasing power parity (PPP) - Calculation of GNI using a common set of international prices for all goods and services, to provide more accurate comparisons of living standards.

Real GDP – the value of the GDP adjusted for a change in price, expressed in constant dollar.

Self-esteem - The feeling of worthiness that a society enjoys when its social, political, and economic systems and institutions promote human values such as respect, dignity, integrity, and self-determination.

Supply – the quantity of a good or service that firms will offer for sale at each possible price.

Supply curve – a graph indicting the product quantities that will be supplied at different possible prices.

Short run- A time horizon during which at least one of the firm's inputs cannot be varied.

Trade balance: The receipts from exports minus the payments for imports.

Unemployment rate: The percentage of those in the labour force who do not have jobs.

Wage: The amount paid for one unit of labour.

ECONOMICS

DISTANCE MODULE I

GRADE 12

FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA
MINISTRY OF EDUCATION